Wireless Transmitter

WT-1

User's Manual

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Introduction

Thank you for purchasing a WT-1 wireless transmitter for compatible Nikon digital cameras. When connected to the camera, the WT-1 can be used to transmit images from the camera memory card to a server.

This manual describes how to transmit images from the camera to a server via wireless LAN. Before using the WT-1, be sure to read the "Declaration of Conformity" (pp. 1–2) and "For Your Safety" (pp. 2–3).

Declaration of Conformity

U.S.A. Federal Communications Commission (FCC)
Declaration of Conformity

This device complies with Part 15 of the FCC rules. Operation of the device is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must not accept any interference that may cause undesired operation.

Products that contain a radio transmitter are labeled with FCC ID and may also carry the FCC logo.

> **Nikon**   WT-1
> **FC** Tested To Comply
>   With FCC Standards
> FOR HOME OR OFFICE USE
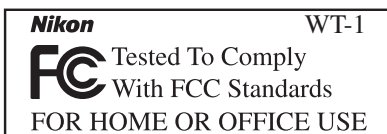
FCC Radio Frequency Interference Statement

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/television technician for help.

This device complies with the FCC RF exposure requirements.

CAUTION
Modifications
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.

Notice for customers in the State of California, U.S.A.
WARNING: Handling the cord on this product will expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. *Wash hands after handling.*

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**
Failure to observe this precaution could result in fire, electric shock, or other injury. Should the product break open as the result of a fall or other accident, disconnect the camera power source and take the product to a Nikon-authorized service representative for inspection.

⚠️ **Turn camera off immediately in the event of malfunction**
Should you notice smoke or an unusual smell coming from the equipment, immediately remove the battery from the camera, 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.

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

⚠️ **Do not use in the presence of flammable gas**
Failure to observe this precaution could result in explosion or fire.

⚠️ **Do not handle with wet hands**
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.

⚠️ **Follow the instructions of hospital and airline personnel**
This device emits radio frequency radiation that could interfere with medical or navigational equipment. Do not use this device in a hospital or on board an airplane without first obtaining the permission of hospital or airline staff.

⚠️ **Do not expose to high temperatures**
Do not leave the device in a closed vehicle under the sun or in other areas subject to extremely high temperatures. Failure to observe this precaution could result in fire or in damage to the casing or internal parts.

⚠️ **Observe caution when using the WA-E1**
When using the WA-E1 Extended Range Antenna (available separately), be careful not to put the tip of the antenna in your eye accidentally. Failure to observe this precaution could result in blindness or other visual impairment.

Symbols and Conventions

The following symbols and conventions are used throughout this manual:

This icon marks notes, information that should be read before using the device.

This icon indicates that more information is available elsewhere in this manual.

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 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).

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/*

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 URL below for contact information:

http://www.nikon-image.com/eng/

Wireless Networks

Configuration
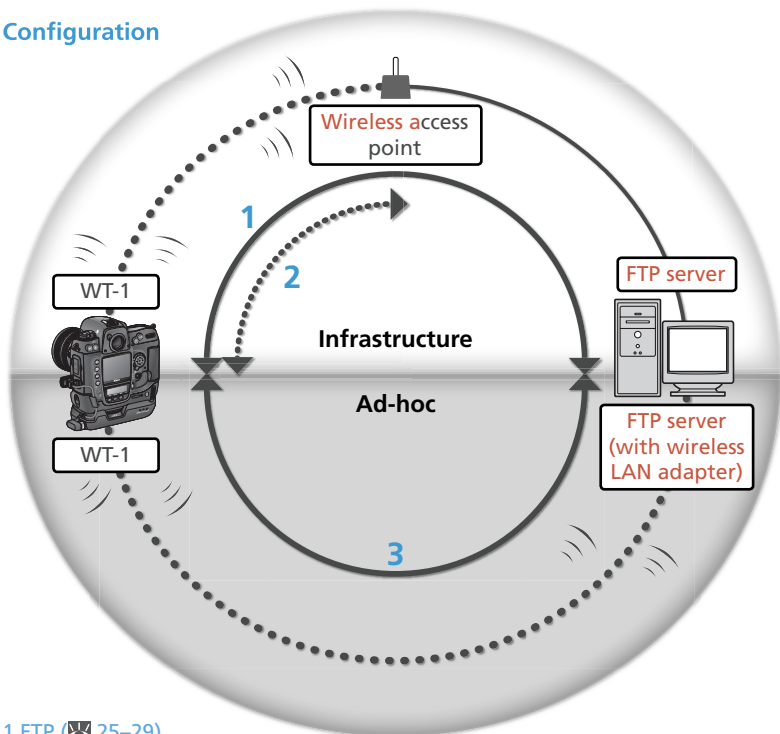
1 FTP (⚠ 25–29)
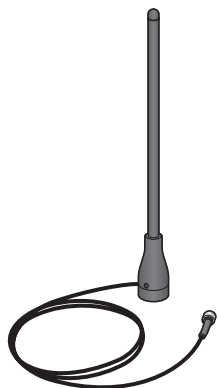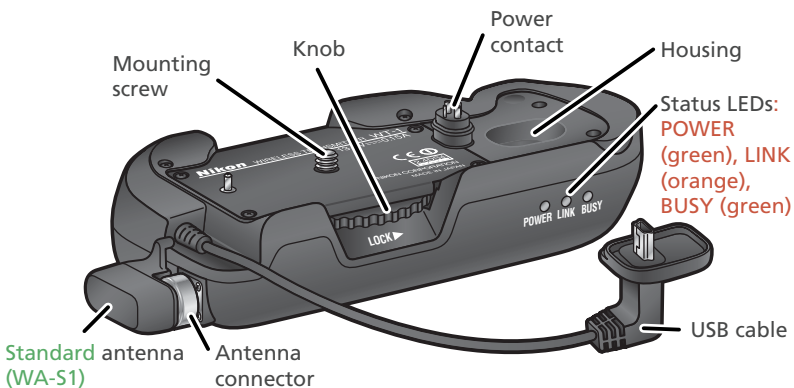2 Wireless LAN (⚠ 18–21), TCP/IP (⚠ 21–25)
3 Wireless LAN (⚠ 18–21), TCP/IP (⚠ 21–25), FTP (⚠ 25–29)

The WT-1 wireless transmitter is a wireless LAN adapter that allows photographs to be uploaded from the camera to an ftp server. Photographs can be uploaded as they are taken, or photographs already on the camera memory card can be selected for upload.
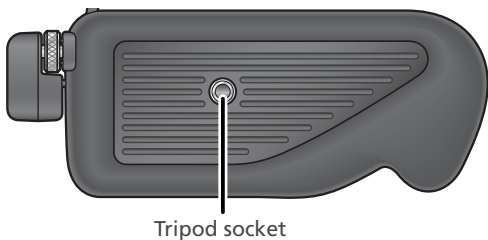
This manual describes how to connect and use the WT-1. A wireless access point and ftp server are also required. The following operating systems have built-in ftp server functions: Windows XP Professional, Windows 2000 Professional, and Mac OS X version 10.1.0 or later. For information on wireless access points and setting up an ftp server, contact the manufacturer.

Setup

Parts of the WT-1

Mounting screw

Knob

Power contact

Housing

Status LEDs:
POWER (green), LINK (orange), BUSY (green)

POWER LINK BUSY

LOCK▶

Standard antenna (WA-S1)

Antenna connector

USB cable

Tripod socket

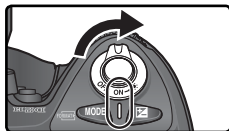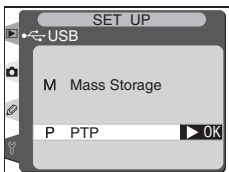WA-E1 extended range antenna (available separately)

BL-2 battery-chamber cover (for camera battery chamber)

Attaching the WT-1

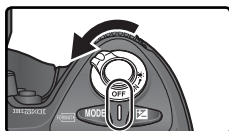1 Turn the camera on.

2 Before connecting the WT-1, set the **USB** option in the camera setup menu to **PTP**.

> SET UP
> ← USB
>
> M Mass Storage
>
> P PTP ▶ OK

3 Turn the camera off.

4 Remove the cover protecting the camera power contact.
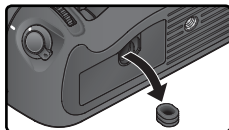
5 Place the camera on the WT-1 and rotate the knob in the direction shown to fasten the WT-1 to the camera tripod mount.

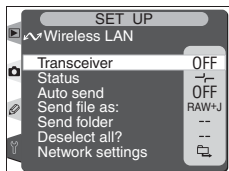6 Connect the USB cable to the camera USB connector.

7 Pass cable over guide on BL-2 battery-chamber cover.

Wireless LAN Setup

The **Wireless LAN** option in the camera setup menu is available when the WT-1 is attached. See the "Menu Guide" (🐾 00) for details.

| Option	Description	🐾
Transceiver	Turn wireless LAN transceiver on or off.	00–00
Status	Shows status of link between server and WT-1.	00–00
Auto send	Choose whether to send pictures to server as they are taken.	00–00
Send file as:	Choose whether to send both NEF and JPEG files or only JPEG files when sending images taken at settings of **NEF + JPEG Fine**, **NEF + JPEG Normal**, or **NEF + JPEG Basic**.	00–00
Send folder	Send all images in selected folder or folders. Images will be sent in sequence, starting from lowest file number.	00–00
Deselect all?	Remove transfer marking ("send," "sending," or "sent" indicators) from all files.	00–00
Network settings	Adjust settings for connection to server.	00–00

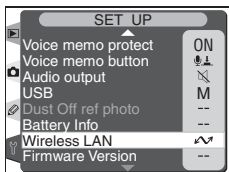# Uploading Images

Preparation

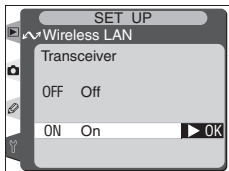1 Insert the memory card containing the pictures to be sent.
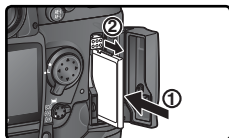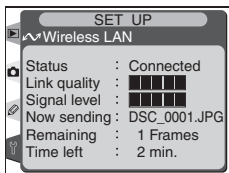
2 Turn the camera on.
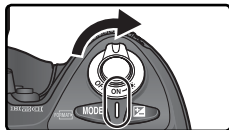
3 Adjust network settings (🔲 00).

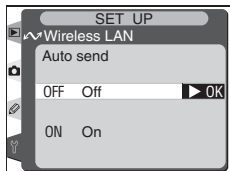4 Select **On** for the **Wireless LAN** > **Transceiver** option in the camera setup menu (🔲 00).

5 Select **Status** from the **Wireless LAN** menu and confirm that "Connected" is shown for "Status" (🔲 00).

SET UP	
Voice memo protect	ON
Voice memo button	🎤±
Audio output	🔇
USB	M
Dust Off ref photo	--
Battery Info	--
Wireless LAN	〰
Firmware Version	--

SET UP	
〰 Wireless LAN	
Transceiver	
OFF Off	
ON On	▶ OK

| SET UP	
〰 Wireless LAN	
Status	: Connected
Link quality	: ▮▮▮▮
Signal level	: ▮▮▮▮
Now sending	: DSC_0001.JPG
Remaining	: 1 Frames
Time left	: 2 min.

Uploading Images

1 Select **Off** for **Wireless LAN** > **Auto send**.

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

3 Press the center of the multi selector while pressing the button. The image will be marked with a yellow "send" icon and transmission will begin immediately. Repeat this process to send additional images (pictures will be sent in the order selected).
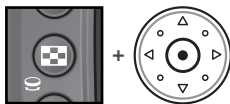
Images that have been successfully uploaded are marked with a white "sent" icon.

Interrupting Transmission

To cancel transmission of images marked with a "send" icon, select the images during playback and press the center of the multi selector while pressing the ⊕ button. The "send" icon will be removed. Any of the following actions will also interrupt transmission:

- Turning the camera off
- Choosing **Off** in the **Wireless LAN** > **Transceiver** menu
- Selecting **Deselect all?** in the **Wireless LAN** menu
- Deleting the images by pressing the 🗑 button while the images are selected
- Formatting the memory card

✐ **Loss of Signal**

Transmission may be interrupted if the signal is lost (📖 000). Transmission can be resumed by turning the camera off and then on again, activating the camera exposure meters, or selecting **On** for **Wireless LAN** > **Transceiver** once the signal is restored.

✐ **Turning the Camera Off**

"Send" marking will be saved if the camera is turned off or **Off** is selected for **Wireless LAN** > **Transceiver** while transmission is in progress. Transmission of images marked with a "send" icon will resume when the camera is turned on or **On** is selected for **Wireless LAN** > **Transceiver**.

✐ **Voice Memos**

Voice memos can not be uploaded separately, but will be included when the associated pictures are transmitted.

"Send," "Sending," and "Sent" Icons

The following icons are displayed when images selected for upload are viewed during playback.

"Send"

Images that have been selected for upload are marked with a yellow "send" icon (📷✉). If the image is sent successfully, the yellow 📷✉ icon will turn white.

"Sending"

During upload, the 📷✉ icon is displayed in red.

"Sent"

Images that have been uploaded successfully are marked with a white 📷✉ icon.

✐ **Removing "Send" and "Sent" Indicators**

"Send," "sending," and "sent" indicators can be removed from all images by selecting **Delete tags** from the **Wireless LAN** menu (⚙ 000).

Network Status

The status of the link between the server and the WT-1 is shown by the status LEDs and by the **Status** display in the **Wireless LAN** menu.

The Status LEDs

The POWER LED lights when the WT-1 is receiving power from the camera.

Status	POWER	LINK	BUSY
Camera or exposure meters off, or **Off** selected for **Wireless LAN** > **Transceiver**	◯ (off)	◯ (off)	◯ (off)
Camera and exposure meters on, and **On** selected for **Wireless LAN** > **Transceiver**	◯ (on)	◯ (off)*	◯ (off)†

The status of the link between the WT-1 and the server is shown by the LINK LED, which blinks at different speeds to indicate link quality. The BUSY LED lights when data remain to be sent.

Status	POWER	LINK	BUSY
Connecting to server	◯ (on)	◯ (on)	◯ (off)†
Connected to server	◯ (on)	☼ (blinks)	◯ (off)†
Sending data	◯ (on)	☼ (blinks)	◯ (off)†
Data remaining	◯ (on)	◯ (off)*	◯ (on)

The following indicate that an error has occurred:

Status	POWER	LINK	BUSY
Connection error	☼ (blinks)	◯ (off)	◯ (off)
WT-1 hardware malfunction	☼ (blinks)	☼ (blinks)	☼ (blinks)

* Lights while connecting to server, blinks once connected
† Lights if data remain to be sent

The **Status** *Display*

Network status can also be viewed by selecting **Status** from the **Wireless LAN** menu.

Status

The status of the link between the server and the camera.

Status	: Connected
Link quality	:

Link quality

A five-level indicator of link quality.

Status	: Connected
Link quality	:
Signal level	:

Signal level

A five-level indicator of signal strength.

Link quality	:
Signal level	:
Now sending	: DSC_0001.JPG

Now sending

The name of the file currently being sent.

Signal level	:
Now sending	: DSC_0001.JPG
Remaining	: 1 Frames

Remaining

The number of files remaining to be sent.

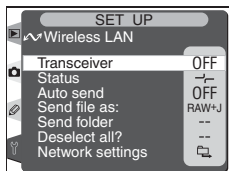| Now sending	: DSC_0001.JPG
Remaining	: 1 Frames
Time left	: 2 min.

Time left

Estimated time required to send remaining data.

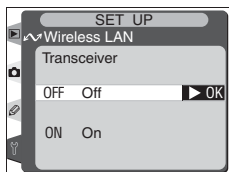| Remaining	: 1 Frames
Time left	: 2 min.

Menu Guide

This section describes the options available in the **Wireless LAN** sub-menu of the camera setup menu.

```
            SET  UP
  ∿Wireless LAN
  Transceiver       OFF
  Status            ⌁
  Auto send         OFF
  Send file as:     RAW+J
  Send folder       --
  Deselect all?     --
  Network settings  ⌸
```

Transceiver

Turn the WT-1 transceiver on or off.

```
            SET  UP
  ∿Wireless LAN
  Transceiver
  OFF  Off        ▶ OK
  ON   On
```

Option	Description
Off (default)	Transceiver off. Camera can not communicate with server.
On	Transceiver on. Camera can communicate with server.

Status

Current status of the link between the WT-1 and the server (📖 00).

```
            SET  UP
  ∿Wireless LAN
  Status       : Connected
  Link quality : ▮▮▮▮▮
  Signal level : ▮▮▮▮▮
  Now sending  : DSC_0001.JPG
  Remaining    : 1 Frames
  Time left    : 2 min.
```
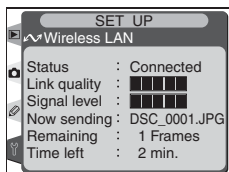
📝 **Turning the Transceiver On**

Transmission of images marked with a "send" icon begins as soon as **On** is selected for **Wireless LAN** > **Transceiver**.

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Auto Send

Choose whether to upload pictures to the server as they are taken.

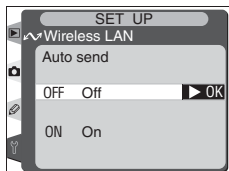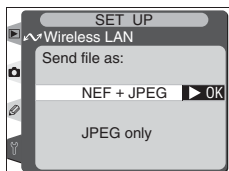| Option	Description
Off (default)	Pictures are not automatically uploaded to server as they are taken. Pictures can be selected for transmission when camera is in playback mode.
On	Pictures are uploaded to server as they are taken.* Transmission begins as soon as picture has been recorded to camera memory card. Be sure memory card is inserted in camera before shooting.

* Pictures will not be uploaded to the server if **Off** is selected in the **Wireless LAN**>**Transceiver** menu. Pictures will instead be marked with a "send" indicator as they are recorded to the memory card.

Send File As:

When sending images taken at settings of **NEF + JPEG Fine**, **NEF + JPEG Normal**, or **NEF + JPEG Basic**, choose whether to send both NEF (RAW) and JPEG files or only the JPEG files.

| Option	Description
NEF+JPEG (default)	Send both NEF (RAW) and JPEG files.
JPEG only	Send JPEG files only.

Send Folder

Entire folders can be selected for transmission to the server. The selected folder and all files it contains (including those already marked as "sent") will be uploaded in ascending order by file number. Transmission begins when the folder is selected.

16
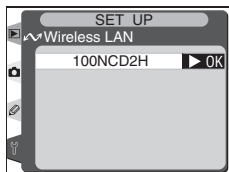
Deselect All

Remove "send," "sending," and "sent" marking from all images on the memory card.

```
SET UP
Wireless LAN
Deselect all?

     No          ▶ OK

     Yes
```

Option	Description
No (default)	"Send," "sending," and "sent" marking is not removed.
Yes	Remove "send," "sending," and "sent" marking from all images.
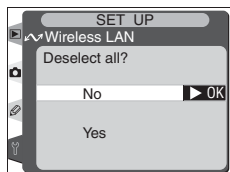
Network Settings

Adjust settings for connection to the server. Settings created using a computer can be loaded from a memory card (🖼 00), or network settings can be adjusted individually using the camera menus (🖼 00).
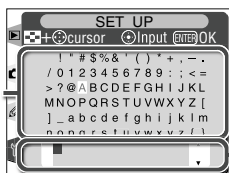
```
SET UP
Wireless LAN
Network settings

     Load settings file?  ▶
     Wireless
     TCP/IP
     FTP
```
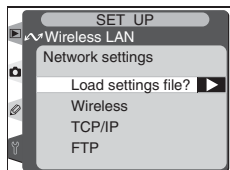
🖉 Text Entry in the "Network Settings" Menu

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.

```
SET UP
⊡ ↔ +⊙cursor  ⊙Input ⏎OK
  ! " # $ % & ' ( ) * + , − .
  / 0 1 2 3 4 5 6 7 8 9 : ; < =
  > ? @ A B C D E F G H I J K L
  M N O P Q R S T U V W X Y Z [
  ] _ a b c d e f g h i j k l m
  n o p q r s t u v w x y z { }
```

Text display area
Text appears in this area. To move cursor, press 🔘 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 🗑 button. To move the cursor to a new position, press the 🔘 button while using the multi selector. No more than thirty-six characters can be entered; if additional characters are entered when the display is full, all characters after the thirty-sixth will be deleted.

To complete entry and return to the **Network settings** menu, press the ⏎ button. To exit to the setup menu without completing text entry, press 📋.
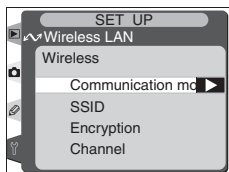
Load Settings File

Network settings created with a computer can be saved to the camera memory card. To load these settings into the camera, highlight **Load settings file?** and press the multi selector to the right. Press the multi selector up or down to highlight the desired option and press 🔘 to make a selection.
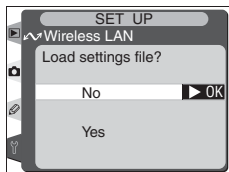
Option	Description
No	Exit without changing settings.
Yes	Load **Wireless**, **TCP/IP**, and **FTP** settings from the memory card.

Wireless

To adjust wireless network settings, highlight **Wireless** and press the multi selector to the right. After adjusting settings as described on the following pages, press the multi selector to the left to return to the network settings menu.

🖉 **Creating a Settings File**

An application for creating settings files is available from the web sites listed on page 4 of this manual. After creating a settings file, save it to the root directory of the camera 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.
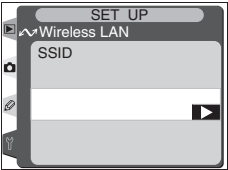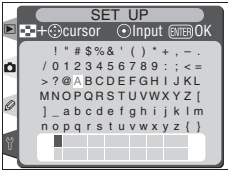
Communication Mode

To choose a mode according to how the wireless network is set up, highlight **Communication mode** in the wireless menu and press the multi selector to the right. Press the multi selector up or down to highlight the desired option and press ✪ to make a selection and return to the wireless menu.
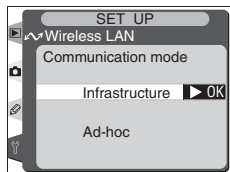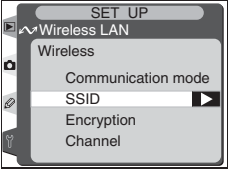
Option	Description
Infrastructure (default)	Connection to wireless network is via access point.
Ad-hoc	Direct peer-to-peer wireless connection to ftp server.

SSID*

1

Highlight current ID.

2

Display text entry dialog (00).

3

Enter BSS- or ESS-ID for wireless access point or ftp server (see documentation provided with network adapter or contact network administrator). Press ✪ to return to SSID.

* Required field. Enter "ANY" to allow network to set SSID automatically.

Encryption

1


```
        SET  UP
  ∿Wireless LAN
  Wireless
      Communication mode
      SSID
      Encryption        ▶
      Channel
```

Highlight **Encryption**.

2


```
        SET  UP
  ∿Wireless LAN
  Encryption
      Done           ▶ OK
  ☑   On
  ☐   Base 16
  ☐   128 bit

      XXXXX
```
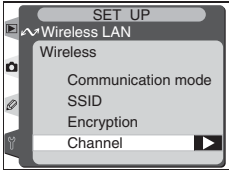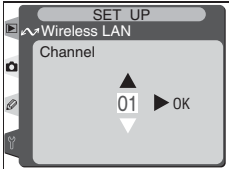
Menu of encryption options displayed. Press multi selector up or down to highlight option, press to right to select.
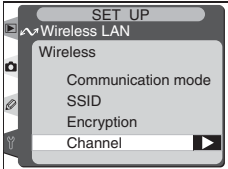
- **Done**: Save changes and exit to wireless menu.
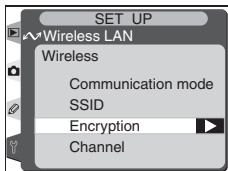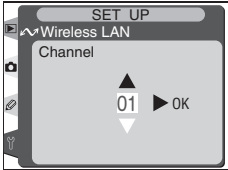- **On**: Enable or disable encryption. ✔ appears when encryption is enabled.
- **Base 16**: Enable or disable base-16 encryption. ✔ appears when base-16 encryption is enabled. Enable base-16 encryption to enter encryption key in hexadecimal notation using only numbers 0–9 and letters a–f. Disable base-16 encryption to enter encryption key in ASCII notation using standard alphanumeric characters.
- **128 bit**: Enable or disable 128-bit encryption. ✔ appears when 128-bit encryption is enabled. If 128-bit encryption is disabled, 40-bit encryption will be used.
- **Encryption key**: To change encryption key, highlight current key and press multi selector to right to display text entry dialog. After editing key, press 🔘 to return to encryption menu.

20

Channel*

<table>
<tr>
<td>1</td>
<td>SET UP
Wireless LAN
Wireless
  Communication mode
  SSID
  Encryption
  Channel ▶

Highlight **Channel**.</td>
<td>2</td>
<td>SET UP
Wireless LAN
Channel

▲
01 ▶ OK
▼

Display channel menu.</td>
</tr>
<tr>
<td>3</td>
<td>SET UP
Wireless LAN
Channel

▲
01 ▶ OK
▼

Choose channel.†</td>
<td>4</td>
<td>SET UP
Wireless LAN
Wireless
  Communication mode
  SSID
  Encryption
  Channel ▶

Return to wireless menu.</td>
</tr>
</table>

* Not required if **Infrastructure** is selected for **Communication mode**.
† The WT-1 offers a choice of thirteen channels (1-13), the WT-1A a choice of eleven channels (1-11).

TCP/IP

To adjust TCP/IP settings, highlight **TCP/IP** in the network settings menu (👁 000) and press the multi selector to the right. After adjusting settings, press the multi selector to the left to return to the network settings menu.

SET UP
Wireless LAN
TCP/IP
  IP address ▶
  Gateway
  DNS
  MAC address

IP Address[*]
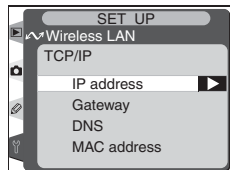
1	SET UP Wireless LAN IP address Done ☐ Obtain automatic ▶Set Address : 000.000.000.000 Mask : 000.000.000.000	Highlight **Obtain automatically**.

2

SET UP
Wireless LAN
IP address

Done
☑ Obtain automatic ▶Set
Address : XXX.XXX.XXX.XXX
Mask : YYY.YYY.YYY.YYY

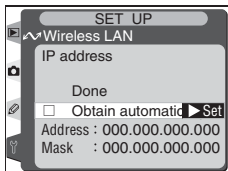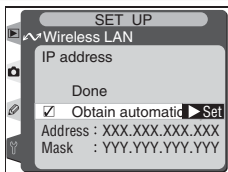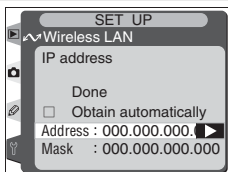Turn ✔ on or off. If wireless network is configured to supply IP address automatically, turn ✔ on and proceed to Step 7. Otherwise remove ✔ and enter IP address and subnet mask provided by network administrator (Steps 3–6).

3
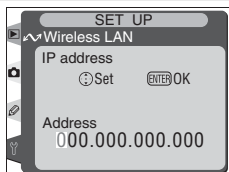
SET UP
Wireless LAN
IP address

Done
☐ Obtain automatically
Address : 000.000.000.▶
Mask : 000.000.000.000

Highlight **Address**.

4

SET UP
Wireless LAN
IP address
⏱Set ENTER OK

Address
000.000.000.000

Enter edit mode.

5

SET UP
Wireless LAN
IP address
⏱Set ENTER OK

Address
000.000.000.000

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

6

SET UP
Wireless LAN
IP address
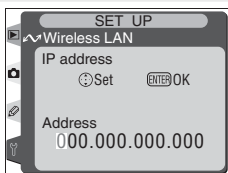
Done
☐ Obtain automatically
Address : XXX.XXX.XXX.XXX
Mask : 000.000.000.▶
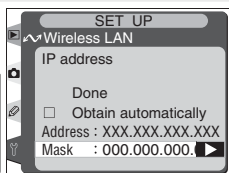
Exit to IP address menu. Repeat Steps 3–6 to edit **Mask**.

7 Highlight **Done** and press multi selector to right to return to TCP/IP menu.

* Required.

Gateway

1

SET UP
Wireless LAN
Gateway

Done
☐ Use gateway ▶Set
Address : 000.000.000.000

Highlight **Use gateway**.

2

SET UP
Wireless LAN
Gateway

Done
☑ Use gateway ▶Set
Address : 000.000.000.000
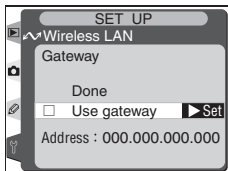
Turn ✔ on or off. If network requires gateway address, turn ✔ on and enter address provided by network administrator (Steps 3–6). Otherwise remove ✔ and proceed to Step 7.

3
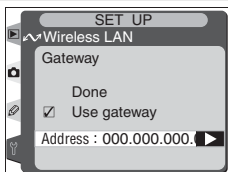
SET UP
Wireless LAN
Gateway

Done
☑ Use gateway
Address : 000.000.000.◀▶

Highlight **Address**.

4

SET UP
Wireless LAN
Gateway
⊙Set ENTER OK

Address
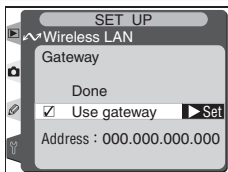000.000.000.000

Enter edit mode.

5

SET UP
Wireless LAN
Gateway
⊙Set ENTER OK

Address
000.000.000.000

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

6

SET UP
Wireless LAN
Gateway

Done
☑ Use gateway ▶Set
Address : 000.000.000.000

Return to gateway menu.

7 Highlight **Done** and press multi selector to right to return to TCP/IP menu.

23

DNS

1   Highlight **Enable DNS**.

> SET UP
> Wireless LAN
> DNS
>
>   Done
> ☐ Enable DNS   ▶Set
> Address : 000.000.000.000
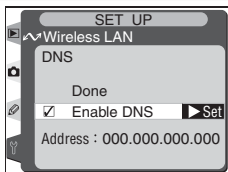
2   Turn ✔ on or off. If network requires DNS (**D**omain **N**ame **S**erver) address, turn ✔ on and enter address provided by network administrator (Steps 3–6). Otherwise remove ✔ and proceed to Step 7.
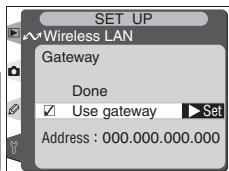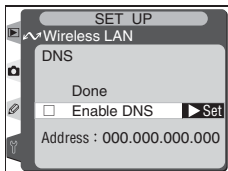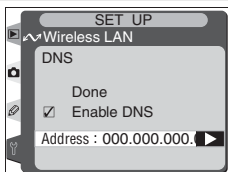
> SET UP
> Wireless LAN
> DNS
>
>   Done
> ☑ Enable DNS   ▶Set
> Address : 000.000.000.000

3

> SET UP
> Wireless LAN
> DNS
>
>   Done
> ☑ Enable DNS
> Address : 000.000.000.◀▶

Highlight **Address**.

4

> SET UP
> Wireless LAN
> DNS
>   ⊙Set   ENTER OK
>
> Address
> 0̲00.000.000.000

Enter edit mode.

5

> SET UP
> Wireless LAN
> DNS
>   ⊙Set   ENTER OK
>
> Address
> 2̲00.000.000.000

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

6

> SET UP
> Wireless LAN
> DNS
>
>   Done
> ☑ Enable DNS   ▶Set
> Address : 000.000.000.000
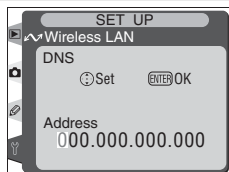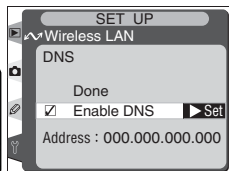
Return to DNS menu.

7   Highlight **Done** and press multi selector to right to return to TCP/IP menu.

MAC Address

This field lists the twelve-digit Media Access Control (MAC) address for the WT-1.

```
            SET UP
    Wireless LAN
    MAC address

       00-00-00-00-00-00
```

FTP
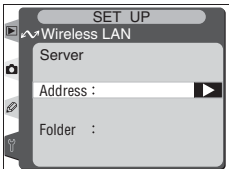
To adjust ftp (file transfer protocol) settings, highlight **FTP** in the network settings menu (🖾 00) and press the multi selector to the right. After adjusting settings as described below, press the multi selector to the left to return to the network settings menu.
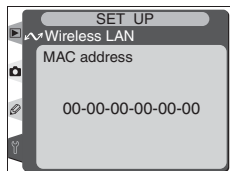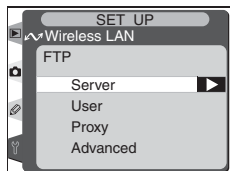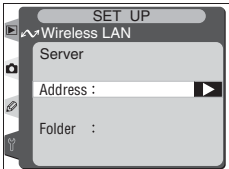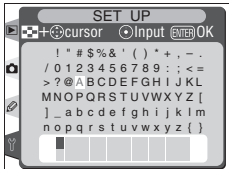
```
            SET UP
    Wireless LAN
    FTP

       Server        ▶
       User
       Proxy
       Advanced
```

*Server**

1

```
            SET UP
    Wireless LAN
    Server

    Address :        ▶

    Folder  :
```
Highlight **Address**.

2

```
            SET UP
    ⊞+⊕cursor  ⊙Input  ENTER OK
    ! " # $ % & ' ( ) * + , – .
    / 0 1 2 3 4 5 6 7 8 9 : ; < =
    > ? @ A B C D E F G H I J K L
    M N O P Q R S T U V W X Y Z [
    ] _ a b c d e f g h i j k l m
    n o p q r s t u v w x y z { }
```
Display text entry dialog (🖾 00).

3

```
            SET UP
    Wireless LAN
    Server

    Address :        ▶

    Folder  :
```
Enter address of ftp server (if unsure of correct address, contact server administrator). Press 🔘 button to return to server menu.

* Required.

25

4	SET UP Wireless LAN Server Address : XXX.XXX.XXX. . . Folder : ▶	**5**	SET UP +⊕cursor ⊕Input ENTER OK ! " # $ % & ' ( ) * + , – . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ ] _ a b c d e f g h i j k l m n o p q r s t u v w x y z { }
	Highlight **Folder**.		Display text entry dialog (📷 00).
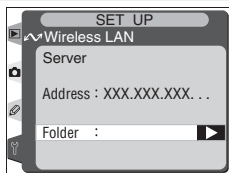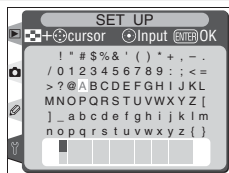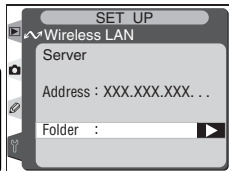
6	SET UP Wireless LAN Server Address : XXX.XXX.XXX. . . Folder : ▶	After entering name of destination folder on ftp server, press 🔘 button to return to server menu.

7 Highlight **Done** and press multi selector to left to return to ftp menu.

User[*]

1

SET UP
Wireless LAN
User
User ID ▶
Password

Highlight **User ID**.

2

SET UP
+cursor Input OK
! " # $ % & ' ( ) * + , – .
/ 0 1 2 3 4 5 6 7 8 9 : ; < =
> ? @ A B C D E F G H I J K L
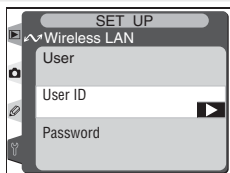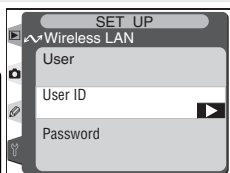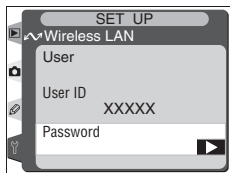M N O P Q R S T U V W X Y Z [
] _ a b c d e f g h i j k l m
n o p q r s t u v w x y z { }

Display text entry dialog (🖐 00).

3

SET UP
Wireless LAN
User
User ID ▶
Password
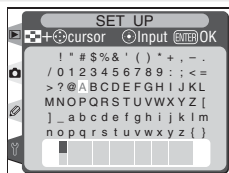
ENTER

After entering user name for login to ftp server, press 🔘 button to return to user menu.

4

SET UP
Wireless LAN
User
User ID
XXXXX
Password ▶

Highlight **Password**.

5

SET UP
+cursor Input OK
! " # $ % & ' ( ) * + , – .
/ 0 1 2 3 4 5 6 7 8 9 : ; < =
> ? @ A B C D E F G H I J K L
M N O P Q R S T U V W X Y Z [
] _ a b c d e f g h i j k l m
n o p q r s t u v w x y z { }

Display text entry dialog (🖐 00).

6

SET UP
Wireless LAN
User
User ID
XXXXX
Password ▶
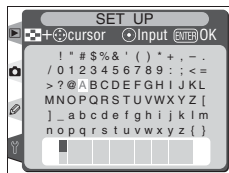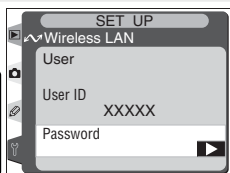
ENTER

After entering password for login to ftp server, press 🔘 button to return to user menu. Password will be disguised as row of dots when displayed in ftp menu.
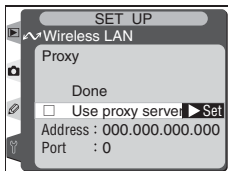
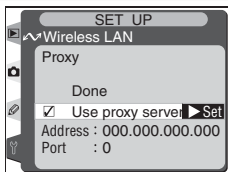**7** Highlight **Done** and press multi selector to left to return to ftp menu.
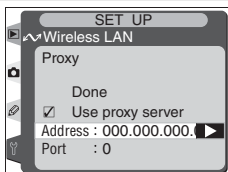
* Required.

Proxy

1 Highlight **Use proxy server**.

```
       SET  UP
   ∿Wireless LAN
   Proxy

      Done
   □  Use proxy server ▶Set
   Address : 000.000.000.000
   Port    : 0
```
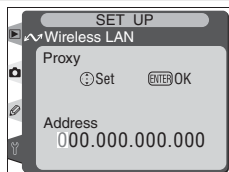
2 Turn ✔ on or off. If proxy server is required for ftp, turn ✔ on and enter address and port number (Steps 3–6). Otherwise remove ✔ and proceed to Step 7.

```
       SET  UP
   ∿Wireless LAN
   Proxy

      Done
   ☑  Use proxy server ▶Set
   Address : 000.000.000.000
   Port    : 0
```

3
```
       SET  UP
   ∿Wireless LAN
   Proxy

      Done
   ☑  Use proxy server
   Address : 000.000.000.▶
   Port    : 0
```
Highlight **Address**.

4
```
       SET  UP
   ∿Wireless LAN
   Proxy
        ⟳Set    ENTER OK

   Address
   000.000.000.000
```
Enter edit mode.

5
```
       SET  UP
   ∿Wireless LAN
   Proxy
        ⟳Set    ENTER OK

   Address
   200.000.000.000
```
Press multi selector left or right to select, up or down to change.
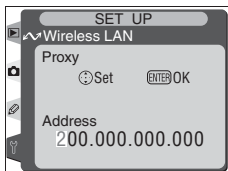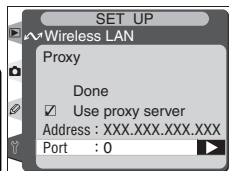
6
```
       SET  UP
   ∿Wireless LAN
   Proxy

      Done
   ☑  Use proxy server
   Address : XXX.XXX.XXX.XXX
   Port    : 0          ▶
```
Return to proxy menu. Repeat steps 3–6 to enter **Port** number.

7 Highlight **Done** and press multi selector to right to return to ftp menu.

Advanced

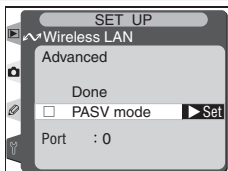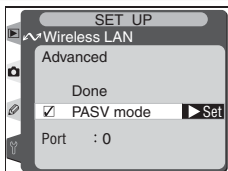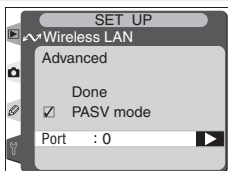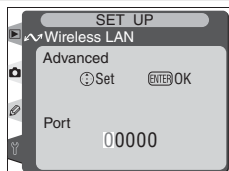|		
1	SET UP Wireless LAN Advanced Done □ PASV mode ▶Set Port : 0	Highlight **PASV mode**.
2	SET UP Wireless LAN Advanced Done ☑ PASV mode ▶Set Port : 0	Turn ✔ on or off. Turn ✔ on to instruct ftp server to use PASV mode (be sure server supports PASV mode before turning this option on). Turn ✔ off to use normal (PORT) mode.

3	SET UP Wireless LAN Advanced Done ☑ PASV mode Port : 0 ▶ Highlight **Port**.	**4**	SET UP Wireless LAN Advanced ⓈSet ⒠ⓃⓉⒺⓇ OK Port 00000 Enter edit mode.	

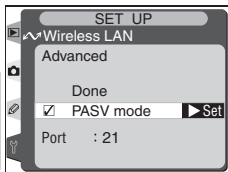|		
5	SET UP Wireless LAN Advanced ⓈSet ⒠ⓃⓉⒺⓇ OK Port 00020	Enter port number for ftp connection (if required). Press multi selector left or right to select digit, up or down to change.

6	SET UP Wireless LAN Advanced Done ☑ PASV mode ▶Set Port : 21 Return to advanced menu.	**7** Highlight **Done** and press multi selector to right to return to ftp menu.

29

Appendices

Glossary

Ad-hoc
Devices in an ad-hoc wireless network communicate directly ("peer to peer"), without a wireless access point. The WT-1 supports an ad-hoc mode for direct wireless connection to an ftp server.

BSS-ID (Basic Service Set ID)
All wireless devices on an ad-hoc wireless network share the same BSS-ID. The BSS-ID may be up to thirty-two characters long and is case sensitive. *See also* Ad-hoc.

Channel
When multiple wireless LANs with different ESS-IDs are operating on a single frequency within a given area, transmission speeds will drop. Specifying a separate channel (frequency) for each network can prevent interference and increase transmission speeds (note that all devices in the same network must be set to the same channel). In the IEEE 812.11b standard, the 2.4 GHz band is divided into 14 channels, each separated by 4 MHz.

DHCP (Dynamic Host Configuration Protocol) Server
Each device in a TCP/IP network requires an IP address. If a DHCP server is present on the network, IP addresses will be assigned automatically. A DHCP server will not be present on networks that consist solely of Windows Me, Windows 98, or Windows 95 computers. DHCP may be enabled on other networks; consult the network administrator or see the manual provided with the router or operating system.

ESS-ID (Extended Service Set ID)
Multiple BSSs can be configured to form an ESS, allowing users to roam between wireless access points. Only devices with the same ESS-ID as a given access point can communicate with that access point. The ESS-ID may be up to thirty-two characters long and is case sensitive.

Infrastructure
Devices in an infrastructure network communicate via one or more wireless access points. The WT-1 supports an infrastructure mode for connection to a wireless network via an access point.

LAN (Local Area Network)
A network of computers located in relatively close proximity to one another. LANs generally support data transfer speeds of 10–100 Mbps.

MAC (Media Access Control) Address
A unique hardware address for each device on a network, required when sending and receiving packets.

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Protocol

A set of rules for passing information back and forth between devices in a network. By defining such elements of communication as how links are established, how receipt of a signal is acknowledged, how data are encoded, and how to handle errors, a protocol ensures that data are transmitted without loss of information.

SS-ID

An SS-ID prevents interference between devices in different networks. *See also* BSS-ID, ESS-ID.

TCP/IP (Transmission Control Protocol/Internet Protocol)

A dual protocol consisting of a transport-layer protocol (TCP) that divides data into packets which it later reassembles, and a network protocol (IP) that handles transmission of the packets between points in the network. It can be implemented on different platforms, allowing data to be transmitted between machines with different operating systems.

USB (Universal Serial Bus)

A standard for connecting peripheral devices. USB supports data transfer rates of up to 480 Mbps (USB 2.0). Devices connected via USB can be connected and disconnected with the power on ("hot plug") and do not require separate IRQ (interrupt request) numbers, preventing conflicts with other devices.

WEP (Wired Equivalent Privacy)

A privacy protocol intended to provided users of wireless networks with the same level of privacy as a wired network. When using WEP, enter the encryption key provided by the network administrator.

Specifications

Standards	RCR STD-33, ARIB STD-T66 (standard for low power data communications systems)			
Type	IEEE 802.11b (standard wireless LAN protocol); DSSS (IEEE 802.11-compliant); half duplex			
Range (line of sight)		**Outdoor**	**Indoor***	**Indoor†**
	11 Mbps	160 m (525′)	50 m (164′)	25 m (82′)
	2 Mbps	400 m (1312′)	90 m (295′)	40 m (131′)
	1 Mbps	550 m (1804′)	115 m (377′)	50 m (164′)
	*Few obstacles †Many obstacles The presence of reinforced concrete, metal structures, or metal furniture may result in decreased range.			
Operating frequency	11 channels			
Data rates	1, 2, 5.5, and 11 Mbps			
Security	128/40-bit WEP			
Operating voltage	5 V			
Power output	1425 mW maximum			
Power consumption	Sleep: 9 mA maximum; receive: 185 mA maximum; send: 285 mA maximum			
Operating environment	Temperature: 0–40 °C (32–131 °F) Humidity: 20–80% (no condensation)			
Weight	220 g (7.8 oz)			
Dimensions (W × H × D)	146.5 mm × 34.5 mm × 65.5 mm (5.8″ × 1.4″ × 2.6″)			

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