

Wireless Network Connection

Setup Guide

Rev. 1.00

Software Version 3.0

PXW-Z280/Z190

Table of Contents

Chapter 1 Overview

Chapter 2 Use Cases

2.1. Live Workflow in XDCAM air Example Use Cases	6
2.1.1. Live Streaming	7
2.1.2. Intercom Operation.....	7
2.1.3. Camera Remote Control	8
2.2. File Workflow in XDCAM air Example Use Cases	9
2.2.1. File Naming using Planning Metadata	9
2.2.2. Proxy Auto Upload.....	10
2.2.3. Upload to FTP Server	10

Chapter 3 Preparation

3.1. Network Environment	12
3.1.1. 4G/LTE USB Modem	12
3.1.2. Wireless LAN.....	13
3.1.3. Wired LAN.....	13
3.2. Network Client Mode (NCM)	14
3.3. FTP Server	14
3.4. USB Headset Connection for Intercom	15

Chapter 4 Setup To-Do List

4.1. To-Do List for "Live Streaming"	16
4.2. To-Do List for "Intercom Operation"	16
4.3. To-Do List for "Camera Remote Control"	17
4.4. To-Do List for "File Naming using Planning Metadata"	17
4.5. To-Do List for "Proxy Auto Upload"	17
4.6. To-Do List for "Upload to FTP Server"	18

Chapter 5 Common Setup

5.1. Equipment for Wireless Solution	19
5.2. Assembling	19
5.3. Network Settings	20
5.3.1. 4G/LTE USB Modem.....	20
5.3.2. Wireless LAN	21

5.3.3. Wired LAN	25
5.3.4. Networks Combinations	26
5.4. Network Client Mode Settings	28
5.5. Network Communication Test.....	29
5.5.1. 4G/LTE USB Modem	29
5.5.2. Wireless LAN	29
5.5.3. Wired LAN	30
5.6. Network Client Mode Communication Test.....	31
5.6.1. XDCAM air.....	31
5.6.2. Network RX Station	32

Chapter 6 Setup for “Live Streaming”

6.1. Camcorder Settings.....	33
6.2. Streaming Test.....	33

Chapter 7 Setup for “Intercom Operation”

7.1. Camcorder Settings.....	34
7.2. Intercom Test	34

Chapter 8 Setup for “Camera Remote Control”

8.1. Camcorder Settings.....	35
8.2. Camera Remote Test.....	35

Chapter 9 Setup for “File Naming using Planning Metadata”

9.1. Camcorder Settings.....	36
9.2. Planning Metadata Handling Test.....	36

Chapter 10 Setup for “Proxy Auto Upload”

10.1. Camcorder Settings	37
10.2. FTP Server Settings	37
10.3. FTP Server Communication Test.....	38
10.3.1. Checking Operation using the Menu	38
10.3.2. Checking Operation using a Web Browser.....	38

Chapter 11 Setup for “Upload to FTP Server”

11.1. Camcorder Settings	40
11.2. FTP Server Settings.....	40
11.3. FTP Server Communication Test	40

Chapter 12 Troubleshooting

12.1. Network.....	41
12.1.1. 4G/LTE USB Modem.....	41
12.1.2. Wireless LAN	42
12.1.3. Wired LAN	42
12.2. Network Client Mode	43
12.3. Use Cases	44
12.3.1. Live Streaming	44
12.3.2. Camera Remote Control.....	44
12.3.3. Intercom Operation.....	44
12.3.4. File Naming using Planning Metadata	44
12.3.5. Proxy Auto Upload	45
12.3.6. Upload to FTP Server.....	47

Revision History

This Setup Guide describes the preparation for the use cases listed on the following pages, and the daily checks required when using the Sony PXW-Z280/Z190 camcorder. Common items for use cases are listed in chapters 3 and 5, and individual items for each use case are listed separately in chapters 4 and 6 to 11.

Terminology

“Network RX Station” refers to “PWS-100RX1/PWS-110RX1/PWS-110RX1A” devices.

“CCM” refers to the “Connection Control Manager” of “XDCAM air” or “Network RX Station”.

Trademarks

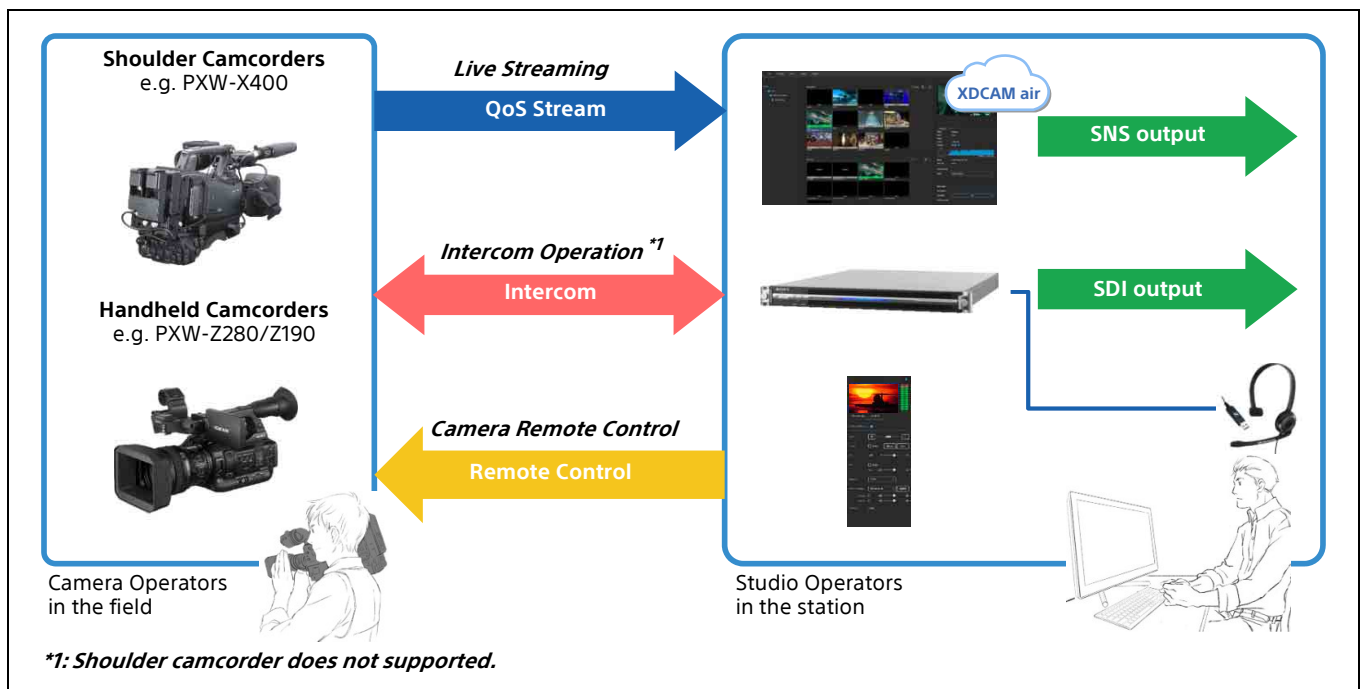
Wi-Fi® is a registered trademark of the Wi-Fi Alliance®.

XDCAM air is a trademark of Sony Corporation.

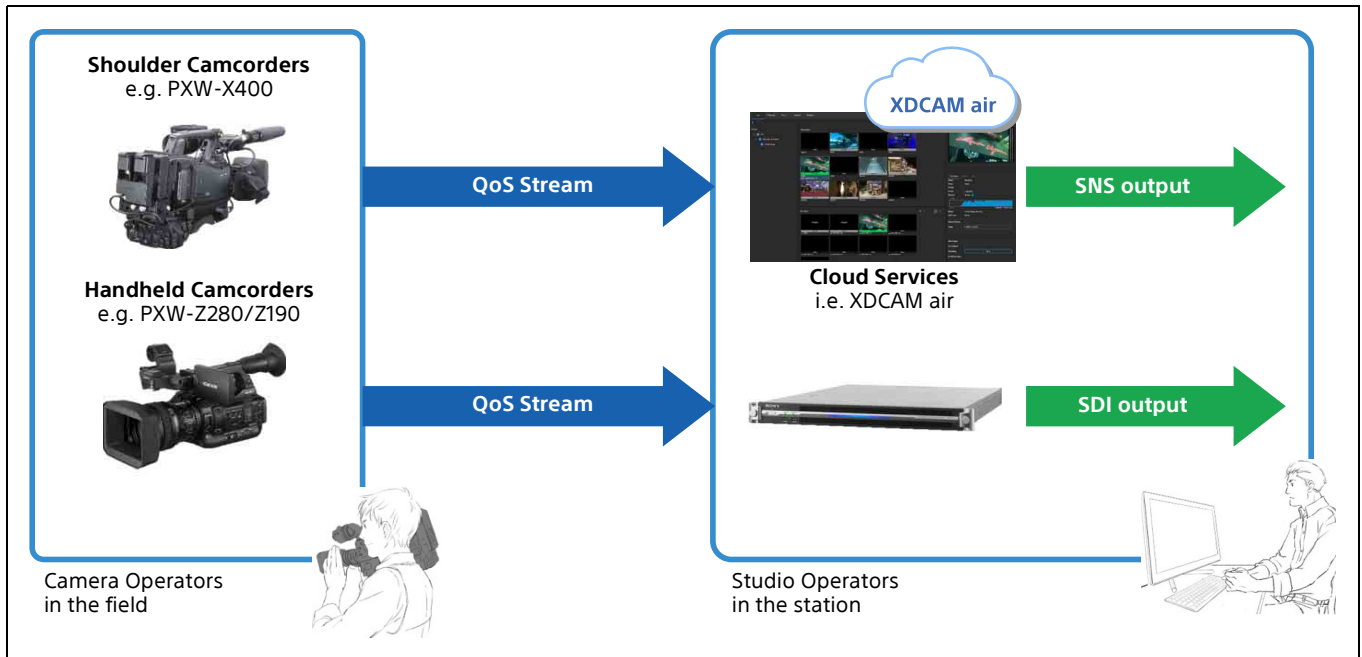
This section shows the typical use cases. Each use case may vary by the number of users. Choose the use case that is most similar to your operation for reference.

2.1. Live Workflow in XDCAM air Example Use Cases

The following diagram shows three typical use cases.



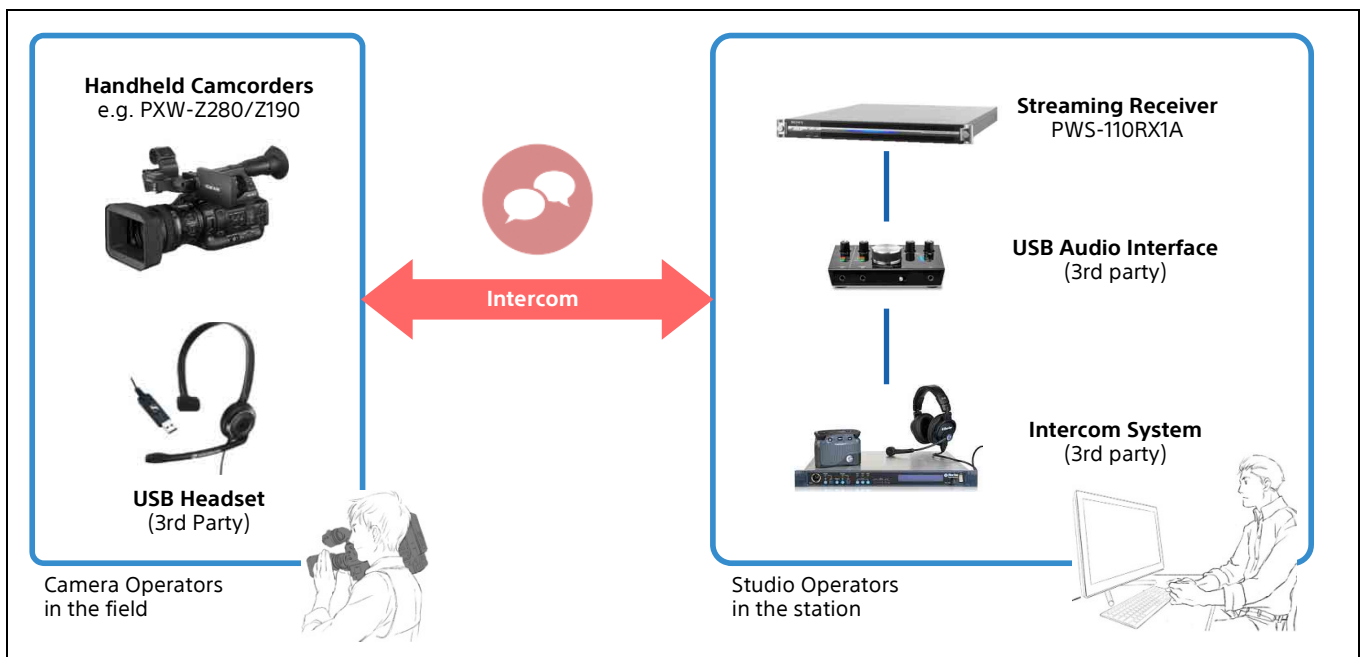
2.1.1. Live Streaming



Live streaming with QoS control is supported with XDCAM air or Network RX Station.

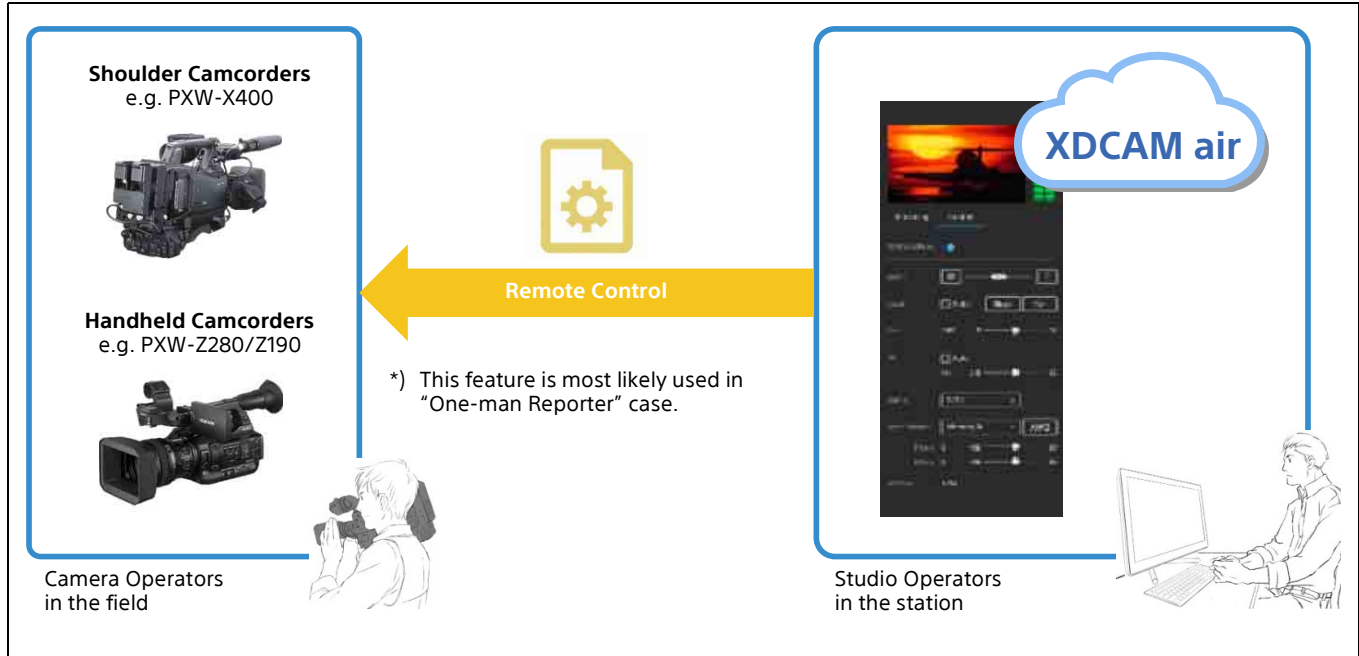
Setup checkpoints	
TX side	Camcorder Settings
	Related Equipment (Wireless LAN/LTE/Wired LAN)
	Single or Dual Link
RX side	CCM (XDCAM air / Network RX Station)
	Network RX Station QoS Streaming receiving server
	Single or Multi point Distribution

2.1.2. Intercom Operation



Setup checkpoints	
TX side	Camcorder Settings: Intercom Settings
	Related Equipment (Wireless LAN/LTE/Wired LAN)
RX side	CCM (XDCAM air / Network RX Station)

2.1.3. Camera Remote Control



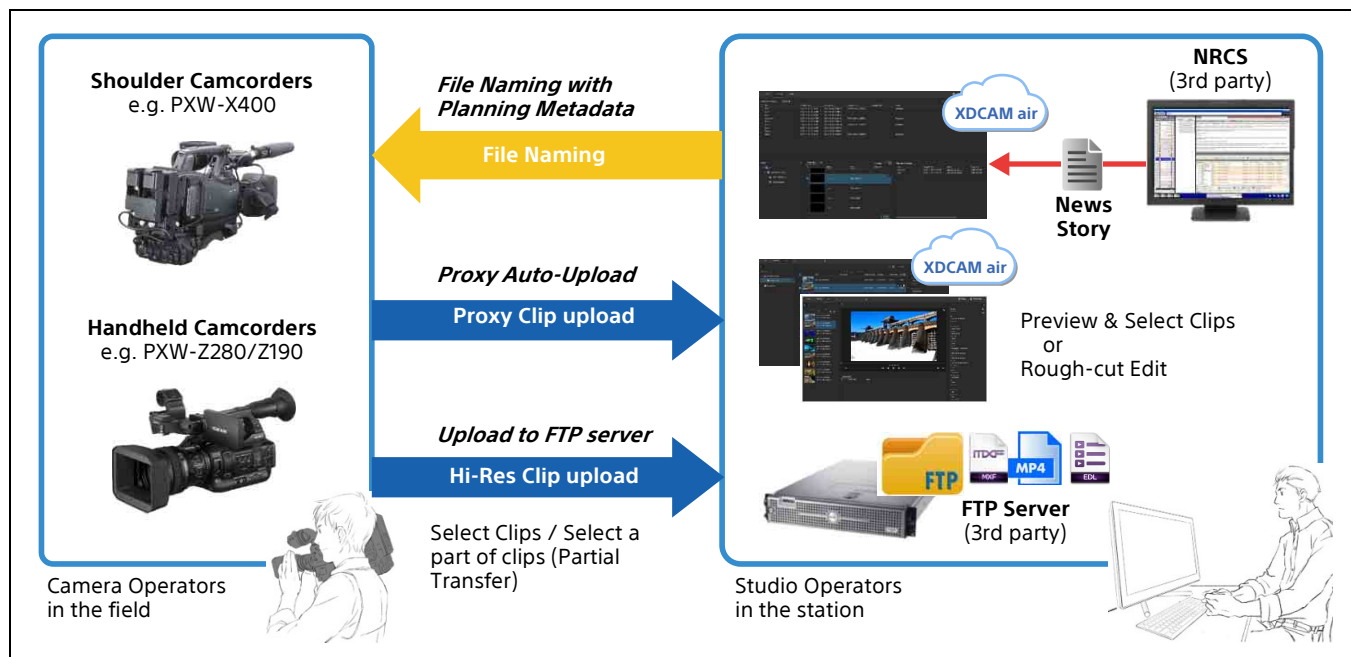
Supported camera remote control functions

- Zoom/Iris/etc. control
- "ALL File" management

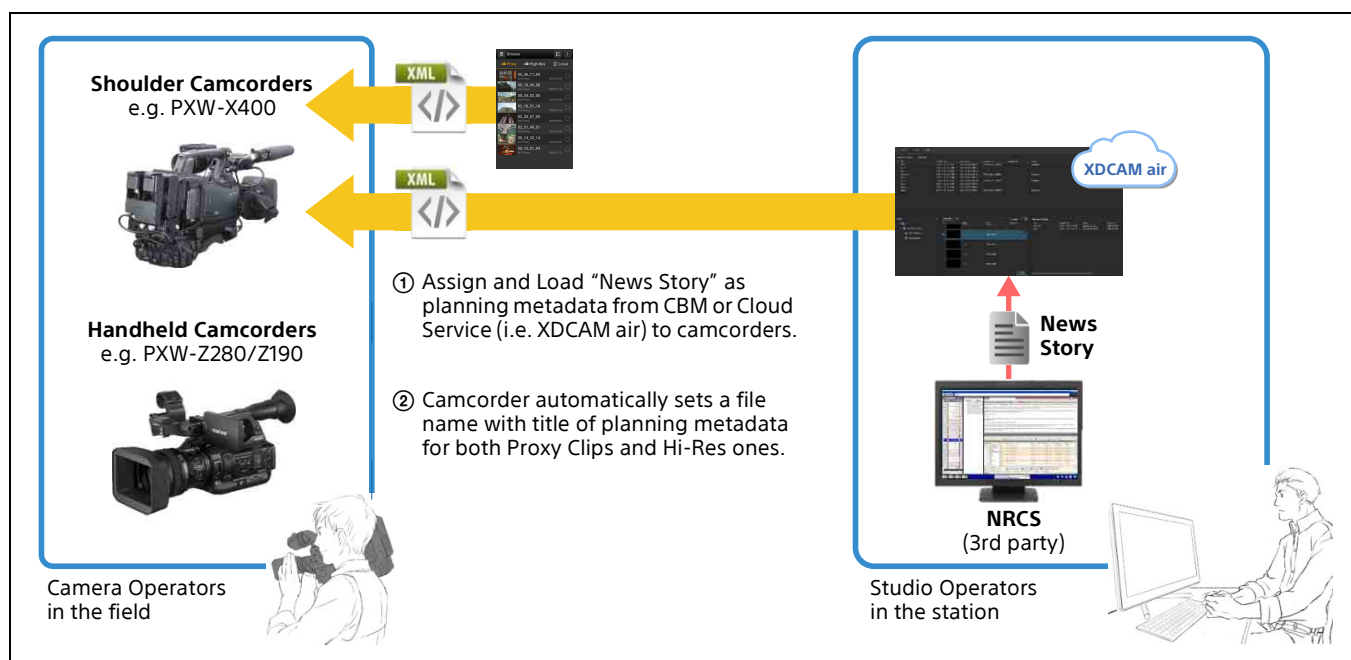
Setup checkpoints	
TX side	Camcorder Settings: Lens Settings
	Related Equipment (Wireless LAN/LTE/Wired LAN)
RX side	CCM (XDCAM air / Network RX Station)
	CCM "ALL File" Management

2.2. File Workflow in XDCAM air Example Use Cases

The following diagram shows three typical use cases.

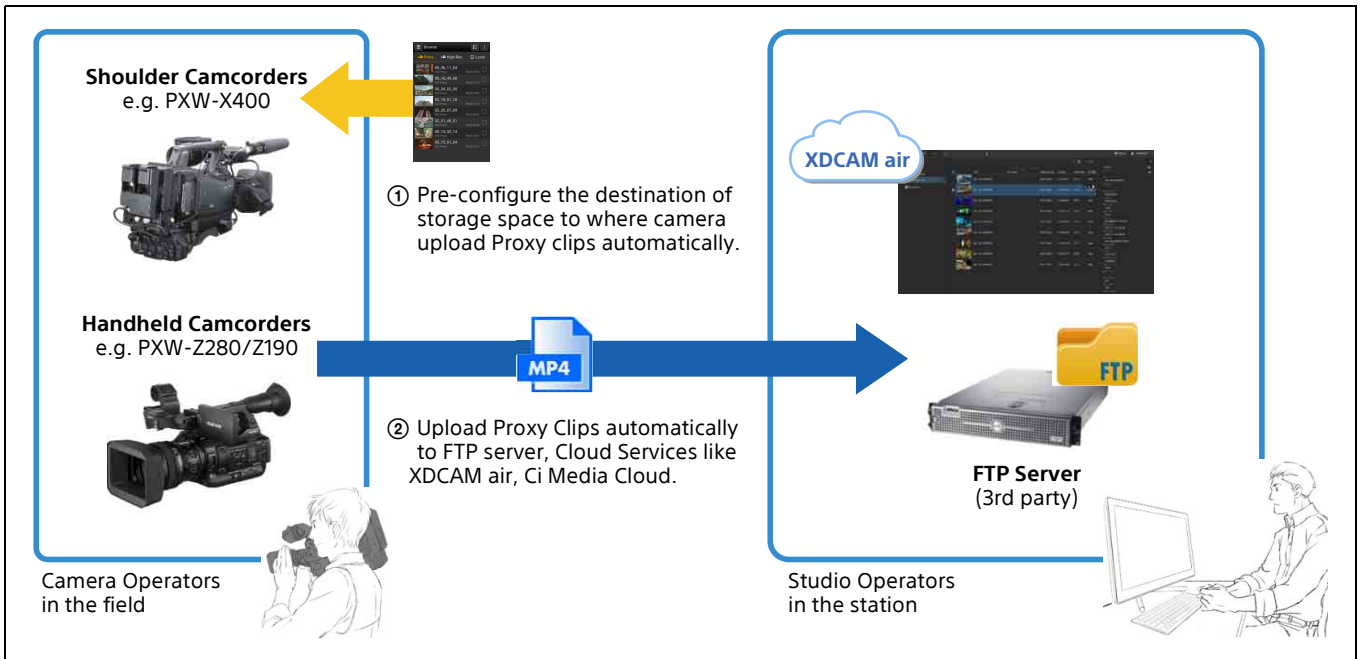


2.2.1. File Naming using Planning Metadata



Setup checkpoints	
TX side	Camcorder Settings: Clip Naming Setting
	Related Equipment (Wireless LAN/LTE/Wired LAN)
RX side	CCM: Planning Metadata Handling

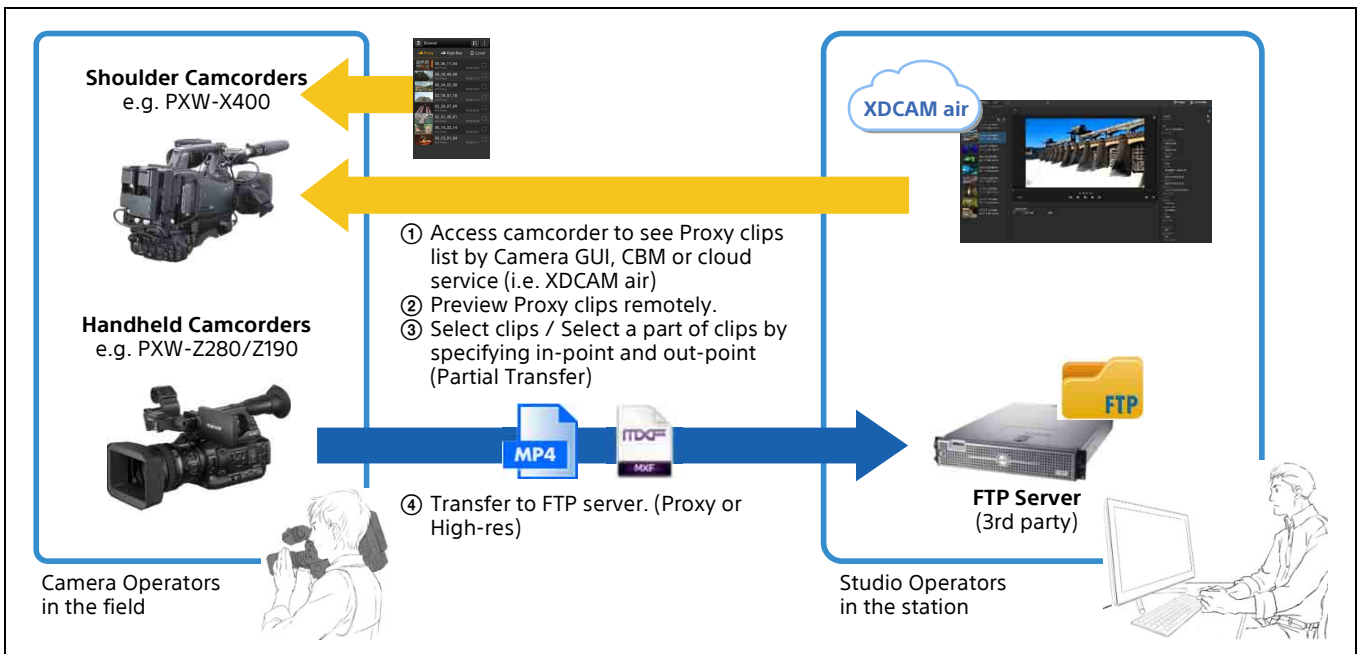
2.2.2. Proxy Auto Upload



Setup checkpoints

TX side	Camcorder Settings: Auto Upload (Proxy)
	Related Equipment (Wireless LAN/LTE/Wired LAN)
RX side	FTP Server Settings

2.2.3. Upload to FTP Server



Setup checkpoints	
TX side	Camcorder Settings: Remote File Transfer
	Related Equipment (Wireless LAN/LTE/Wired LAN)
RX side	CCM File List UI
	Proxy Playback and Proxy File Pull
	CCM Cut Edit using Proxy
	Request to camcorder for Partial File Transfer

Prepare the following items before setting up your camcorder in each use case.
Appropriate network settings and Network Client Mode settings are needed for each use case.

3.1. Network Environment

The supported network environments for internet connection are as follows.

- 4G/LTE USB Modem
- Wireless LAN
- Wired LAN

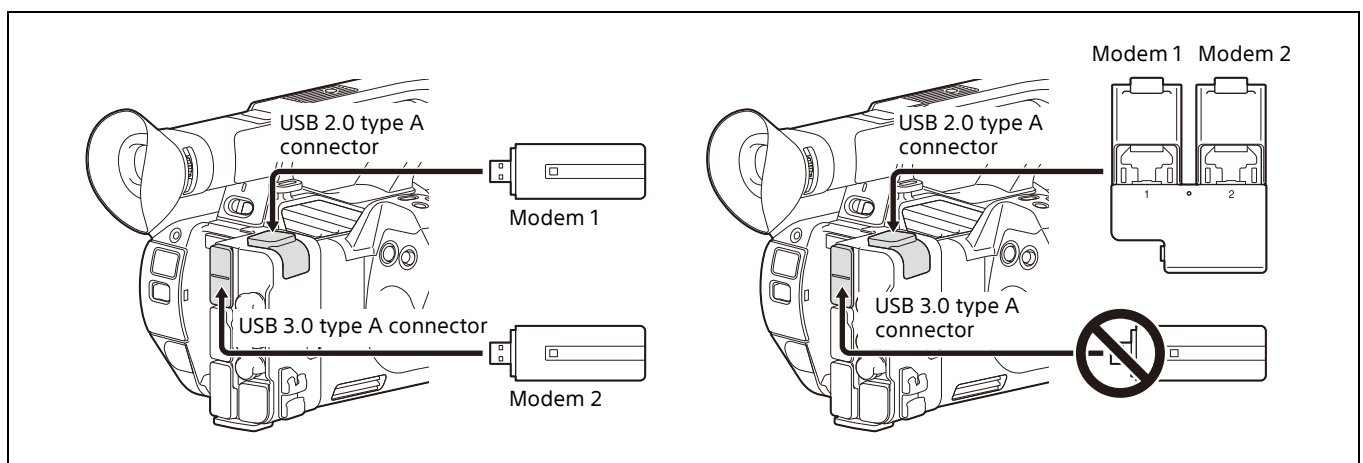
3.1.1. 4G/LTE USB Modem

The supported USB modem models vary depending on the country or region.
For details, contact a Sony professional sales representative.

“Single Link” and “Dual Link” are both supported for the Live Streaming Operation use case.
“Single Link” uses one network, while “Dual Link” uses multiple networks for streaming.
“Dual Link” works with two 4G/LTE USB modems, or one 4G/LTE USB modem and one wireless LAN station network. In this case, use of different carriers is recommended for stable network performance.

Before attaching a 4G/LTE USB modem to the camcorder, check the operation on your computer.
In particular, if you install a new SIM or replace the SIM, check the modem’s settings on the computer.
If you replace the SIM with a SIM from another carrier, you need to reset the APN (Access Point Name).

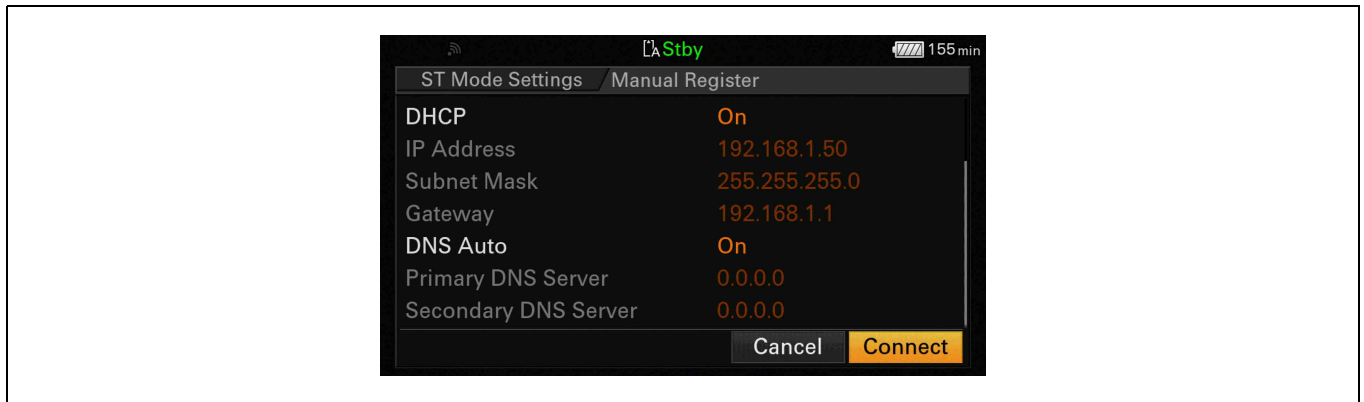
To connect 4G/LTE USB modems directly to the unit, the USB 2.0 (HOST) connector (A) on the top of the unit becomes Modem1, and the USB 3.0 (HOST) connector (A) on the rear of the unit becomes Modem2. The USB 2.0 (HOST) connector (A) on the top of the unit can be connected to a dedicated USB hub (CBK-DL1). In this case, the USB 3.0 (HOST) connector (A) on the rear of the unit cannot be used for modem connections. When using a USB hub, port 1 of the USB hub becomes Modem1, and port 2 becomes Modem2.



3.1.2. Wireless LAN

Check the wireless LAN router's settings before configuring the camcorder's network settings. The following information is required.

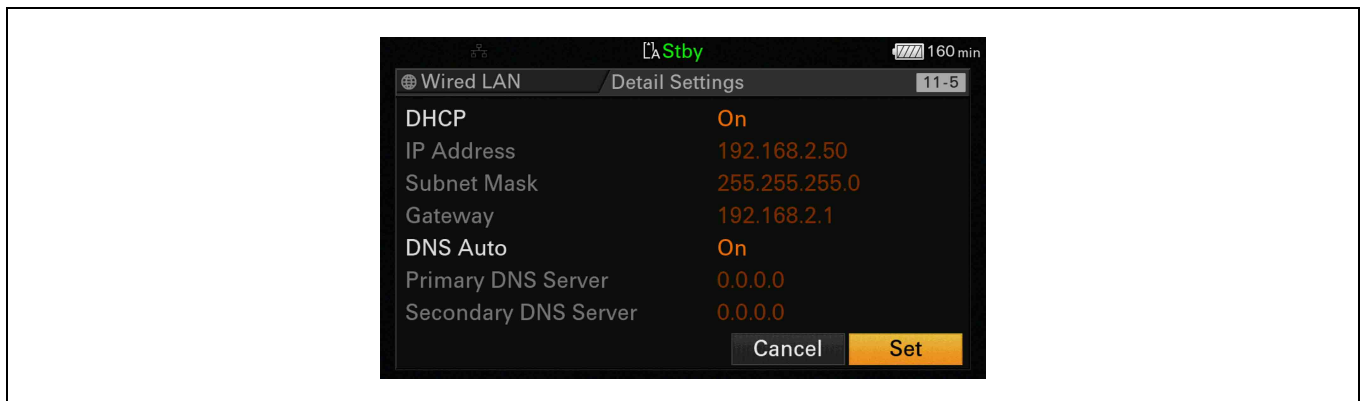
- SSID and password
- Whether the IP address is set by DHCP or manually
- Whether DNS is set automatically or manually



3.1.3. Wired LAN

Check Wired LAN settings before configuring the camcorder's network settings. The following information is required.

- Whether the IP address is set by DHCP or manually
- Whether DNS is set automatically or manually



3.2. Network Client Mode (NCM)

Check the XDCAM air or Network RX Station settings information before configuring the camcorder's network client mode settings.

The following information is required.

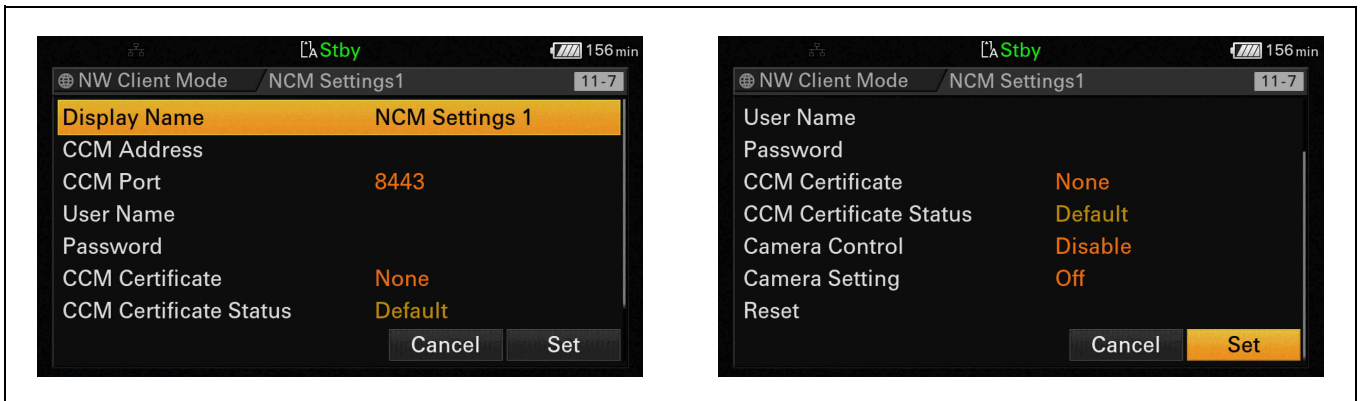
- URL or IP address for Connection Control Manager (CCM)
- Port number
- User name
- Password

The following operations can also be configured.

- Streaming
- Controlling the camera from the CCM UI
- Applying camera settings once only or continuously using an "ALL File".

Network Client Mode can be registered in NCM Settings 1 to 3, and the name to be displayed for each preset can be set.

You can also change the name from the preset number (for example, "MyCCM").



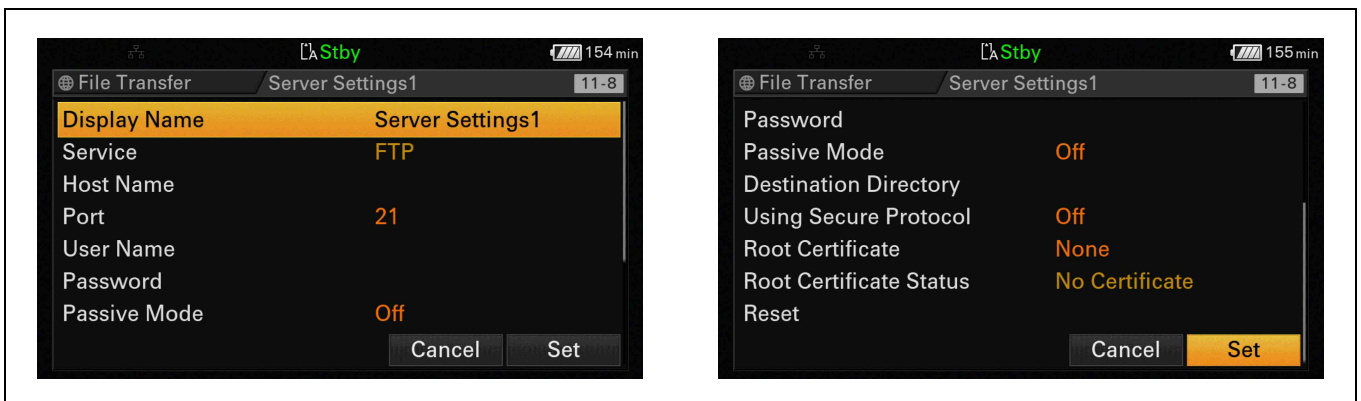
3.3. FTP Server

An FTP server must be prepared for file transfers.

For secure transfer, the use of FTPS is recommended.

The following information is required.

- CA certificate
- Server URL or IP address
- User name
- Password



3.4. USB Headset Connection for Intercom

Connect a USB headset to the USB 3.0 (HOST) connector (A) on the rear of the unit.
A USB headset cannot be connected using a USB hub.

This section describes the “To-Do List” for each use case.
The Network settings and Network Client Mode settings are common to each use case.

4.1. To-Do List for “Live Streaming”

Table 1. To-Do List for “Live Streaming”

No.	See
1	<i>5.2. Assembling</i>
2	<i>5.3. Network Settings</i>
3	<i>5.4. Network Client Mode Settings</i>
4	<i>5.5. Network Communication Test</i>
5	<i>5.6. Network Client Mode Communication Test</i>
6	<i>6.1. Camcorder Settings</i>
7	<i>6.2. Streaming Test</i>

4.2. To-Do List for “Intercom Operation”

Table 2. To-Do List for “Intercom Operation”

No.	See
1	<i>5.2. Assembling</i>
2	<i>5.3. Network Settings</i>
3	<i>5.4. Network Client Mode Settings</i>
4	<i>5.5. Network Communication Test</i>
5	<i>5.6. Network Client Mode Communication Test</i>
6	<i>6.1. Camcorder Settings</i>
8	<i>7.2. Intercom Test</i>

4.3. To-Do List for "Camera Remote Control"

Table 3. To-Do List for "Camera Remote Control"

No.	See
1	5.2. Assembling
2	5.3. Network Settings
3	5.4. Network Client Mode Settings
4	5.5. Network Communication Test
5	5.6. Network Client Mode Communication Test
6	8.1. Camcorder Settings
7	8.2. Camera Remote Test

4.4. To-Do List for "File Naming using Planning Metadata"

Table 4. To-Do List for "File Naming using Planning Metadata"

No.	See
1	5.2. Assembling
2	5.3. Network Settings
3	5.4. Network Client Mode Settings
4	5.5. Network Communication Test
5	5.6. Network Client Mode Communication Test
6	9.1. Camcorder Settings
9	9.2. Planning Metadata Handling Test

4.5. To-Do List for "Proxy Auto Upload"

Table 5. To-Do List for "Proxy Auto Upload"

No.	See
1	5.2. Assembling
2	5.3. Network Settings
3	5.4. Network Client Mode Settings
4	5.5. Network Communication Test
5	5.6. Network Client Mode Communication Test
6	10.1. Camcorder Settings
7	10.2. FTP Server Settings
8	10.3. FTP Server Communication Test

4.6. To-Do List for “Upload to FTP Server”

Table 6. To-Do List for “Upload to FTP Server”

No.	See
1	<i>5.2. Assembling</i>
2	<i>5.3. Network Settings</i>
3	<i>5.4. Network Client Mode Settings</i>
4	<i>5.5. Network Communication Test</i>
5	<i>5.6. Network Client Mode Communication Test</i>
6	<i>11.1. Camcorder Settings</i>
7	<i>11.2. FTP Server Settings</i>
8	<i>11.3. FTP Server Communication Test</i>

5.1. Equipment for Wireless Solution

Table 7. Equipment List

USB modem		
CBK-DL1		

5.2. Assembling

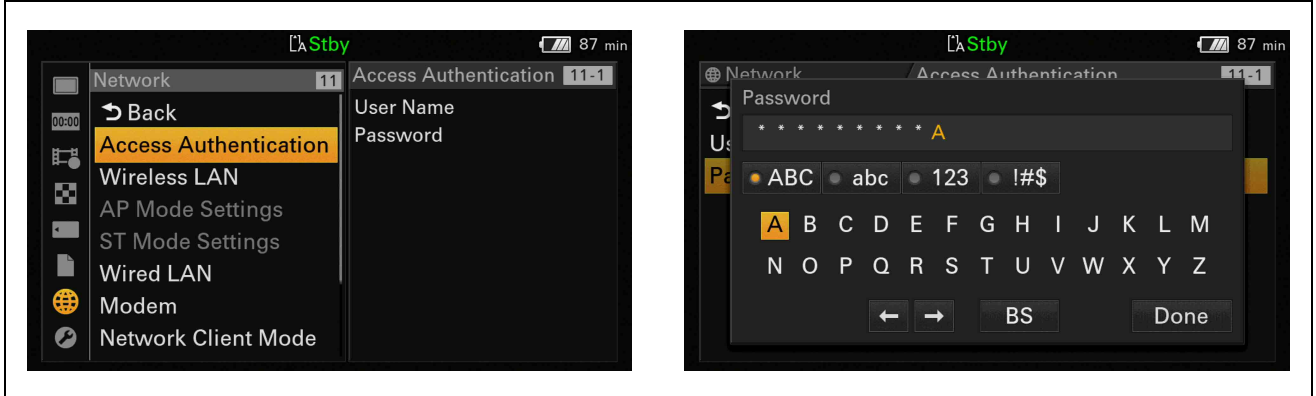
See the Operating Instructions for the PXW-Z280/PXW-Z190.

5.3. Network Settings

- 1 Select Network > Access Authentication in the setup menu, and set User Name and Password.

For security, set the user name and password by yourself.

It is recommended that you set a password with a sufficiently long character string that is hard to guess by others, and that you store it safely.



If you experience any difficulty, see “12.1. Network” in the Troubleshooting section.

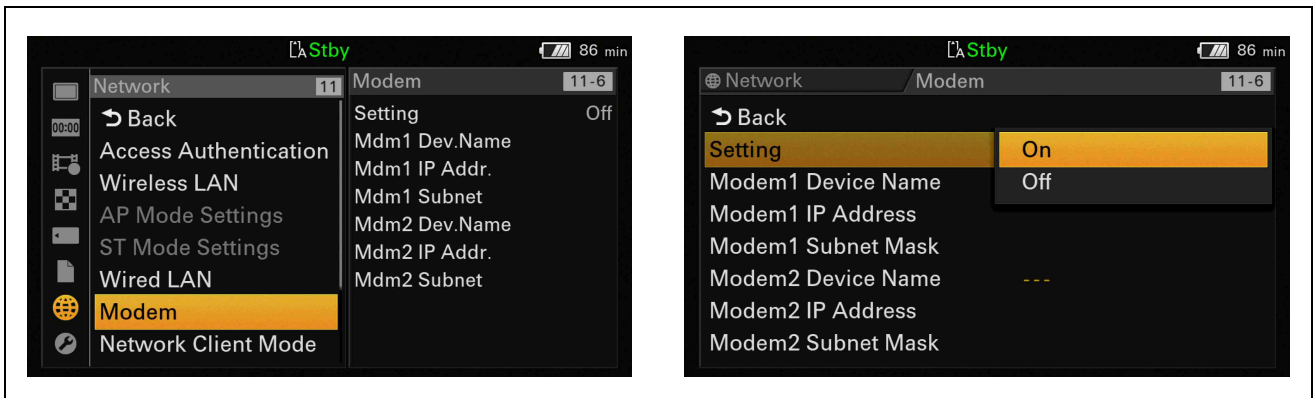
The conditions for which multiple network connections can be used will vary depending on the combination of video output settings (SDI/HDMI/VIDEO). For details, see “Network and video output combinations” in the Operating Instructions.

5.3.1. 4G/LTE USB Modem

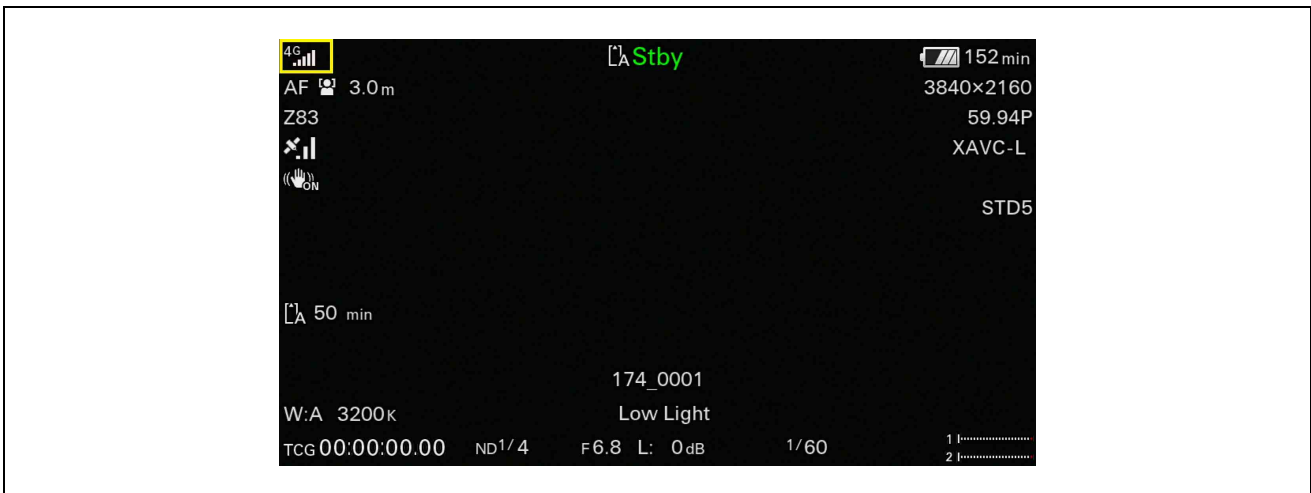
- 1 Select Network > Modem in the setup menu, and set Setting to On.

Note

The conditions under which a modem can be used are determined by the combination with other networks and video outputs (SDI/HDMI/VIDEO). For details, refer to the Operating Instructions.



The 3G/4G icon appears on the LCD panel.



If you experience any difficulty, see “12.1.1. 4G/LTE USB Modem” in the Troubleshooting section.

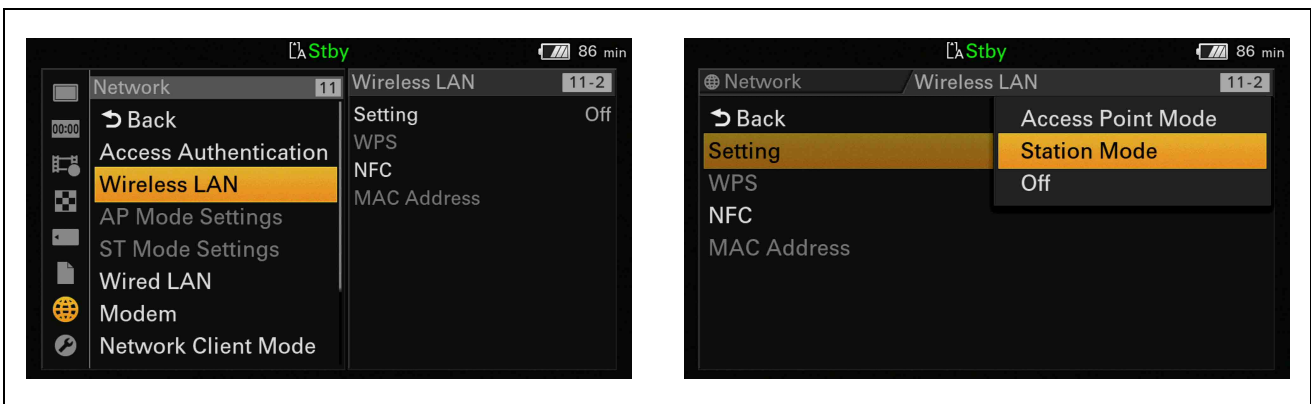
5.3.2. Wireless LAN

5.3.2.1. Wireless LAN Station mode settings

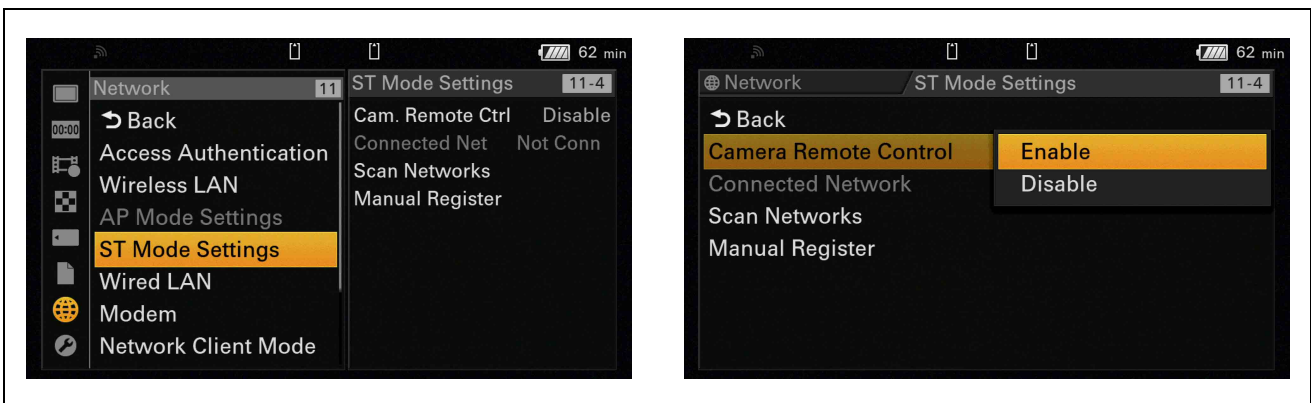
- 1 Select Network > Wireless LAN in the setup menu, and set Setting to Station Mode.

Note

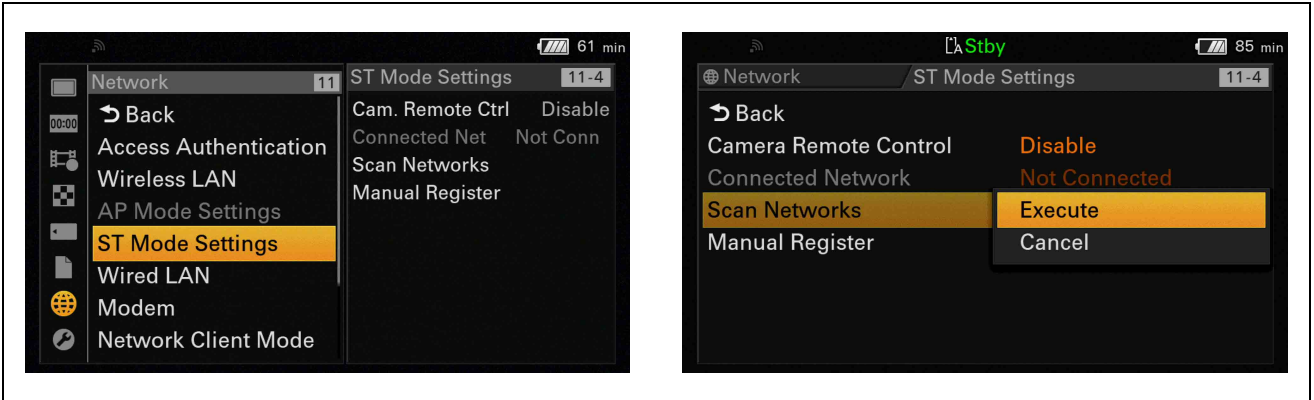
The conditions under which a wireless LAN can be used are determined by the combination with other networks and video outputs (SDI/HDMI/VIDEO). For details, refer to the Operating Instructions.



- 2 Select Network > ST Mode Settings in the setup menu, and set Camera Remote Control to Enable.



- 3** Select Network > ST Mode Settings > Scan Networks in the setup menu, then scan for available networks.



The device scans for networks and displays a list of detected SSIDs.

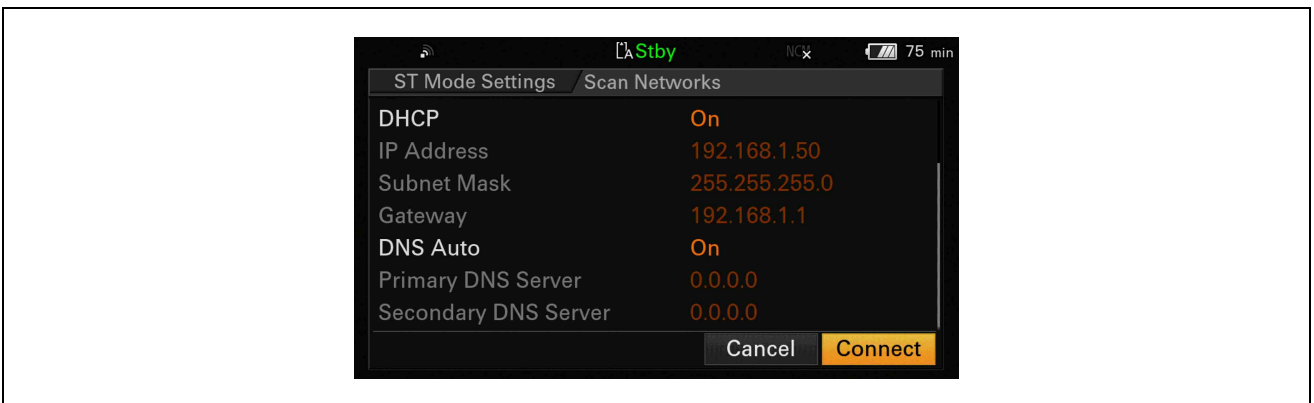
- 4** Select an SSID.

A password setting dialog appears.

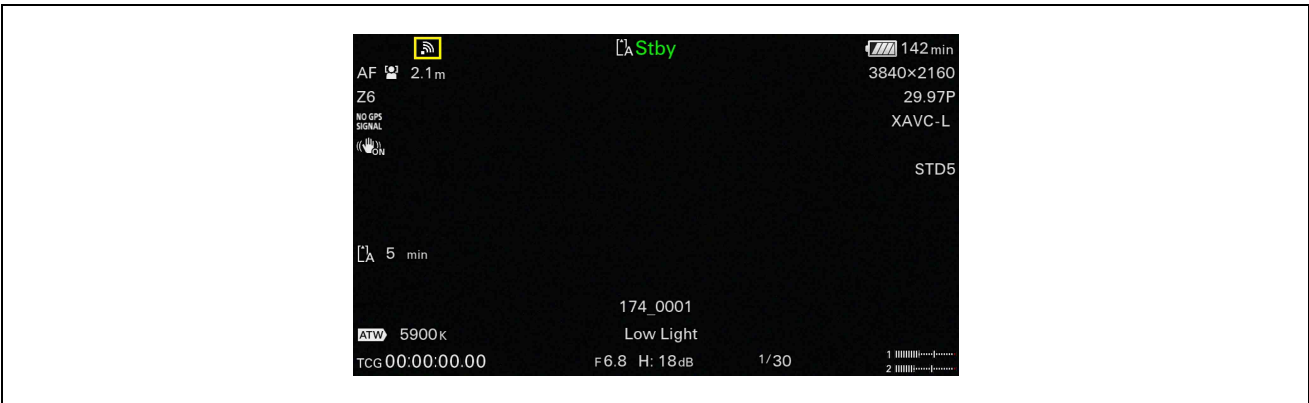


- 5** Enter the password for the SSID, select the Done button, and press the SEL/SET dial or SET button.

- 6** Check the DHCP and DNS settings, select the Connect button, and press the SEL/SET dial or SET button.



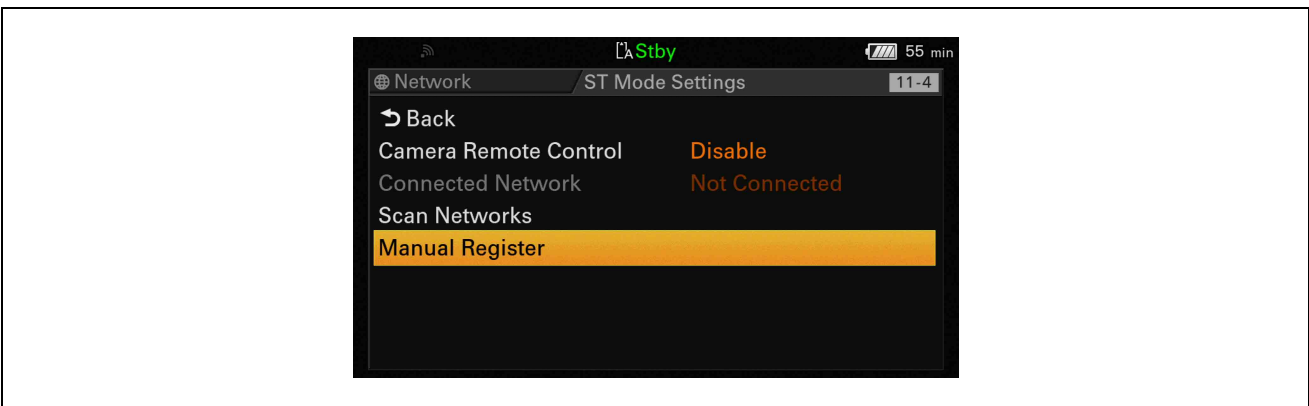
The camcorder starts connecting to the wireless LAN access point. When the connection is successful, the Wi-Fi mode status indicator appears.



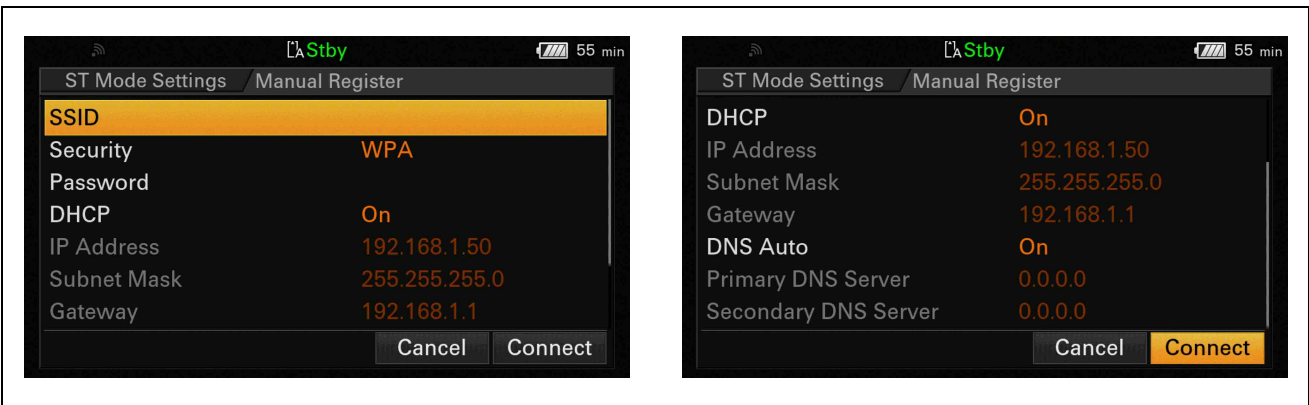
If you experience any difficulty, see "12.1.2. Wireless LAN" in the Troubleshooting section.

To set the SSID and other settings manually

- 1 Select Network > ST Mode Settings > Manual Register in the setup menu, and enter the SSID, password and other settings.



- 2 Select the Connect button on the menu screen, and press the SEL/SET dial or SET button.



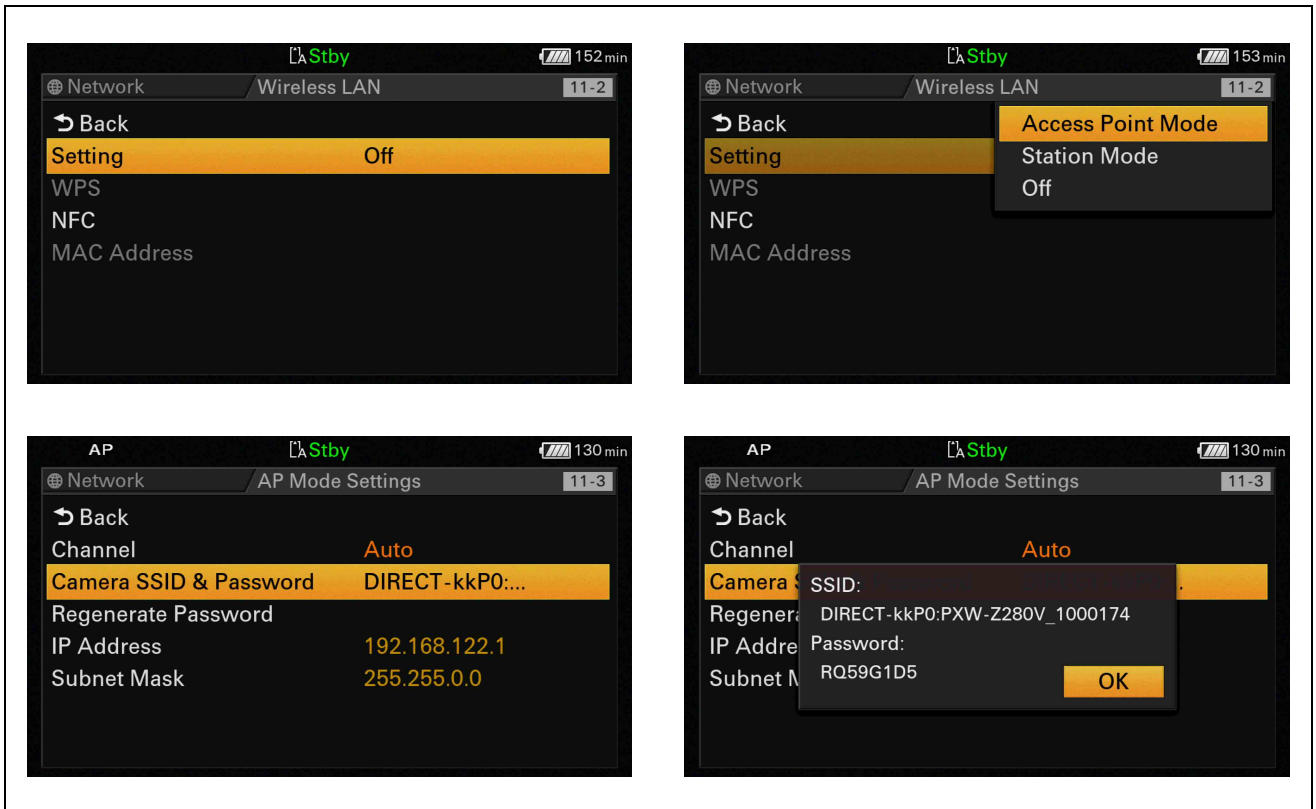
When the connection is successful, the wireless LAN status indicator appears.

If you experience any difficulty, see "12.1.2. Wireless LAN" in the Troubleshooting section.

5.3.2.2. Wireless LAN Access Point mode settings

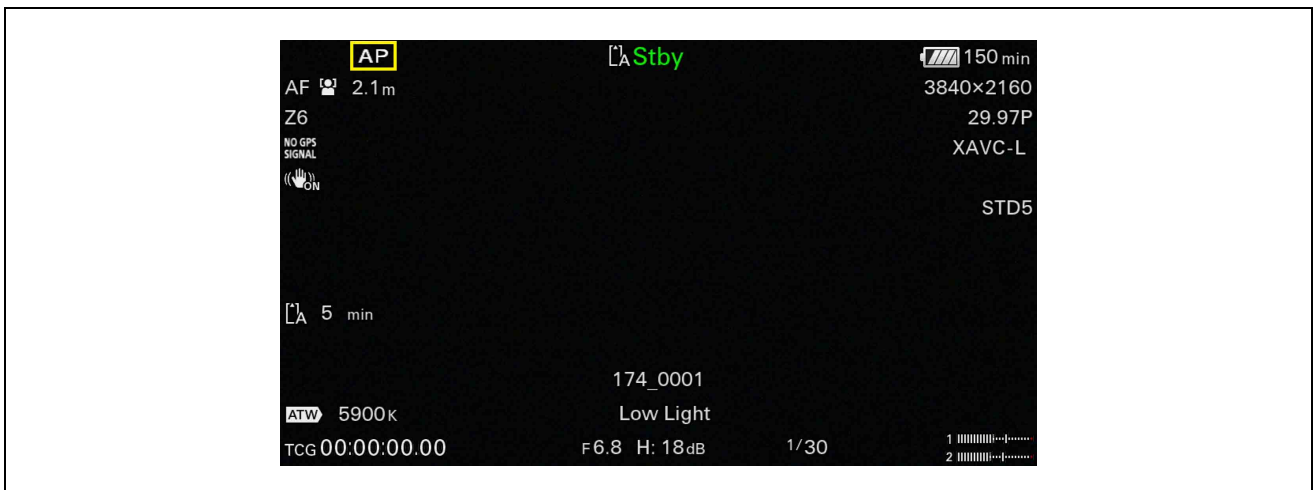
- 1 Select Network > Wireless LAN in the setup menu, and set Setting to Access Point Mode.

Network > AP Mode Settings > Camera SSID & Password in the setup menu becomes enabled.



- 2 Check the SSID and password.

Other wireless LAN devices can now be connected to the camcorder using the SSID and password.

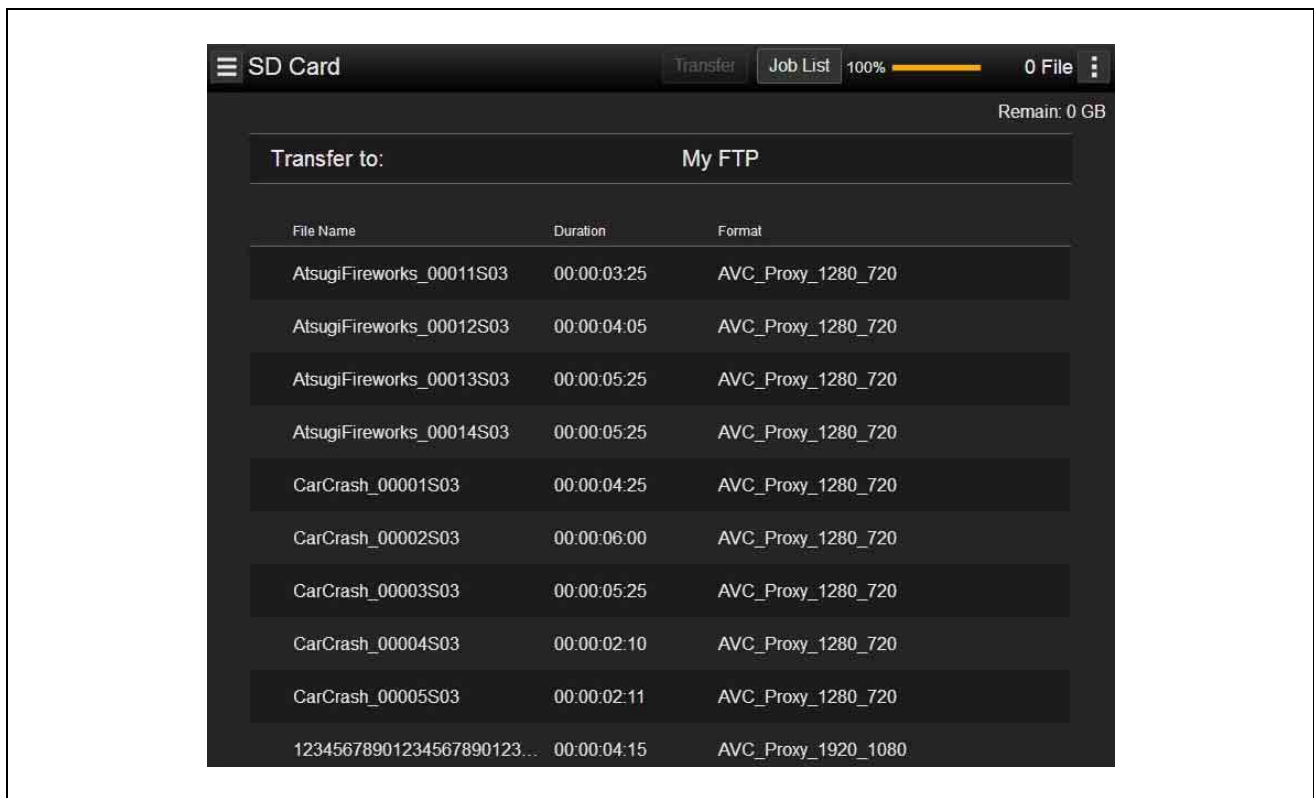


After connecting to a camcorder, you can access the web server of the camcorder using a web browser. The IP address is "192.168.1.1:8080".

Note

You can find the user name and password in Network > Access Authentication > User Name and Password.

When the connection is successful, the following screen appears in the web browser.

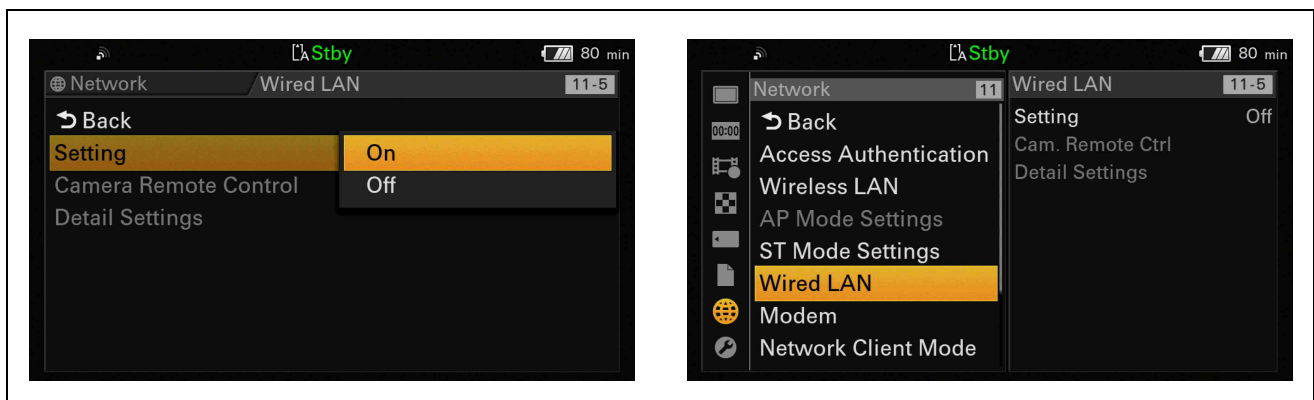


5.3.3. Wired LAN

- 1 Select Network > Wired LAN in the setup menu, and set Setting to On.

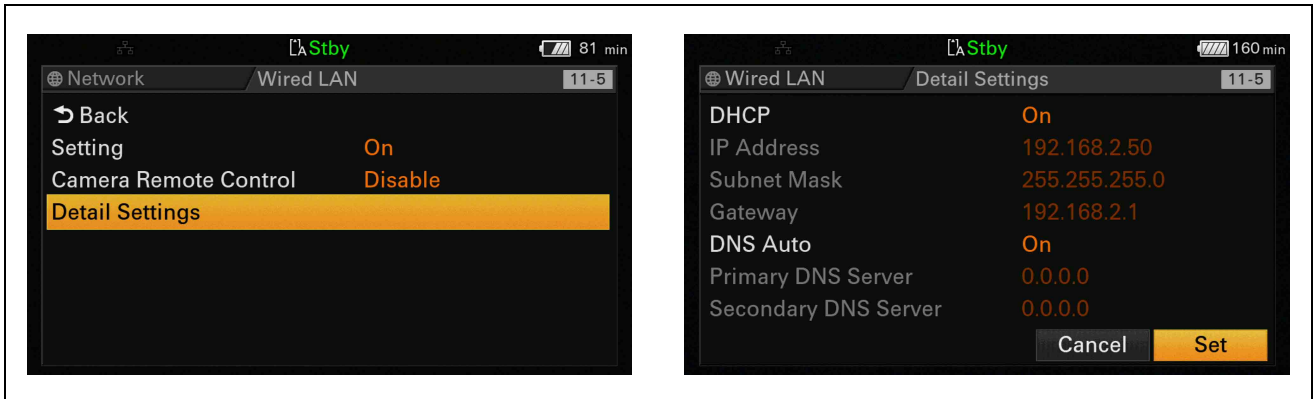
Note

The conditions under which a wired LAN can be used are determined by the combination with other networks and video outputs (SDI/HDMI/VIDEO). For details, refer to the Operating Instructions.



- 2 Select Network > Wired LAN in the setup menu, and set Camera Remote Control to Enable. Access to the web server of the camcorder is enabled.

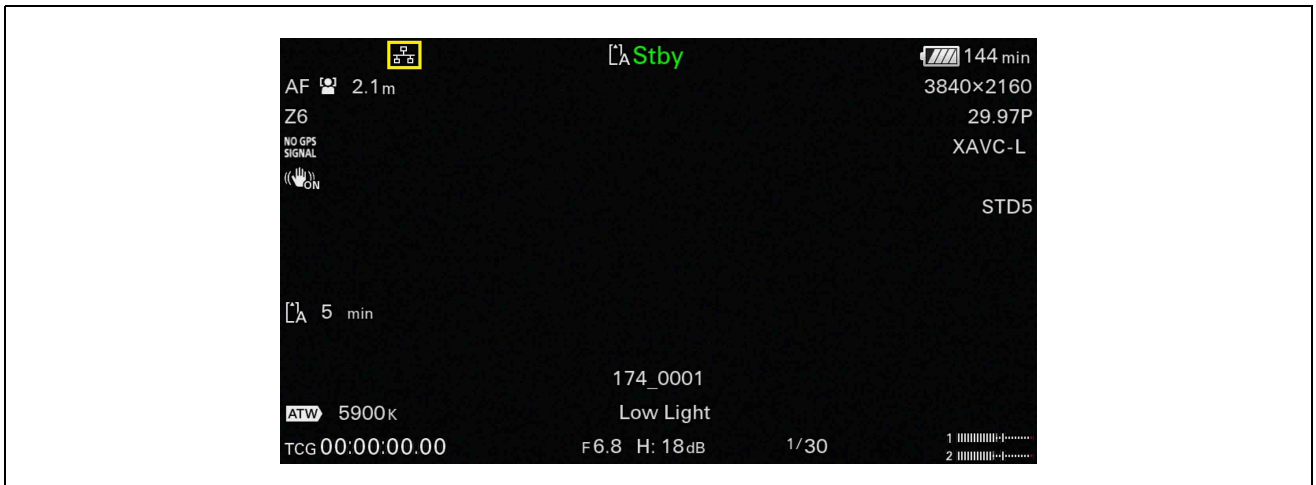
3 Select Network > Wired LAN > Detail Settings in the setup menu.



4 Select whether to obtain an IP address automatically via DHCP or set the IP address manually, and select whether to obtain DNS automatically or set DNS manually.

5 Select the Set button on the menu screen, and press the SEL/SET dial or SET button.

When the connection is successful, the LAN icon appears.



If you experience any difficulty, see "12.1.3. Wired LAN" in the Troubleshooting section.

5.3.4. Networks Combinations

You can use a wireless LAN and modem, and wireless LAN and wired LAN network interfaces simultaneously.

The following table shows the settings for the use of each interface for network client mode, streaming, and file transfers.

Modem1	Modem2	Wired LAN	Wireless LAN	Operation
ON	ON	OFF	ON	Dual Link: Uses Modem1 and Modem2. Single Link: Uses Modem1. Wireless LAN can be used for remote control.
ON	ON	OFF	OFF	Dual Link: Uses Modem1 and Modem2. Single Link: Uses Modem1.
ON	OFF	OFF	ON	Dual Link: Uses Modem1 and Wireless LAN. Single Link: Uses Modem1.
ON	OFF	OFF	OFF	Dual Link cannot be used. Single Link: Uses Modem1.
OFF	ON	OFF	ON	Dual Link: Uses Modem2 and Wireless LAN. Single Link: Uses Modem2.
OFF	ON	OFF	OFF	Dual Link cannot be used. Single Link: Uses Modem2.

Modem1	Modem2	Wired LAN	Wireless LAN	Operation
OFF	OFF	ON	ON	Dual Link: Uses Wired LAN and Wireless LAN. Single Link: Uses Wired LAN.
OFF	OFF	ON	OFF	Dual Link cannot be used. Single Link: Uses Wired LAN.
OFF	OFF	OFF	ON	Dual Link cannot be used. Single Link: Uses Wireless LAN.
OFF	OFF	OFF	OFF	Network function is disabled.

5.3.4.1. IP address conflicts

IP address conflicts may occur when using multiple network interfaces simultaneously, depending on the settings. IP addresses within the same segment may overlap, preventing successful communication.

The following table shows the IP address conflict pattern and the operation that results.

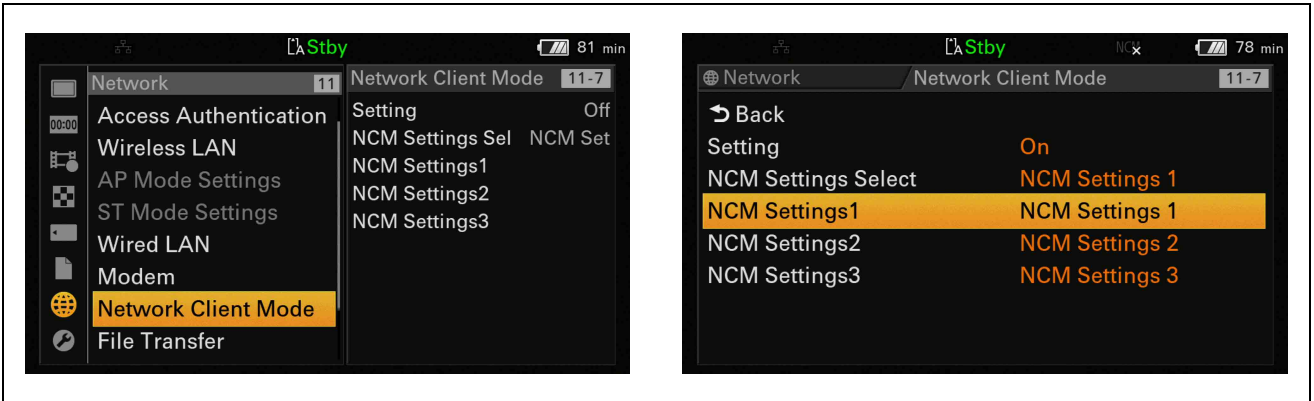
No.	IF connection (startup) order			Operation
	1	2	3	
1	Modem 1	Modem 2	-	If the segment IP address ranges overlap between modems, an address conflict error is displayed.
	Modem 2	Modem 1		
2	AP mode	Modem 1	Modem 2	① If the segment IP address ranges overlap between the AP and the modem, the AP mode address is automatically changed to another segment and an AP mode address change message is displayed.
		Modem 2	Modem 1	
3	Modem 1	AP mode	Modem 2	② If the second segment IP address ranges overlap between the AP and the modem, an address conflict error is displayed. ③ If the segment IP address ranges overlap between modems, an address conflict error is displayed.
	Modem 2		Modem 1	
4	Modem 1	Modem 2	AP mode	① If the segment IP address ranges overlap between the AP and the modem, the AP mode address is automatically changed to another segment and an AP mode address change message is displayed. ② If the segment IP address ranges overlap between modems, an address conflict error is displayed.
	Modem 2	Modem 1		
5	ST mode (Auto/Manual)	Modem 1	Modem 2	① If there is an IP conflict between the modem and the ST, an address conflict error will be displayed and the user will be prompted to change it.
		Modem 2	Modem 1	
6	Modem 1	ST mode (Auto/Manual)	Modem 2	② If the segment IP address ranges overlap between modems, an address conflict error is displayed.
	Modem 2		Modem 1	
7	Modem 1	Modem 2	ST mode (Auto/Manual)	③ If the IP address of the ST is included in the modem subnet, an address conflict error is displayed.
	Modem 2	Modem 1		
8	AP mode	Wired LAN (Auto/Manual)	-	If the segment IP address ranges overlap between the AP and the wired LAN, the AP mode address is automatically changed to another segment, and an AP mode address change message is displayed.
9	Wired LAN (Auto/Manual)	AP mode	-	
10	ST mode (Auto/Manual)	Wired LAN (Auto/Manual)	-	If there is an IP conflict between the wired LAN and the ST, an address conflict error is displayed and the user is prompted to change it.
11	Wired LAN (Auto/Manual)	ST mode (Auto/Manual)	-	

5.4. Network Client Mode Settings

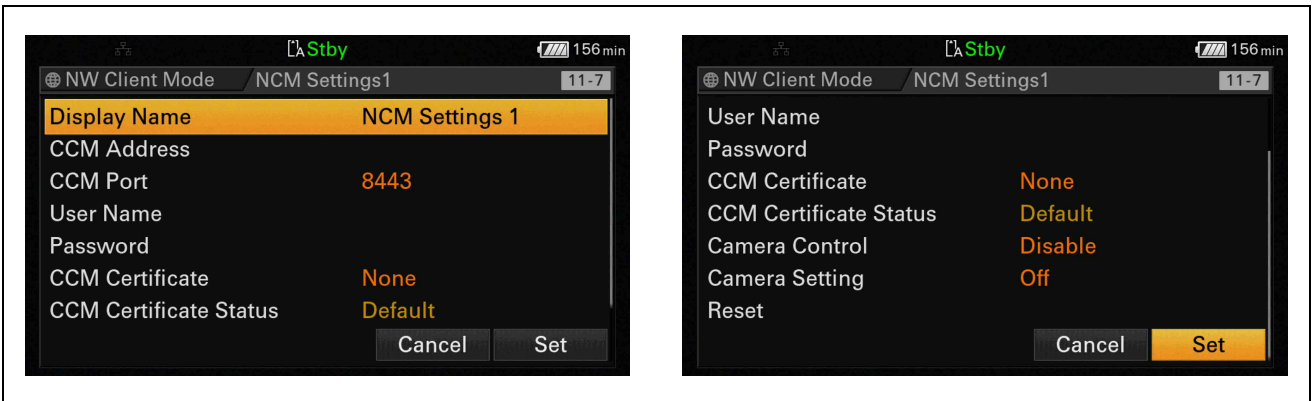
Check that the Date Time settings in System > Clock Set are correct before configuring the Network Client Mode settings.

Network Client Mode presets can be configured in NCM Settings 1 to 3. The following procedure describes how to set NCM Settings1 as an example.

- 1 Select Network > Network Client Mode > NCM Settings1 in the setup menu.



The registration dialog appears.



- 2 Enter the URL or IP address for Connection Control Manager (CCM), and specify the port, user name, and password.
- 3 Select the Set button on the menu screen, and press the SEL/SET dial or SET button.

NCM Settings detail settings:

[Camera Control]: Enables camera control from the CCM UI.

[Camera Setting]: Enables "ALL File" operations from the CCM UI

After loading an ALL file from the CCM, the camcorder will reboot.

After rebooting:

Always: Enables "ALL File" operations continuously.

Onetime: Enables "ALL File" operation once only, then the setting changes to "Off".

Presets can be selected based on your use case.

For example, you can set [NCM Settings1] for XDCAM air and [NCM Settings2] for Network RX Station.

5.5. Network Communication Test

5.5.1. 4G/LTE USB Modem

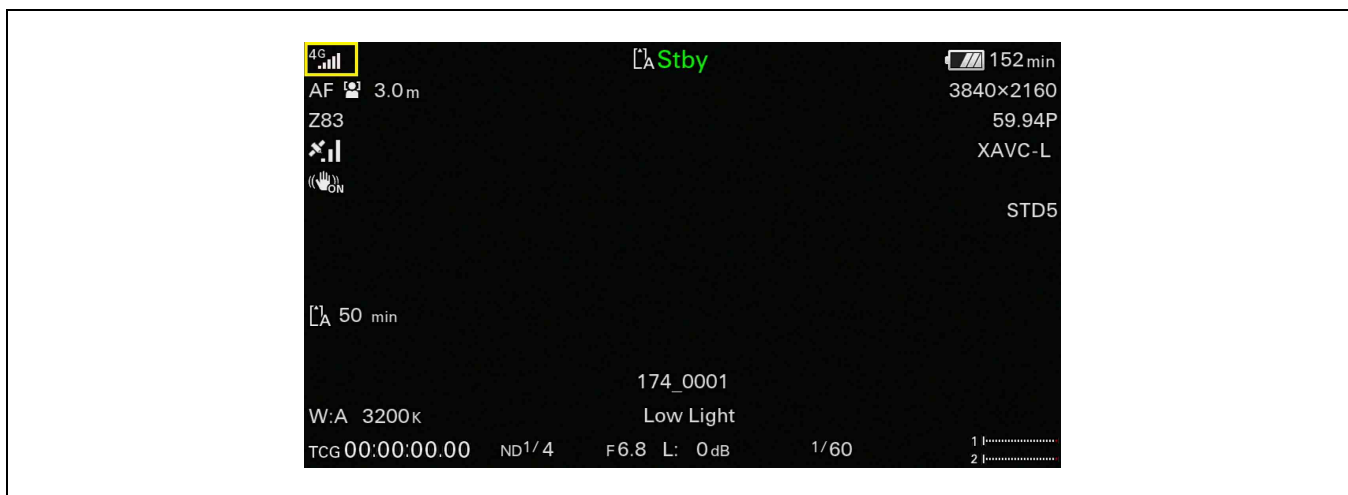
After attaching and configuring a 4G/LTE USB modem, the next step is test for network communication via the USB modem.

It is recommended that you test the USB modem using a computer beforehand (see “3.1.1. 4G/LTE USB Modem”).

- 1 Turn on the camcorder, and check that the 3G/4G icon appears on the camcorder LCD screen.

When the network connection is working correctly, the 3G/4G icon appears.

If you experience any difficulty, see “12.1.1. 4G/LTE USB Modem” in the Troubleshooting section.



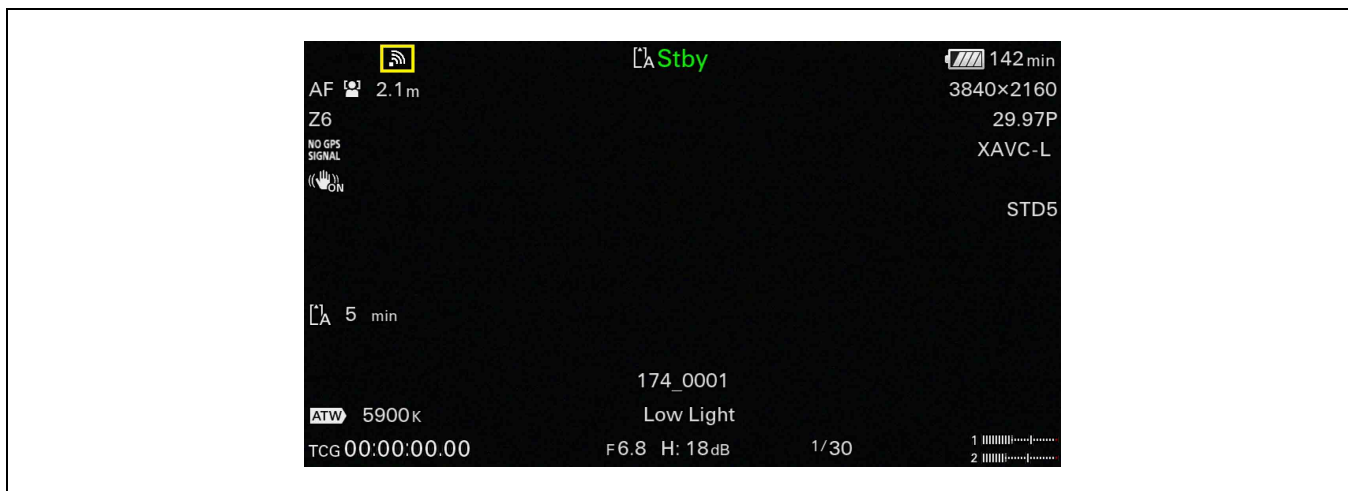
5.5.2. Wireless LAN

After configuring a wireless LAN, the next step is to test for network communication via the wireless LAN.

- 1 Turn on the camcorder, and check that the wireless LAN status indicator appears on the camcorder LCD screen.

When the network connection is working correctly, the wireless LAN status indicator appears.

If you experience any difficulty, see “12.1.2. Wireless LAN” in the Troubleshooting section.

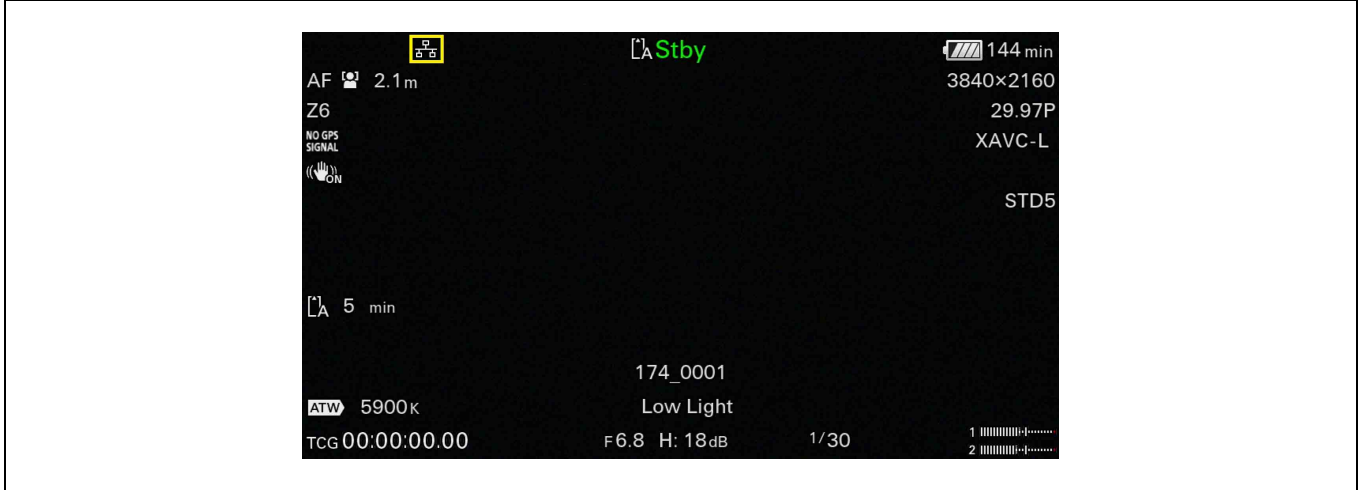


5.5.3. Wired LAN

After configuring a wired LAN, the next step is to test for network communication via the wired LAN.

- 1 Turn on the camcorder, and check that the LAN status indicator appears on the camcorder LCD screen.
When the network connection is working correctly, the LAN status indicator appears.

If you experience any difficulty, see "12.1.3. Wired LAN" in the Troubleshooting section.



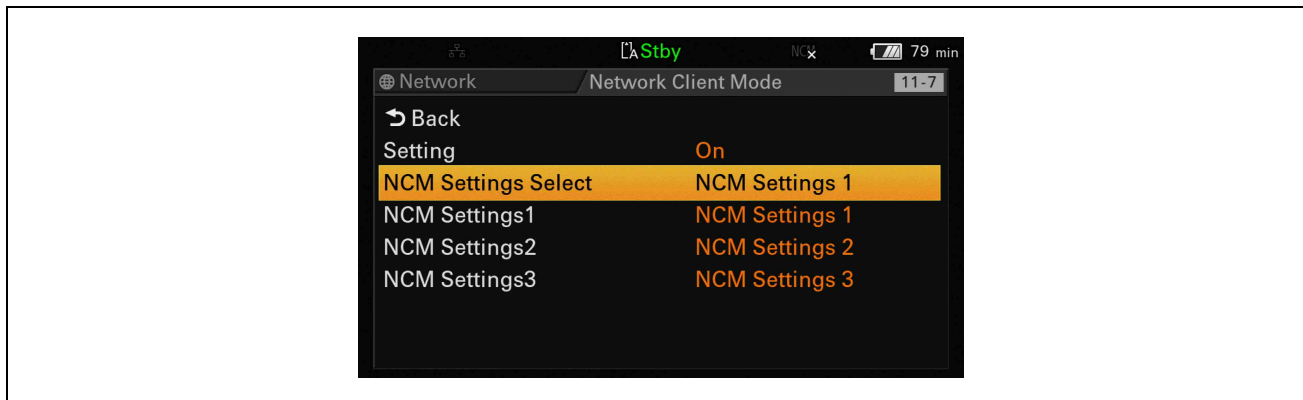
5.6. Network Client Mode Communication Test

After the network communication test is successful, the next step is to test Network Client Mode.

- 1 Select Network > Network Client Mode > NCM Settings Select in the setup menu, and select NCM Settings1.

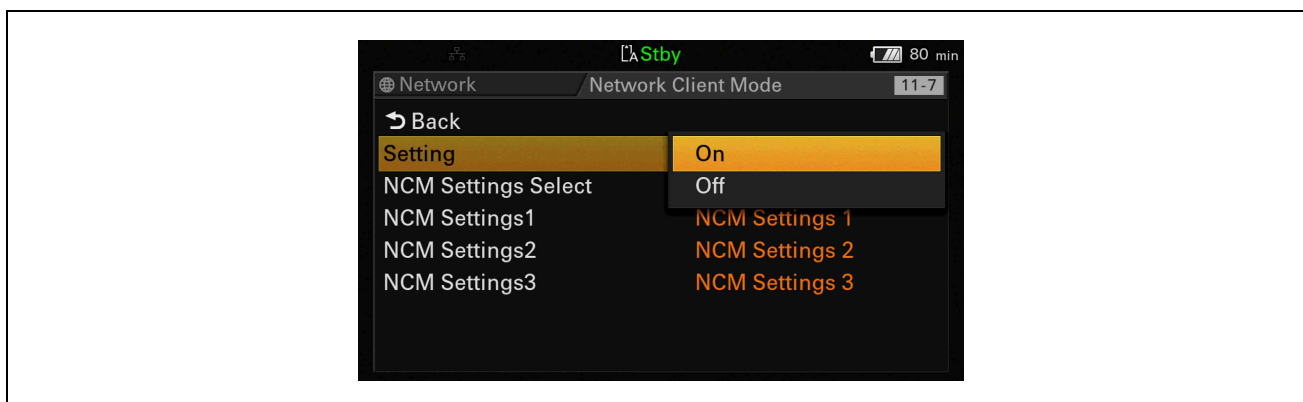
Note

NCM Settings1 is used as an example.



5.6.1. XDCAM air

- 1 Select Network > Network Client Mode in the setup menu, and set Setting to On.

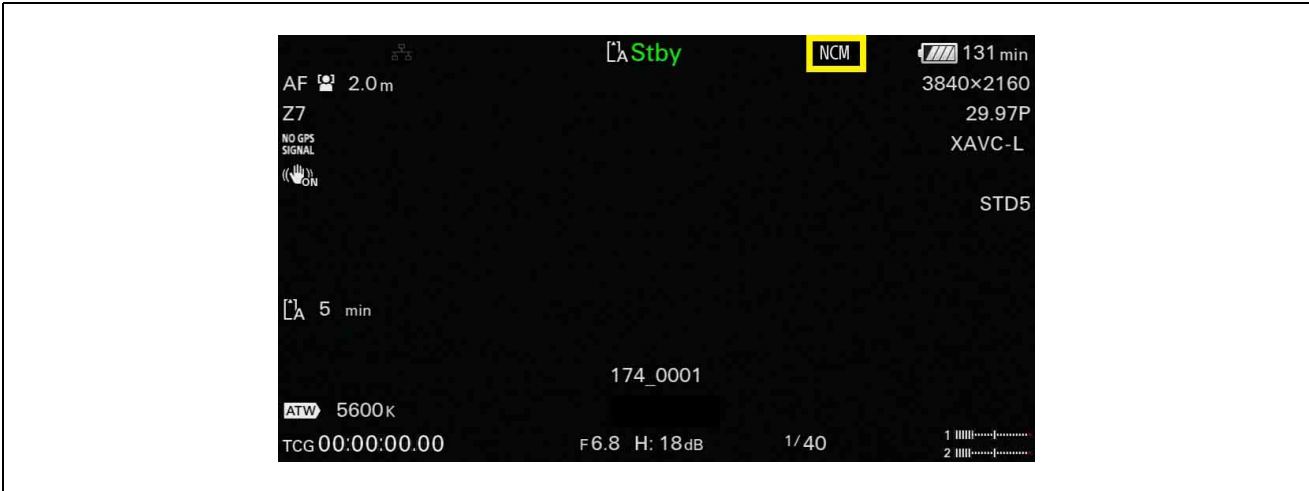


- 2 Start communication with the CCM of XDCAM air.

When XDCAM air is accessed for the first time from a device, you must activate the device after connecting to the CCM of XDCAM air.

In this case, the **NCM** icon appears on the camcorder LCD screen, and Network Client Mode status displays "Connecting" and then "Connected" with the CCM name. Check the CCM UI of XDCAM air.

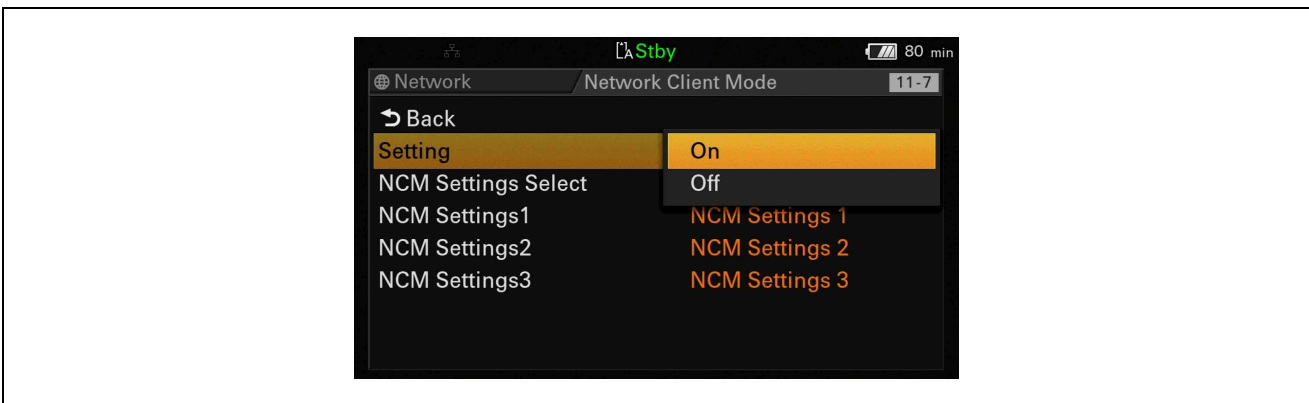
After activation, the **NCM** icon appears on the camcorder LCD screen and thumbnails appear on the CCM UI screen.



If you experience any difficulty, see "12.2. Network Client Mode" in the Troubleshooting section.

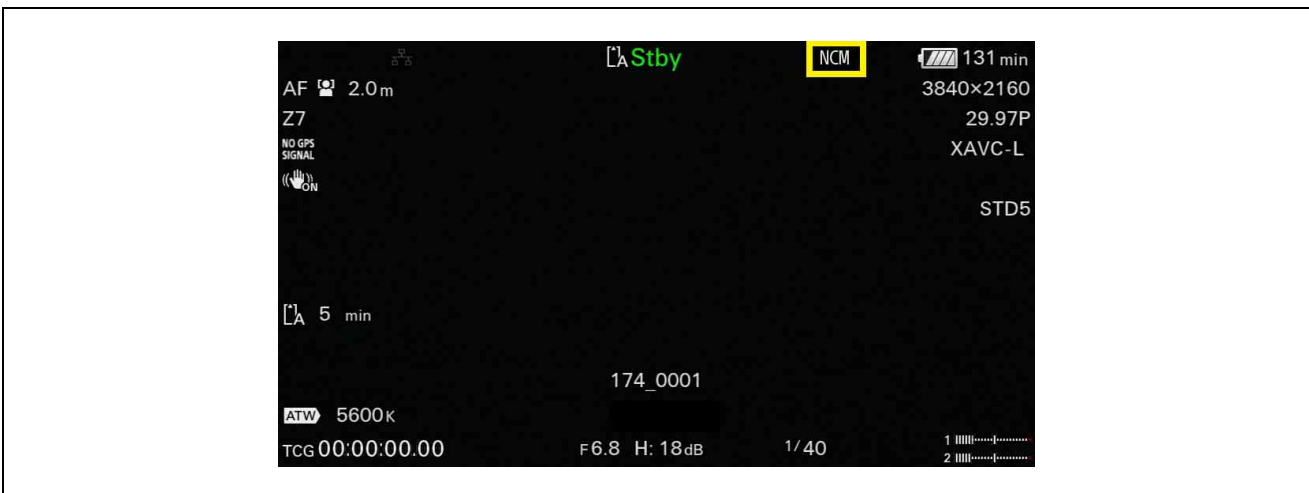
5.6.2. Network RX Station

- 1 Select Network > Network Client Mode in the setup menu, and set Setting to On.



- 2 Start communication with the CCM of Network RX Station.

When communication is successful, the **NCM** icon appears on the camcorder LCD screen and thumbnails appear on the CCM UI screen.



If you experience any difficulty, see "12.2. Network Client Mode" in the Troubleshooting section.

6.1. Camcorder Settings

Because of some system restrictions, “Live Streaming” is not available in the following cases. Check the camcorder settings.

- When System > Rec Format > Codec is set to DVCAM(MXF) in the setup menu
- When Recording > S&Q Motion > Setting is set to On in the setup menu
- When Recording > Interval Rec > Setting is set to On in the setup menu

Streaming at up to 10Mbps is supported under the following conditions.

- When Camera > Focus > Face Detection AF is set to Face Only AF or Face Priority AF in the setup menu
- When an intercom headset is connected

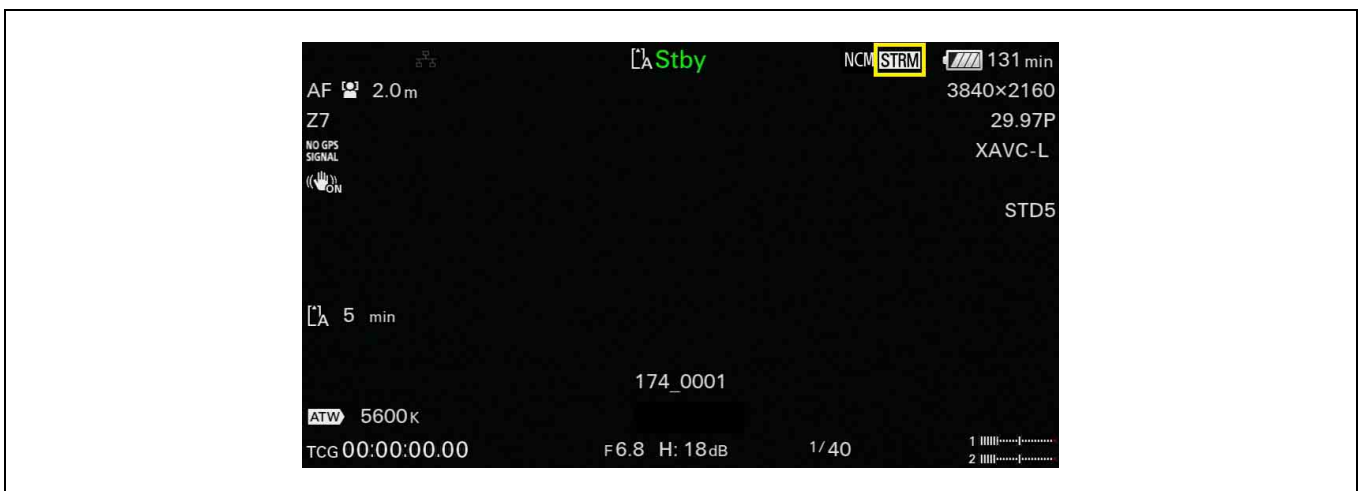
6.2. Streaming Test

After checking that Network Client Mode communication is successful, you can check QoS streaming. This test is controlled from the CCM UI.

- 1 Select the camcorder and set the Network Range and destination receiver (Network RX Station).
- 2 Issue the Start command for QoS streaming from the CCM.

The camcorder starts streaming.

When streaming is successful, the **STRM** icon appears on the camcorder LCD screen and the streaming picture appears in the CCM UI preview area.



If you experience any difficulty, see “12.3.1. Live Streaming” in the Troubleshooting section.

7.1. Camcorder Settings

The intercom function is not available in following cases.

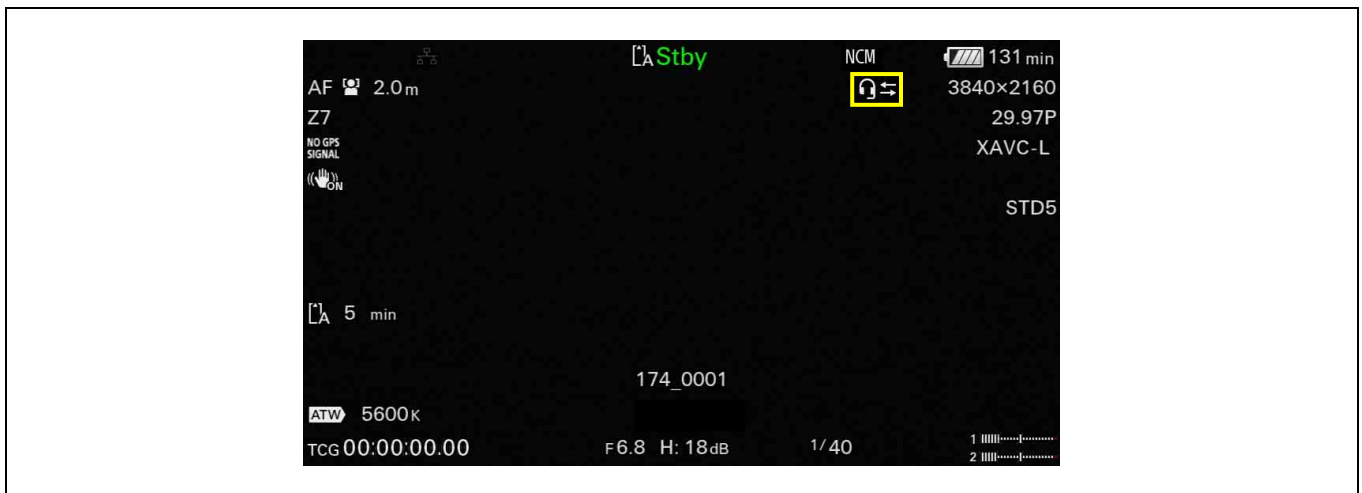
- When Camera > Focus > Face Detection AF is set to Face Only AF or Face Priority AF in the setup menu
- When Recording > Proxy Rec > Setting is set to On in the setup menu
- When Recording > 4K&HD(Sub) Rec > Setting is set to On in the setup menu.
- During streaming at a high bit rate (11Mbps or higher)

7.2. Intercom Test

After checking that Network Client Mode communication is successful, you can check the intercom operation.

This test is controlled from the CCM UI.

When the intercom function is enabled, the  icon appears on the camcorder LCD screen.



If the headset has an audio muting function, cancel muting. Adjust the intercom audio level as required, and check that communication is established.

8.1. Camcorder Settings

For camera remote operation, set Camera Control to Enable in the Network Client Mode settings. For details, see “5.4. Network Client Mode Settings”.

8.2. Camera Remote Test

After checking that Network Client Mode communication is successful, you can check camera remote operation.

This test is controlled from the CCM UI.

- 1** Select a camcorder and set the Network Range and the destination receiver (Network RX Station).
- 2** Issue the Start command for QoS streaming from the CCM.
The camcorder starts streaming.
When streaming is successful, the **STRM** icon appears on the LCD screen and the streaming picture appears in the CCM UI preview area.
If you experience any difficulty, see “12.3.1. Live Streaming” in the Troubleshooting section.
- 3** Select the Remote Tab on the CCM UI screen.
- 4** Check that the CCM can control camera zoom, iris, focus, etc.

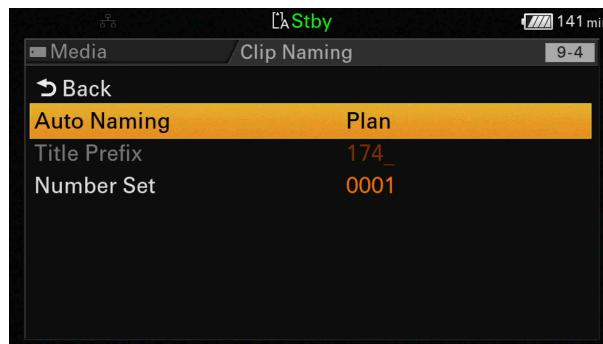
If you experience any difficulty, see “12.3.2. Camera Remote Control” in the Troubleshooting section.

9.1. Camcorder Settings

For setting file names using planning metadata, the following settings must be configured on the camcorder.

Select Media > Clip Naming in the setup menu, and set Auto Naming to Plan.

Select LCD/VF > Display On/Off in the setup menu, and set Clip Name to On.



9.2. Planning Metadata Handling Test

After communication with the CCM using Network Client Mode is successful, planning metadata files can be downloaded using the CCM UI.

When a planning metadata file is downloaded to your camcorder, clip names change to the content of the Title element of the planning metadata file.

If the Title element contains characters which cannot be used in file names, the characters are replaced by "_" (underscore) characters.

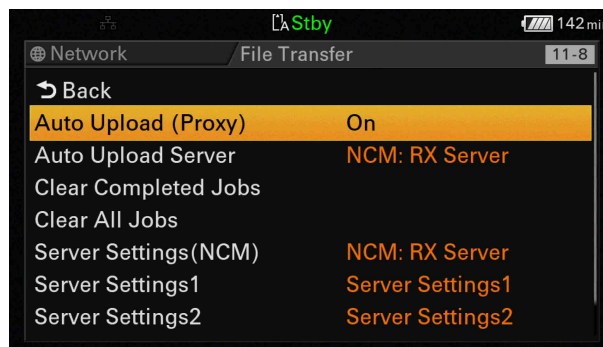
The following characters cannot be used in file names:

\ / : * ? " < > |

For example, if the Title element is "TodayNews<123>", clip names will be "TodayNews_123_" + numeric suffix.

10.1. Camcorder Settings

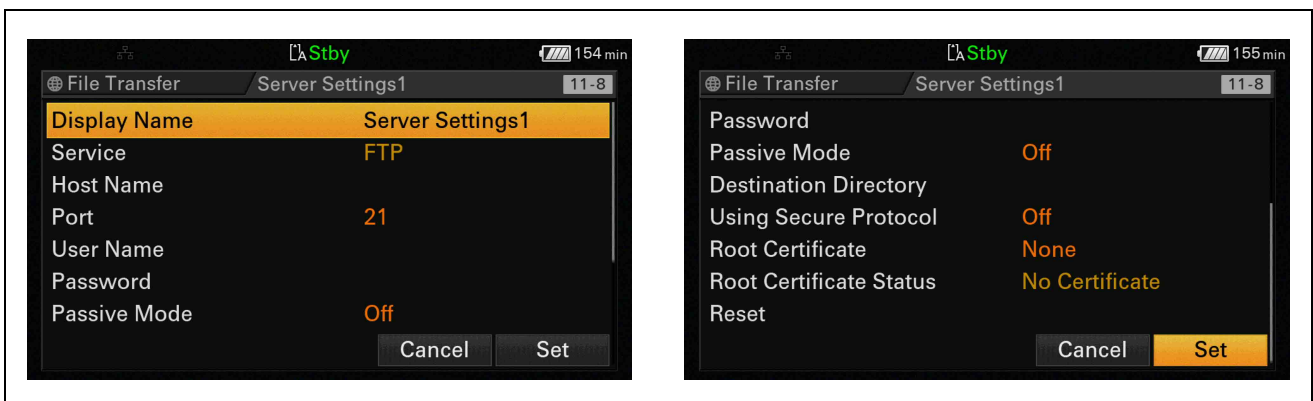
For automatically uploading proxy files, the following setting must be configured on the camcorder. Select Network > File Transfer in the setup menu, and set Auto Upload (Proxy) to On. When Auto Upload (Proxy) is set to On, the uploading of proxy files to a destination server occurs after proxy recording ends.



10.2. FTP Server Settings

Configure the FTP server settings for uploading proxy files. Several FTP servers can be registered on the camcorder. The following procedure describes the settings for Server Settings1 as an example.

- 1 Select Network > File Transfer > Server Setting1 in the setup menu, and enter the server information items.
- 2 Select Network > File Transfer > Default Upload Server in the setup menu, and set Server1 (item name in the list box is Display Name).



10.3. FTP Server Communication Test

Check communication with the FTP server.

10.3.1. Checking Operation using the Menu

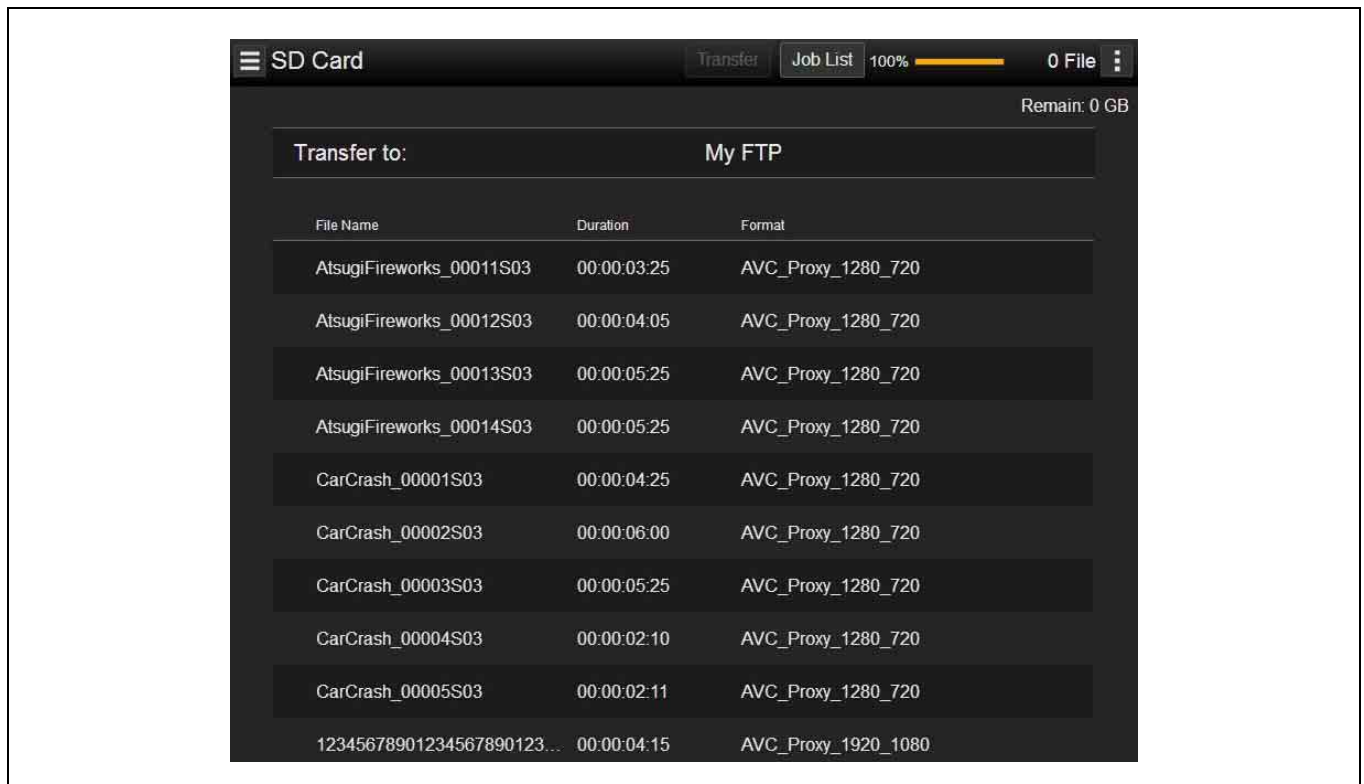
- 1 Select Thumbnail > Transfer Clip (Proxy) > Select Clip in the setup menu.
- 2 Select a clip, and start the file transfer.
- 3 Select Network > File Transfer > View Job List in the setup menu.
- 4 Check that the specified clip is being transferred.

Status: "Waiting" indicates that file transfer is pending.
If a problem arises, an error message is displayed.
"Completed" indicates that the transfer was successful.

10.3.2. Checking Operation using a Web Browser

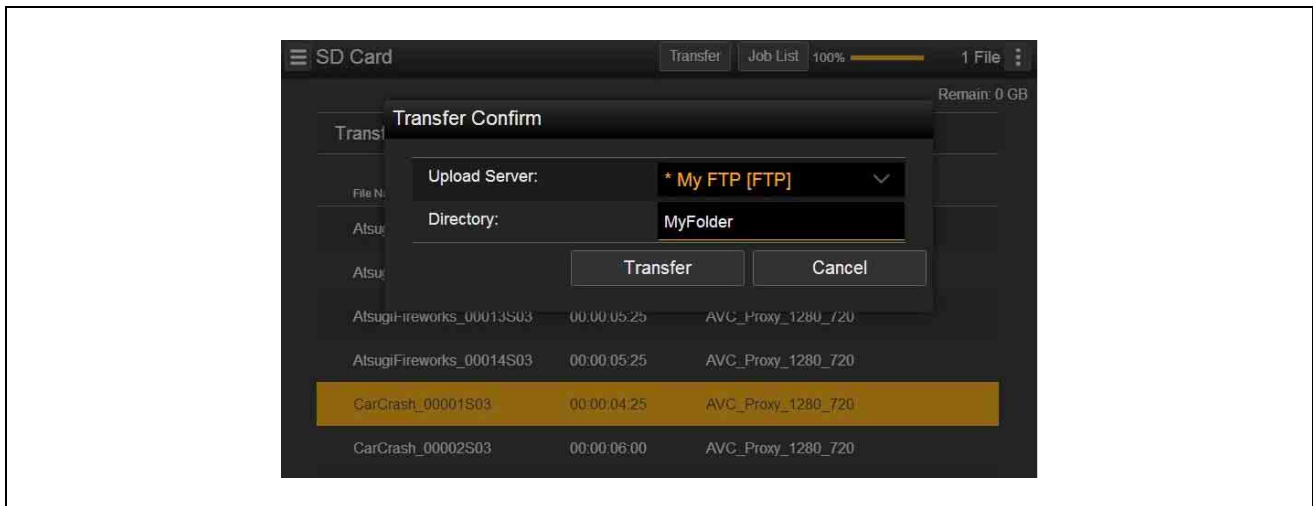
If "NCM: RX Server" is selected for FTP Server, this test is controlled from the CCM UI.

If you are using your own FTP server, you can test proxy file transfer using a web browser.



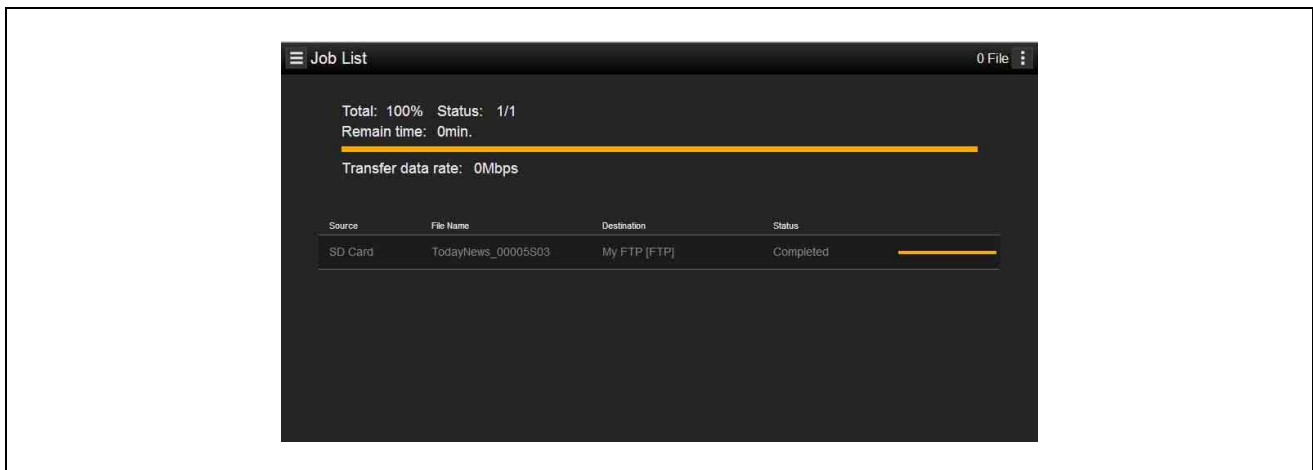
- 1 Select clips and click the Transfer button on the web page.

The Transfer Confirm dialog appears.



- 2 Select Upload Server, enter the destination directory, and click the Transfer button.

- 3 Display the Job List screen.



Status: "Waiting" indicates that file transfer is pending.

If a problem arises, an error message is displayed.

"Completed" indicates that the transfer was successful.

11.1. Camcorder Settings

No specific settings need to be configured on the camcorder.

11.2. FTP Server Settings




See *"10.2. FTP Server Settings"*.

11.3. FTP Server Communication Test





See *"10.3. FTP Server Communication Test"*.

12.1. Network



12.1.1. 4G/LTE USB Modem

Problem: Cannot connect to network via modem	
Display or Message	Reason & Solution
3G/4Gx icon is displayed 	Cannot connect to carrier communication network. Check that there is a SIM in the modem (see "3.1.1. 4G/LTE USB Modem"). Check that there is a carrier radio wave signal.
3G/4G icon is displayed 	During startup. Searching for carrier communication network. Unable to connect to network.
3G/4G icon is not displayed	Cannot detect USB modem device. Check whether the modem is a supported model or not (see "3.1.1. 4G/LTE USB Modem").
	Modem is not working. Check that Network > Modem > Setting in the setup menu is set to On (see "3.1.1. 4G/LTE USB Modem").
	Network status icon indicator is not displayed. Check that LCD/VF > Display On/Off > Network Status in the setup menu is set to On.
3G/4G icon is displayed 	The network is connected properly.
Problem: Cannot access information from Network > Modem in the setup menu	
Display or Message	Reason & Solution
Network > Modem > Modem1 Device Name is set to "----" in the setup menu.	Cannot detect USB modem device. Check whether the modem is a supported model or not.
Network > Modem > Modem2 Device Name is set to "----" in the setup menu.	Check whether the modem is working properly or not (see "3.1.1. 4G/LTE USB Modem"). Check that the USB connector of the camcorder works with another USB device.
	USB modem device is not attached.
Problem: Cannot set Network > Modem > Setting in the setup menu	
Display or Message	Reason & Solution
Network > Modem > Setting in the setup menu is set to Off	The conditions under which a modem can be used are determined by the combination with other networks and video outputs (SDI/HDMI/VIDEO). For details, refer to the Operating Instructions.






12.1.2. Wireless LAN

Problem: Cannot connect to network via Wi-Fi	
Display or Message	Reason & Solution
Only lower left dot of wireless LAN icon is displayed 	SSID or Key (Password) is incorrect. (See "5.3.2. Wireless LAN"). Searching for an access point. Check the Wi-Fi access point. Check whether other devices can connect to this access point or not.
Wireless LAN icon is displayed 	Initializing before starting the connection. Cannot connect to network. Check the settings of Network > Wireless LAN > Setting and Network > ST Mode Settings items in the setup menu.
Wireless LAN icon is not displayed	Wi-Fi is not working. Check that Network > Wireless LAN > Setting in the setup menu is set to Station Mode. Network status indicator icon is not displayed. Check that LCD/VF > Display On/Off > Network Status in the setup menu is set to On.
Wireless LANx icon is displayed 	Communication error. Check whether other devices can connect to this access point or not.
AP icon is displayed 	Network > Wireless LAN > Setting in the setup menu is set to Access Point Mode. In this case, the camcorder is connected to the local network, and cannot connect to the Internet.
AP icon is not displayed	Initializing before starting the connection. Wireless LAN is not working. Check that Network > Wireless LAN > Setting in the setup menu is set to Access Point Mode. Network status indicator icon is not displayed. Check that LCD/VF > Display On/Off > Network Condition in the setup menu is set to On.
Problem: Cannot set Network > Wireless LAN > Setting in the setup menu	
Display or Message	Reason & Solution
Network > Wireless LAN > Setting in the setup menu is set to Off	The conditions under which a wireless LAN can be used are determined by the combination with other networks and video outputs (SDI/HDMI/VIDEO). For details, refer to the Operating Instructions.

12.1.3. Wired LAN

Problem: Cannot connect to network via wired LAN	
Display or Message	Reason & Solution
LANx icon is displayed 	Cannot connect to local area network. Check that the LAN cable and other LAN devices are working.
LAN icon is displayed 	Initializing before starting the connection. Cannot connect to local area network. Check Network > Wired LAN > Detail Settings in the setup menu.
LAN icon is not displayed	Wired LAN is not working. Check that Network > Wired LAN > Setting in the setup menu is set to On. Network status icon indicator is not displayed. Check that Network > Display On/Off > Network Status in the setup menu is set to On.
Problem: Cannot set Network > Wireless LAN > Setting in the setup menu	
Display or Message	Reason & Solution
Network > Wired LAN > Setting in the setup menu is set to Off	The conditions under which a wired LAN can be used are determined by the combination with other networks and video outputs (SDI/HDMI/VIDEO). For details, refer to the Operating Instructions.

12.2. Network Client Mode

Problem: Cannot connect to CCM	
Display or Message	Reason & Solution
NCM icon is displayed 	Camcorder has not been activated from the CCM UI of XDCAM air. Check whether the CCM UI whether Settings > Resource > Transmitter > TX setting is set to Pending. If it is set to Pending, change the setting to Registered.
	Camera license count "Used" has reached "Total". Check Settings > Resource > Transmitter in the CCM UI.
	NCM settings are incorrect. Check the following settings: URL of CCM, IP address of CCM, Port number, and other settings (see "5.4. Network Client Mode Settings"). Also, check that the DNS server setting is correct (see "12.1. Network").
	Network is not working properly. Check the network settings (see "12.1. Network").
	Camcorder version does not match with CCM. Check the camcorder firmware version.
NCM× icon is displayed.  Message "Authentication Failed" is displayed on the NW Client Mode Status screen.	Password is incorrect. Select System > Clock Set in the setup menu, and set the clock to the correct date and time.
NCM× icon is displayed.  Message "Certificate is not yet valid" is displayed on the NW Client Mode Status screen.	Date is incorrect (see "5.4. Network Client Mode Settings").
NCM× icon is displayed.  Message "Destination Address Error" is displayed on the NW Client Mode Status screen.	Cannot get host name from DNS. Check the DNS settings in the setup menu: Network > ST mode settings > Manual Register or Network > Wired LAN > Detail Settings. CCM address is incorrect (see "5.4. Network Client Mode Settings").
NCM× icon is displayed.  Message "No Network Access" is displayed on the NW Client Mode Status screen.	Current network environment is not connected to the Internet. Check network condition (see "12.1. Network").
NCM icon is not displayed	Wired LAN is not working. Check that Network > Network Client Mode > Settings in the setup menu is set to On.
	Network status indicator icon is not displayed. Check that LCD/VF > Display On/Off > Network Condition in the setup menu is set to On.

12.3. Use Cases


12.3.1. Live Streaming

Problem: Cannot start streaming	
Display or Message	Reason & Solution
STRM icon is not displayed	<p>Streaming cannot start in the following cases.</p> <ul style="list-style-type: none"> • Camcorder is operating in DVCAM recording format (System > Rec Format > Codec is set to DVCAM(MXF)) • Camcorder is operating in S&Q mode (Recording > S&Q Motion > Setting is set to On) • Camcorder is operating in interval recording mode (Recording > Interval Rec > Setting is set to On)
Problem: Cannot reach target bitrate for QoS streaming	
Display or Message	Reason & Solution
	<p>APN setting may be incorrect after changing a SIM card. Check the APN setting using a computer.</p>
	<p>Carrier network environment is not good.</p>

12.3.2. Camera Remote Control

Problem: Cannot control zoom/iris etc.	
Display or Message	Reason & Solution
Zoom/iris control from CCM UI is disabled	<p>Network > Network Client Mode > NCM Settings[1,2,3] > Camera Control in the setup menu is set to Disable. Change the Camera Control setting to Enable.</p>
Zoom/iris control of CCM UI is enabled but does not operate.	<p>The SERVO/MANUAL switch of the lens is set MANUAL. Check the lens control switch.</p>

12.3.3. Intercom Operation

Problem: Cannot use the intercom	
Display or Message	Reason & Solution
<p>Intercom not available icon is displayed.</p> 	<p>The intercom function is not available in the following cases because of some system restrictions.</p> <ul style="list-style-type: none"> • Camera > Focus > Face Detection AF in the setup menu is set to Face Only AF or Face Priority AF. • Recording > Proxy Rec > Setting in the setup menu is set to On. • Recording > 4K&HD(Sub) Rec > Setting in the setup menu is set to On. • High bit rate streaming

12.3.4. File Naming using Planning Metadata

Problem: Cannot set file name	
Display or Message	Reason & Solution
<p>"123_0001" is displayed as the clip name on the camcorder LCD</p>	<p>Media > Clip Naming > Auto Naming in the menu is set to Title. Change the setting in the setup menu to Plan (see "9.1. Camcorder Settings").</p>
	<p>No planning metadata has been loaded. Check Media > Planning Metadata > Properties in the setup menu (see "9.1. Camcorder Settings").</p>

12.3.5. Proxy Auto Upload

Problem: Cannot get proxy files	
Display or Message	Reason & Solution
"Waiting" is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	While streaming, uploading of files is disabled. Check whether streaming is working or not (see "6 Setup for "Live Streaming"").
Job List on View Job List screen has no entries (Network > File Transfer > View Job List)	Auto upload setting of camcorder is set to Off. Check that Network > File Transfer > Auto Upload (Proxy) in the setup menu is set to On.
"ET04-0406" is displayed in Job List status of CCM UI. "Dest. Conn. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	FTP Server Settings are incorrect. Check the FTP server settings (see "10.2. FTP Server Settings"). Network or FTP server is not working. Check the network environment and FTP server (see "10.3. FTP Server Communication Test").
"ET04-0401" is displayed in Job List status of CCM UI. "Dest. Auth. Failed" is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	User name or password for FTP server is incorrect. Check the FTP server settings (see "10.2. FTP Server Settings").
"ET04-0404" is displayed in Job List status of CCM UI. "Dest. Cert. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	A certification error occurred. Check the date setting or the CA certificate of the FTP server (see "10.2. FTP Server Settings").
"ET04-0403" is displayed in Job List status of CCM UI. "File Access Err." is displayed in Job List status of View Job List screen (Network > File transfer > View Job List). "ET04-0405" is displayed in Job List status of CCM UI. "Media Access Err." is displayed in Job List status of View Job List screen (Network > File transfer > View Job List)	Cannot read specified files. Check whether the specified files exist on the memory card. SD card is not loaded in the SD card slot. Check that an SD card is loaded in the SD card slot.

Problem: Cannot get original files	
Display or Message	Reason & Solution
"Waiting" is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	While streaming, uploading of files is disabled. Check whether streaming is working or not (see "12.3.1. Live Streaming").
"ET04-0406" is displayed in Job List status of CCM UI. "Dest. Conn. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	FTP settings are incorrect Check the FTP server settings (see "10.2. FTP Server Settings"). Network or FTP server is not working. Check the network environment and FTP server (see "10.3. FTP Server Communication Test").
"ET04-0401" is displayed in Job List status of CCM UI. "Dest. Auth. Failed" is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	User name or password for FTP server is incorrect. Check the FTP server settings (see "10.2. FTP Server Settings").
"ET04-0404" is displayed in Job List status of CCM UI. "Dest. Cert. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	A certification error occurred. Check the date setting or CA certificate of the FTP server (see "10.2. FTP Server Settings").
"ET04-0403" is displayed in Job List status of CCM UI. "File Access Err." is displayed in Job List status of View Job List screen (Network > File transfer > View Job List)	Cannot read specified files. Check whether the specified files exist on the memory card.

12.3.6. Upload to FTP Server

Problem: Cannot get proxy files	
Display or Message	Reason & Solution
"Waiting" is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	While streaming, uploading of files is disabled. Check whether streaming is working or not (see "6 Setup for "Live Streaming"").
Job List in View Job List screen has no entries (Network > File Transfer > View Job List)	Auto upload setting of the camcorder is set to Off. Check that Network > File Transfer > Auto Upload (Proxy) in the setup menu is set to On.
"ET04-0406" is displayed in Job List status of CCM UI. "Dest. Conn. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	FTP server settings are incorrect Check the FTP server settings (see "10.2. FTP Server Settings"). Network or FTP server is not working. Check the network environment and FTP server (see "10.3. FTP Server Communication Test").
"ET04-0401" is displayed in Job List status of CCM UI. "Dest. Auth. Failed" is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	User name or password for FTP server is incorrect. Check the FTP server settings (see "10.2. FTP Server Settings").
"ET04-0404" is displayed in Job List status of CCM UI. "Dest. Cert. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	A certification error occurred. Check the date setting or CA certificate of the FTP server (see "10.2. FTP Server Settings").
"ET04-0403" is displayed in Job List status of CCM UI. "File Access Err." is displayed in Job List status of View Job List screen (Network > File transfer > View Job List)	Cannot read specified files. Check whether the specified files exist on the memory card.
Problem: Cannot get original files	
Display or Message	Reason & Solution
"Waiting" is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	While streaming, uploading of files is disabled. Check whether streaming is working or not (see "9.1. Camcorder Settings").
"ET04-0406" is displayed in Job List status of CCM UI. "Dest. Conn. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	FTP settings are incorrect Check the FTP server settings (see "10.2. FTP Server Settings"). Network or FTP server does not work. Check the network environment and FTP server (see "10.3. FTP Server Communication Test").
"ET04-0401" is displayed in Job List status of CCM UI. "Dest. Auth. Failed" is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	User name or password for FTP server is incorrect. Check the FTP server settings (see "10.2. FTP Server Settings").
"ET04-0404" is displayed in Job List status of CCM UI. "Dest. Cert. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	A certification error occurred. Check the date setting or CA certificate of the FTP server (see "10.2. FTP Server Settings").
"ET04-0403" is displayed in Job List status of CCM UI. "File Access Err." is displayed in Job List status of View Job List screen (Network > File transfer > View Job List)	Cannot read specified files. Check whether the specified files exist on the memory card.

Revision History

Date	Description	Modified by	Revision
December, 2019	1st Revision	-	1.00