SONY

Wireless Network Connection

Setup Guide

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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 12.

Terminology

"Network RX Station" refers to "PWS-100RX1/PWS-110RX1/PWS-110RX1A" devices. "CCM" refers to the "Connection Control Manager" of "C3 Portal" or "Network RX Station".

Trademarks

Wi-Fi[®] is a registered trademark of the Wi-Fi Alliance[®]. C3 Portal 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 C3 Portal Example Use Cases



The following diagram shows three typical use cases.

2.1.1. Live Streaming



Live streaming with QoS control is supported with C3 Portal or Network RX Station.

Setup checkpoints		
TX side	Camcorder Settings	
	Related Equipment (Wireless LAN/LTE/Wired LAN)	
	Single or Dual Link	
RX side	CCM (C3 Portal / 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 (C3 Portal / 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 (C3 Portal / Network RX Station)	
	CCM "ALL File" Management	

2.2. File Workflow in C3 Portal 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	

2.3. RTMP/RTMPS Streaming



Setup checkpoints				
TX side	Camcorder Settings			
	Related Equipment (Wireless LAN/LTE/Wired LAN)			
RX side	-			



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
- Connected via smartphone

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

Wired LAN / D	Detail Settings	11-5
DHCP	On	
IP Address		
Subnet Mask		
Gateway		
DNS Auto	On	
Primary DNS Server		
Secondary DNS Serve	er 0.0.0.0	
	Cancel	Set

3.1.4. Connected via Smartphone

Connect a smartphone to the camcorder using a USB cable, and connect to the Internet via the smartphone.

Connect the USB cable to the USB 2.0 type A connector or USB 3.0 type A connector as described in the *"3.1.1. 4G/LTE USB Modem"* section. Do not connect the smartphone to the camcorder using a USB hub. Refer to the Operating Instructions for details.

Use the C3 Portal App (hereinafter referred to as the "C3P App") on the smartphone to configure the connection to the C3 Portal cloud service.

3.2. Network Client Mode (NCM)

Check the C3 Portal 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 Settings1 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. The following information is required.

- Server URL or IP address
- User name
- Password

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• Whether FTP connection operates in active or passive mode

File Transfer	erver Settings1	11-8		rver Settings1 11
Display Name	Server Settings1		Password	
Service	FTP		Passive Mode	Off
Host Name		12	Destination Directory	
Port	21		Using Secure Protocol	Off
User Name			Root Certificate	None
Password			Root Certificate Status	No Certificate
Passive Mode	Off	3	Reset	
	Cancel	Set		Cancel Set

For secure transfer, the use of FTPS is recommended.

To use FTPS, you must check the encryption method and server certificate revocation checking method, and obtain a root certificate.

- **1** Check the FTP server.
 - Check the encryption method of the FTP server. The PXW-Z280/Z190 supports TLS 1.2, 1.1, and 1.0.
 - ② Check the server certificate revocation checking method. The revocation checking method should be either CRL or OCSP. Note that the PXW-Z190 supports only CRL.
- **2** Obtain a root certificate.
 - ① Download the root certificate of the server certificate issuer (certificate authority) from the certificate authority site.
 - (2) Check that the encoding type of the certificate is PEM (base64).

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.

Intercom calls can be initiated and terminated from the CCM or from C3 Portal.



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	5.3. Network Settings
2	5.4. Network Client Mode Settings
3	5.5. Network Communication Test
4	5.6. Network Client Mode Communication Test
5	6.1. Camcorder Settings
6	6.2. Streaming Test

4.2. To-Do List for "Intercom Operation"

Table 2. To-Do List for "Intercom Operation"

No.	See
1	5.3. Network Settings
2	5.4. Network Client Mode Settings
3	5.5. Network Communication Test
4	5.6. Network Client Mode Communication Test
5	6.1. Camcorder Settings
6	7.2. Intercom Test

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

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

No.	See
1	5.3. Network Settings
2	5.4. Network Client Mode Settings
3	5.5. Network Communication Test
4	5.6. Network Client Mode Communication Test
5	8.1. Camcorder Settings
6	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	5.3. Network Settings
2	5.4. Network Client Mode Settings
3	5.5. Network Communication Test
4	5.6. Network Client Mode Communication Test
5	9.1. Camcorder Settings
6	9.2. Planning Metadata Handling Test

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

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

You can also use the C3P App on a smartphone to configure Proxy Auto Upload settings.

Table 6. To-Do List for "Proxy Auto Upload" using a Smartphone

No.	See
1	5.3.4. Connection via Smartphone (PXW-Z280 only)
2	5.5. Network Communication Test
3	10.1. Camcorder Settings
4	10.3. FTP Server Communication Test

4.6. To-Do List for "Upload to FTP Server"

Table 7. To-Do List for "Upload to FTP Server"

No.	See
1	5.3. Network Settings
2	5.4. Network Client Mode Settings
3	5.5. Network Communication Test
4	5.6. Network Client Mode Communication Test
5	11.1. Camcorder Settings
6	11.2. FTP Server Settings
7	11.3. FTP Server Communication Test

You can also use the C3P App on a smartphone to configure Upload to FTP Server settings.

Table 8. To-Do List for "Upload to FTP Server" using a Smartphone

No.	See
1	5.3.4. Connection via Smartphone (PXW-Z280 only)
2	5.5. Network Communication Test
3	11.1. Camcorder Settings
4	11.3. FTP Server Communication Test

4.7. To-Do List for "RTMP/RTMPS Streaming"

Table 9. To-Do List for "RTMP/RTMPS Streaming"

No.	See
1	5.3. Network Settings
2	12.1. Camcorder Settings
3	12.2. RTMP/RTMPS Server Communication Test



5.1. Equipment for Wireless Solution

Table 8. Equipment List

USB modem	Commercially-available product	

5.2. Assembling

There are no option devices for attachment.

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.

	DC IN 12.0 V				DC IN 12.0
 Network Back Setup for Mobile App Access Authentication Wireless LAN AP Mode Settings ST Mode Settings Wired LAN Modem 	Access Authentication 11-2 User Name Input Password Generate Passwo Show Settings	Network Password U A U A B C D A B C D A B C D A B C D A B C C A B C C A B C C A B C C C A B C C C A B C C C A B C C C A C A	A cross Authen a 123 • !#\$ b E F G H b R S T U → BS	iration IJKL VWXY Dor	M Z

5.3.1. 4G/LTE USB Modem

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 "Network and video output combinations" section in "Output Formats and Limitations" in the Appendix in the PXW-Z280/Z190 Operating Instructions.

5.3.1.1. PXW-Z190

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

	[] Stby	1	111 86 min	Ľ S	tby 📶 86 min
	Network 11	Modem	11-6	Network / Modem	<mark>11-6</mark>
00:00	➔ Back	Setting	Off	➔ Back	
₩	Access Authentication	Mdm1 Dev.Name		Setting	On
	Wireless LAN	Mdm1 IP Addr.		Modem1 Device Name	Off
	AP Mode Settings	Mdm2 Dev Name		Modem1 IP Address	
	ST Mode Settings	Mdm2 IP Addr.		Modem1 Subnet Mask	
	Wired LAN	Mdm2 Subnet		Modem2 Device Name	
	Modem			Modem2 IP Address	
Ø	Network Client Mode			Modem2 Subnet Mask	

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

⁴ G	Ը հ Stby	🖬 152 min
AF 🞴 3.0 m		3840×2160
Z83		59.94P
×.il		XAVC-L
		STD5
[] 50 min		
	174_0001	
W:A 3200ĸ	Low Light	
TCG 00:00:00.00 ND1/	4 F6.8 L: OdB 1/60	0 1 !

If you experience any difficulty, see "13.1.1. 4G/LTE USB Modem" in the Troubleshooting section.

5.3.1.2. PXW-Z280

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

			dc in 12.0 v			DC IN 1
	Network 11	Modem	11-7	Network	Modem	11.
10	Setup for Mobile App	Setting	Off	⊅ Back		
ti ti	Access Authentication	Cam. Remote Ctrl	Disable	Setting	On	
•	Wireless LAN	Mdm1 IP Addr.		Camera Remote	Control Off	
9	AP Mode Settings	Mdm2 IP Addr		Modem1 IP Add	Iress	
	ST Mode Settings	Mdm2 Subnet		Modem1 Subne	t Mask	
	Wired LAN			Modem2 IP Add	Iress	
Ð	Modem			Modem2 Subne	t Mask	
)	Network Client Mode					

2 Display the function selection screen, select the video output and wireless LAN functions to use simultaneously with the modem, and press the Next button.

04 (0	01/0	simultaneously with the modem.	I VIDEO OUT Wireless LAN	Off Off	Off Off	On Off	Off AP Mode	Off ST Mode	
		tion to use simu	HDMI	Off	On	Off	Off	Off	
	Vlodem	Select a func	SDI	🔹 On	Off	Off	Off	Off	

Note

When using a network, there may be restrictions on the video output and wireless LAN settings that can be used. Use this screen to select the functions to enable for use.

A screen appears showing the settings, other than video output and wireless LAN settings, that will be changed.

3 Press the OK button to change the settings and enable the modem.



When the modem is connected, the 3G/4G icon (ﷺ) appears on the LCD panel.

When USB tethering is enabled and connected to the smartphone, the tethering icon (\underline{W}) appears on the LCD panel.

4 ⁶ ll	<u>(</u>)		dc IN12.0 V
MF ∞m 🖏			3840×2160
Z2			59.94P
NO GPS SIGNAL			XAVC-L
((地))) GFF			
			STD5
ATW) 5600 K	Low Light	AE	
TCC		1/60	

If you experience any difficulty, see "13.1.1. 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 "Network and video output combinations" section in "Output Formats and Limitations" in the Appendix in the PXW-Z280/Z190 Operating Instructions.

Network	11 Wireless LAN	11-2	Network	/Wireless LA	N
➔ Back	Setting	Off	⊅ Back		Access Point Mode
Access Authentica	ation WPS		Setting		Station Mode
Wireless LAN			WPS		Off
AP Mode Settings	MAC Address		NFC		
ST Mode Settings			MAC Address		
Wired LAN					
Modem					
Network Client Mo	ode				

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

Network 11	ST Mode Settings	11-4	Network	ST Mode	Settings	11
 D Back Access Authentication Wireless LAN AP Mode Settings ST Mode Settings Wired LAN 	Cam. Remote Ctrl Connected Net No Scan Networks Manual Register	Disable ot Conn		ontrol k	Disable Not Connected Execute Cancel	
Modem Network Client Mode						

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

-)	Stby	DC IN 11.9
Scan Networks		
⊅ Back		
SSID	Status S	
Planex_24-CEC	a 2.4G	a
Planex_5-CEC	ີ 5G	a '
Planex_24-CEC_outside	a) 2.4G	8
Planex_5-CEC_outside	ີ 5G	8
washi-fi_2.4g	a) 2.4G	8
Sky-WA-2.4G	a) 2.4G	8
Buffalo-CEC-local	a 2.4G	8

3 Select an SSID to connect.

The destination connection setup screen appears.

	LAOLOY	0
ST Mode Settings / So	an Networks	
SSID	Planex_24-CEC	
Security	WPA	
Password		
DHCP	On	
IP Address	192.168.1.50	
Subnet Mask		
Gateway	192.168.1.1	
	Cancel Co	onnect

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

ST Mode Settings / Scan	Networks
DHCP	On
IP Address	
Subnet Mask	
Gateway	
DNS Auto	On
Primary DNS Server	
Secondary DNS Server	

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

	Ľ Stby		142 min
AF 😫 2.1m			3840×2160
Z6			29.97P
NO GPS SIGNAL			XAVC-L
			etDE
			3105
С с			
LA 5 min			
	174 0001		
ATW 5900K	Low Light		
	E6 8 H: 184P	1/30	1 ///////

If you experience any difficulty, see "13.1.2. 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.

Camera Remote Control Disable Connected Network Not Connected Scan Networks
Connected Network Not Connected Scan Networks
Scan Networks
Manual Register

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

ST Mode Settings / Manu	al Register
DHCP	On
IP Address	
Subnet Mask	
Gateway	
DNS Auto	On
Primary DNS Server	
Secondary DNS Server	

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

	L'A Stby		///// 142 min	
AF 😫 2.1m			3840×2160	
Z6			29.97P	
SIGNAL stillion			XAVC-L	
			STD5	
[*] 5 min				
	174 0001			
ATW) 5900 K	Low Light			
TCG 00:00:00.00	F6.8 H: 18dB	1/30	1 IIIIIIIIiiiiiiiii	

If you experience any difficulty, see "13.1.2. Wireless LAN" in the Troubleshooting section.

5.3.2.2. Wireless LAN Access Point mode settings

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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.

■ Network	Wireless LAN	11-2	Network	/Wireless L	AN	11-3
ว Back			➔ Back		Access Point Mo	ode
Setting	Off		Setting		Station Mode	
WPS			WPS		Off	
NFC			NFC			
MAC Address			MAC Address			

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

Network AP Mode	e Settings	11-3	Network	AP Mode Settings	11-3
➔ Back			➔ Back		
Channel	Auto		Channel	Auto	
Camera SSID & Password	DIRECT-kkP0:	and the second second	Camera SSID		
Regenerate Password			Regenera DIRI	ECT-kkP0:PXW-Z280V_1000174	
IP Address	192.168.122.1		IP Addre Pass	word:	
Subnet Mask	255.255.0.0		Subnet N RQ5	59G1D5 OK	

2 Check the SSID and password.

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

AP	Ľ <mark>Stby</mark>		150 min
AF 😫 2.1m			3840×2160
Z6			29.97P
NO GPS SIGNAL			XAVC-L
			STD5
[]A 5 min			
	174_0001		
АТW) 5900 к	Low Light		
тсд 00:00:00.00	F6.8 H: 18dB	1/30	1

After connecting to a camcorder, you can access the web server of the camcorder using a web browser. For details, refer to the "Displaying the Web Remote Control" section in "Using Web Remote Control" in the "Shooting" chapter in the PXW-Z280/Z190 Operating Instructions.

Note

You can find the user name and password in Network > Access Authentication > Show Settings.

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

E Camera (Toos 00:00:14.2		Clip 061_0 System Fr Picture Siz	Conne 005 equency 59.94P e 3840 x 2160	La 87min	DC IN 11.9V
	Assign	Main	Playback	Cursor	, ['p 999min	
		ND 1 CLEAR	/41/8	1/16 1/32	1/64	1/128
	•	Iris 1 F1.9	.92.0	4 <u>.0 8</u> .	°.	16 CLOSE
Lo	ck 🔫	Focus 11m	Near	< >		Far
		Zoom O	Wide	< >		Tele
	-ř					

5.3.3. Wired LAN

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

Note

Г

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 "Network and video output combinations" section in "Output Formats and Limitations" in the Appendix in the PXW-Z280/Z190 Operating Instructions.

Network 11	Wired LAN	11-5	Network Wired	LAN 11-5
⊅ Back	Setting	Off	➔ Back	
Access Authentication	Cam. Remote Ctrl		Setting	On
Wireless LAN	Detail Settings		Camera Remote Control	Off
AP Mode Settings			Detail Settings	
ST Mode Settings				
Wired LAN				
Modem				
Network Client Mode				

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.

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공국	[ˈ <mark>ˈ</mark> stł	ру	dc in 11.9 v	공공	[ˈ <mark>a St</mark> b	У	DC IN 11.9
Network	/Wired L/	AN	11-5	Network	/Wired LA	N N	11-5
ว Back				⊅ Back			
Setting		On		Setting		On	
Camera Remote	e Control	Disable		Camera Remot	e Control	Enable	
Detail Settings				Detail Settings		Disable	

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

Setting On	
0	In .
Camera Remote Control Dis	isable
Detail Settings	

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.

	tail Sattings	11.5
		11-5
DHCP	On	
IP Address	192.168.2.50	
Subnet Mask		
Gateway	192.168.2.1	
DNS Auto	On	
Primary DNS Server		
Secondary DNS Serve		
	Cancel	Set

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

Wired LAN	Detail Settings	11-5
DHCP	On	
IP Address		
Subnet Mask		
Gateway		
DNS Auto	On	
Primary DNS Server		
Secondary DNS Serve	er 0.0.0.0	
	Cancel	Set

When the connection is successful, the LAN icon appears.

<mark>융</mark>	ĽkStby		1 44 min
AF 😫 2.1m			3840×2160
Z6			29.97P
NO GPS SIGNAL			XAVC-L
			STD5
[¹] _A 5 min			
	174_0001		
АТW) 5900 к	Low Light		
тсд 00:00:00.00	F6.8 H: 18dB	1/30	1

If you experience any difficulty, see "13.1.3. Wired LAN" in the Troubleshooting section.

5.3.4. Connection via Smartphone (PXW-Z280 only)

You can configure network settings from a smartphone by installing the C3P App on the smartphone. Follow the on-screen guidance in the C3P App to configure settings.

1 Launch the C3P App on the smartphone and select Network > Setup for Mobile App > Setup to start the camcorder connection guidance.

		dc in 11.9 v		DC
Network	11 Setup for Mobile Ap	11-1 B Network	Setup for Mobile App	
 ■ ⊃ Back	Setup	⊅ Back		
getup for Mobile	Арр	Setup		
Access Authentie	cation			
Wireless LAN				
AP Mode Setting	js			
ST Mode Setting				
Wired LAN				
Modem				

2 Display the function selection screen, select the video output and wireless LAN functions to use simultaneously with the modem, and press the Next button.

Setup for M	obile App		01/02
Select a fun	nction to use simu	ultaneously with t	he modem.
SDI	HDMI	VIDEO OUT	Wireless LAN
On	Off	Off	Off
Off	On	Off	Off
Off	Off	On	Off
Off	Off	Off	AP Mode
Off	Off	Off	ST Mode
Off	Off	Off	Off

Note

When using a network, there may be restrictions on the video output and wireless LAN settings that can be used. Use this screen to select the functions to enable for use.

A screen appears showing the settings, other than video output and wireless LAN settings, that will be changed.

3 Press the OK button to change the settings and enable the modem.

[1]	dc in 11.9 v
Setup for Mobile App	02/02
Changes the following settings of the network	menu.
- Modem > Setting : On	
- Modem > Camera Remote Control : On	
Sets the "Access Authentication" password.	
Generates the "Network Public Key".	
Cano	cel OK

Note

An access authentication password and network public key are required to connect the C3P App to the camcorder. If a password has not been configured or the public key has not been generated, they will be generated automatically.

The following screen appears.

dcin11.9 v
Setup for Mobile App
Changing>>

Note

Recording and playback operations are not possible while the settings are being changed.

When the configuration is completed, the 2D code, user name, password, and camcorder serial number are displayed.

Note

For security, take care that the password and QR code are not revealed to unintended third parties.



- **4** Scan the 2D code using the C3P App installed on a smartphone, or enter the displayed user name and password to connect to the camcorder.
- **5** Send a network configuration file from the C3P App to the camcorder.

A file received confirmation message appears on the camcorder screen.

6 Press the OK button to load the configuration file and apply the settings.

Network File Load File?	received.		
	Cancel	ОК	

5.3.5. Network 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 Content Browser Mobile remote control.
ON	ON	OFF	OFF	Dual Link: Uses Modem1 and Modem2. Single Link: Uses Modem1.
ON	OFF	OFF	ON	Dual Link cannot be used. Single Link: Uses Modem1. Wireless LAN can be used for Content Browser Mobile remote control.
OFF	ON	OFF	ON	Dual Link cannot be used. Single Link: Uses Modem2. Wireless LAN can be used for Content Browser Mobile remote control.
ON	OFF	OFF	OFF	Dual Link cannot be used. Single Link: Uses Modem1.

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

5.3.5.1. 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 (star	tup) order		Operation
	1	2	3	
1	Modem 1	Modem 2	-	If the segment IP address ranges overlap between
	Modem 2	Modem 1		modems, an address conflict error is displayed.
2	AP mode	Modem 1	Modem 2	① If the segment IP address ranges overlap
		Modem 2	Modem 1	address is automatically changed to another
3	Modem 1	AP mode	Modem 2	segment and an AP mode address change
	Modem 2		Modem 1	 (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.
4	Modem 1	Modem 2	AP mode	① If the segment IP address ranges overlap
	Modem 2	Modem 1		 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.
5	ST mode	Modem 1	Modem 2	(1) If there is an IP conflict between the modem and
	(Auto/Manual)	Modem 2	Modem 1	and the user will be prompted to change it.
6	Modem 1	ST mode	Modem 2	② If the segment IP address ranges overlap
	Modem 2	(Auto/Manual)	Modem 1	displayed.
7	Modem 1	Modem 2	ST mode	③ If the IP address of the ST is included in the
	Modem 2	Modem 1	(Auto/Manual)	displayed.
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
9	Wired LAN (Auto/Manual)	AP mode	-	AP mode address change message is displayed.
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
11	Wired LAN (Auto/Manual)	ST mode (Auto/Manual)	-	user is prompted to change it.

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 Settings1 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 Stby	1 81 min	5 ⁷ 5	Existby NCX	177 78 m
 Network Access Authentication Wireless LAN AP Mode Settings ST Mode Settings Wired LAN Modem Network Client Mode File Transfer 	Network Client Mode 11-7 Setting Off NCM Settings Sel NCM Set NCM Settings1 NCM Settings2 NCM Settings3	 Betwork Back Setting NCM Settings Select NCM Settings1 NCM Settings2 NCM Settings3 	Network Client Mode On NCM Settings 1 NCM Settings 2 NCM Settings 3	11-7

The registration dialog appears.

W Client Mode / NCM S	ettings1	11-7	ent Mode / NCM S	Settings1	11-7
Display Name	NCM Settings 1	User Na	me		
CCM Address		Passwor	ď		
CCM Port	8443	CCM Ce	rtificate	None	
User Name		CCM Ce	rtificate Status	Default	
Password		Camera	Control	Disable	
CCM Certificate	None	Camera	Setting	Off	
CCM Certificate Status	Default	Reset			
	Cancel So	et all a		Cancel	Set

- 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 C3 Portal 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.

⁴⁶ II	ĽaStby	1 52 min
AF 😫 3.0 m		3840×2160
Z83		59.94P
×		XAVC-L
		STD5
[¹] ₄ 50 min		
	174_0001	
W:A 3200ĸ	Low Light	
TCG 00:00:00.00 ND1/	4 F6.8 L: OdB 1/6	50 ¹

If you experience any difficulty, see "13.1.1. 4G/LTE USB Modem" in the Troubleshooting section.

A signal strength unknown icon ($\underline{\mathfrak{M}}$) is displayed if the signal strength from the modem cannot be determined.

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 "13.1.2. Wireless LAN" in the Troubleshooting section.

.	[<code><code><code>\Stby</code></code></code>		1 42 mi
AF 😫 2.1m			3840×2160
Z6			29.97F
NO GPS SIGNAL			XAVC-L
			STD
[]A 5 min			
	174_0001		
ATW 5900 K	Low Light		
тсд 00:00:00.00	F6.8 H: 18dB	1/30	1

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 "13.1.3. Wired LAN" in the Troubleshooting section.



5.5.4. Connection via Smartphone (PXW-Z280 only)

When connected using the C3P App, the network connection is managed by the C3P App. Check the connection status on the C3P App screen.

5.6. Network Client Mode Communication Test

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

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

Note

NCM Settings1 is used as an example.

Network Network	ork Client Mode	11-7
➔ Back		
Setting	On	
NCM Settings Select	NCM Settings 1	
NCM Settings1	NCM Settings 1	
NCM Settings2	NCM Settings 2	
NCM Settings3	NCM Settings 3	
Ŭ		

5.6.1. C3 Portal

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

• Back	
Setting	On
NCM Settings Select	Off
NCM Settings1	NCM Settings 1
NCM Settings2	NCM Settings 2
NCM Settings3	NCM Settings 3

2 Start communication with the CCM of C3 Portal.

When C3 Portal is accessed for the first time from a device, you must activate the device after connecting to the CCM of C3 Portal.

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 C3 Portal.

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

	LaStby	NCM	¶]131 min
AF 😫 2.0 m			3840×2160
Z7			29.97P
NO GPS SIGNAL			XAVC-L
			STD5
🕻 🖌 5 min			
	174_0001		
ATW 5600 K			
тсд 00:00:00.00	F6.8 H: 18dB	1/40	1 11111

If you experience any difficulty, see "13.2. 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.

➔ Back	
Setting	On
NCM Settings Select	Off
NCM Settings1	NCM Settings 1
NCM Settings2	NCM Settings 2
NCM Settings3	NCM Settings 3

2 Start communication with the CCM of Network RX Station.

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

	LASIDY		
AF 🖀 2.0 m			3840×2160
Ζ1			29.97P
SIGNAL			XAVC-L
			STD5
			2.12.23
[*]_ 5 min			
	174_0001		- 16 C - 26 C
ATW) 5600 K			
TCG 00'00'00 00	F6.8 H: 18dB	1/40	1

If you experience any difficulty, see *"13.2. Network Client Mode"* in the Troubleshooting section.

Chapter 6 Setup for "Live Streaming"

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.

	L AStby	NCM STRM	4//// 131 min
AF 😫 2.0 m			3840×2160
Z7			29.97F
IO GPS IIGNAL			XAVC-L
			STD5
🖞 5 min			
	174_0001		
атw) 5600 к			
TCG 00:00:00.00	F6.8 H: 18dB	1/40	1 IIIII

If you experience any difficulty, see "13.3.1. Live Streaming" in the Troubleshooting section.



Chapter Setup for "Intercom Operation"

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 \mathfrak{A} icon appears on the camcorder LCD screen.

a ^r a	ĽkStby	NCM	4
AF 😫 2.0 m		ญุ≠	3840×2160
Z7			29.97P
SIGNAL			XAVC-L
10 LON			STD5
[1]. 5 min			
	174_0001		
ATW 5600 K			
TCG 00:00:00.00	F6.8 H: 18dB	1/40	1 IIIII

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



Setup for "Camera Remote Control"

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 *"13.3.1. 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 "13.3.2. Camera Remote Control" in the Troubleshooting section.



Setup for "File Naming using Planning Metadata"

9.1. Camcorder Settings

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

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



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

[AS	tby DCIN1	1.9 v	Ľk Stby
_ User	LCD/VF	5 LCD/VF	5 Display On/Off
🖬 Camera	🗅 Back	LCD Setting	Network Status
	LCD Setting	VF Setting	File Transfer
	VF Setting	Peaking	Rec/Play Status
♪ Audio	Peaking	He Marker	I ally
G→ Video	Marker	🚨 Zebra	Battery Bemain
LCD/VF	Zebra	🔲 🖾 Gamma Dis	plav Assist Focus Mode
00:00 TC/UB	Gamma Display Assis	t Display On	Off Focus Position
E Recording	Display On/Off		6 Focus Macro
Ľ⊾s	tby	1.9 v	Eaco Notaction E
Ľks ■LCD/VF /Display	itby DCIN1 y On/Off 5-1	1.9 v 7	Ease Notaction E
Ľ⊾S ■LCD/VF /Display Gamma Display Assist	tby DCIN1 y On/Off 5-1	1.9 v	Eaco Notaction F
Ľks ■LCD/VF Display Gamma Display Assist Proxy Status	tby محافظ y On/Off 5-1 On On	1.9 v 7	Eaco Detection E
Ľ⊾S ■LCD/VF Display Gamma Display Assist Proxy Status Focus Assist Indicator	tby محافظ y On/Off 5-1 On On Off	1.9 v 7	Eace Detection E
C⊾S ■ LCD/VF /Display Gamma Display Assist Proxy Status Focus Assist Indicator Focus Assist Area	tby محالما کې y On/Off 5-1 On Off Off	1.9 v 7	Eace Detection F
ĽkS ■LCD/VF /Display Gamma Display Assist Proxy Status Focus Assist Indicator Focus Assist Area Media Status	itby DCIN1 y On/Off 5-1 On Off Off Off On	1.9 v 7	Eace Detection F
ĽkS ■LCD/VF Display Gamma Display Assist Proxy Status Focus Assist Indicator Focus Assist Area Media Status Video Signal Monitor	y On/Off 5- On On Off Off Off On Off	1.9 v 7	Eace Detection F
ĽkS ■LCD/VF Display Gamma Display Assist Proxy Status Focus Assist Indicator Focus Assist Area Media Status Video Signal Monitor Clip Name	itby DCIN1 y On/Off 5- On On Off Off On Off On Off	1.9 v 7	Eace Detection F

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.

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

Chapter 10 Setup for "Proxy Auto Upload"

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 or Chunk. When Auto Upload (Proxy) is set to On, the uploading of proxy files to a destination server occurs after recording ends.

When Auto Upload (Proxy) is set to Chunk, the uploading of proxy files to a destination server occurs in chunks during recording.

Network 1	File Transfer	11-8	Network	File Transf	fer	11-8
Wireless LAN	A.Upload (Proxy)	Off	➔ Back			
AP Mode Settings	D.Upload Server	NCM: RX	Auto Upload (Pro	xy)	On	
ST Mode Settings	Clear Comp Jobs		Auto Upload Serv	er	NCM: RX Server	
Wired LAN	View Job List		Clear Completed	Jobs		
Modem	Server(NCM)		Clear All Jobs			
Network Client Mode	Server Settings1		Server Settings(N	CM)	NCM: RX Server	
File Transfer	Server Settings2		Server Settings1		Server Settings1	
Streaming	Server Settings3		Server Settings2		Server Settings2	

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.
 - ① Configure [Display Name], [Host Name], [User Name], [Password], and other settings as described in the "Uploading Files" section in the "Shooting" chapter in the PXW-Z280/Z190 Operating Instructions.
 - (2) If using FTPS, load the root certificate for the FTP server into the PXW-Z280/Z190 and change the name of the root certificate to "certification.pem".
 - Set [Passive Mode] to "On".
 However, set to "Off" if the corresponding setting on the FTP server is set to OFF.

■ File Transfer / Se	erver Settings1	11-8	File Transfer	Settings1
Display Name	Server Settings1		Password	
Service	FTP		Passive Mode	Off
Host Name			Destination Directory	
Port	21		Using Secure Protocol	Off
User Name			Root Certificate	None
Password			Root Certificate Status	No Certificate
Passive Mode	Off		Reset	
	Cancel	Set		Cancel Set

2 Select Network > File Transfer > Default Upload Server in the setup menu, and set Server1 (item name in the list box is Display Name).

	[<code>\Stb</code>	У	DC IN 11.9
Network	File Trans	sfer	11-8
⊅ Back			
Auto Upload (Pro	oxy)	NCM: RX Server	
Default Upload Se	erver	Server Settings1	
Clear Completed	Jobs	Server Settings2	
Clear All Jobs		Server Settings3	
View Job List			
Server Settings(N	ICM)	NCM: RX Server	
Server Settings1		Server Settings1	

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.

I Clip	Ľà	DC IN 12.0V	t⊒Clip	Ľà	DC IN 12.0
Thumbnail 8	Transfer Clip (Pr	oxy) 8-9	🛚 Thumbnail	Transfer Clip (Proxy)	8-
Set Clip Flag	Select Clip		⊅ Back		
Lock/Unlock Clip	All Clips		Select Clip		
Delete Clip			All Clips		
Copy Clip					
Copy Sub Clip					
Transfer Clip					
Transfer Clip (Proxy)					
Set Index Picture					

2 Select a clip, and start the file transfer.

Г

Transfer Clip(Prox	(y) <menu> Exect</menu>	ute []A O	001/0002 DC IN12.0V
TCR 00:00:00:00	TCR 00:00:05:10		
061_0001 XAVC-L 3	3840×2160 59.94P		2020/11/25 14:41 Dur 00:00:05:10

3 Select Network > File Transfer > View Job List in the setup menu.

"	[ˈ <code>\Stb</code>	/	DC IN 11.9
Network	File Trans	sfer	11-8
➔ Back			
Auto Upload (P	roxy)	Off	
Default Upload	Server	Server Settings1	
Clear Complete	d Jobs		
Clear All Jobs			
View Job List			
Server Settings	(NCM)	NCM: RX Server	
Server Settings'	1	Server Settings1	

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 Access the camcorder using a web browser, and open the Slot SD/MS page.

■ SD Card	Tran	ster Job List 100%	0 File
			Remain: 0 GB
Transfer to:	Му	/ FTP	
File Name	Duration	Format	
AtsugiFireworks_00011S03	00:00:03:25	AVC_Proxy_1280_720	
AtsugiFireworks_00012S03	00:00:04:05	AVC_Proxy_1280_720	
AtsugiFireworks_00013S03	00:00:05:25	AVC_Proxy_1280_720	
AtsugiFireworks_00014S03	00:00:05:25	AVC_Proxy_1280_720	
CarCrash_00001S03	00.00.04.25	AVC_Proxy_1280_720	
CarCrash_00002S03	00:00:06:00	AVC_Proxy_1280_720	
CarCrash_00003S03	00:00:05:25	AVC_Proxy_1280_720	
CarCrash_00004S03	00:00:02:10	AVC_Proxy_1280_720	
CarCrash_00005S03	00.00.02.11	AVC_Proxy_1280_720	
12345678901234567890123	00:00:04:15	AVC_Proxy_1920_1080	

2 Select clips and click the Transfer button on the web page.

The Transfer Confirm dialog appears.

				Pomain: 0 CP
Transfer Con	ıfirm			Kenant 0 00
Upload Set	rver:	* My FTP [F	TP] 🗸	
Atsue Directory:		MyFolder		
Alsu	171	ransfer	Cancel	
Atsugil-ireworks_00013	1503 00.00.05:2	5 AVC_Pro	xy_1280_720	
AtsugiFireworks_00014	IS03 00:00:05:2	5 AVC_Pro	xy_1280_720	
CarCrash_00001803	00:00:04:2	5 AVC_Pro	xy_1280_720	
CarCrash_00002S03	00:00:06:0	0 AVC_Pro	xy_1280_720	

- **3** Select Upload Server, enter the destination directory, and click the Transfer button.
- **4** Display the Job List screen.

Total: Remain	00% Status: 1/1 time: Omin.			
Transfe	r data rate: 0Mbps			-
Source	File Name	Destination	Status	
		My FTP [FTP]		

Status: "Waiting" indicates that file transfer is pending. If a problem arises, an error message is displayed. "Completed" indicates that the transfer was successful. Chapter 11 Setup for "Upload to FTP Server"

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".

Chapter 12 Setup for "RTMP/RTMPS Streaming"

12.1. Camcorder Settings

Because of some system restrictions, "RTMP/RTMPS 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

-When Recording > Simul Rec > Setting is set to On in the setup menu

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

Configure the streaming connection destination server. This section describes the configuration using [RTMP Settings1] as an example.

1 Select Network > RTMP/RTMPS > RTMP Settings1 in the setup menu.

<i>"</i>	ĽàStby	dc in 11.9 v				DC IN 12.1
LCD/VF	Network	11		Network 11	RTMP/RTMPS	11-11
	➔ Back		00:00	ST Mode Settings	Setting	Off
T Pooording	Access Auth	nentication	H-H	Wired LAN	RTMP Set. Sel.	RTMP Se
	Wireless LA	N	⊨ ●	Modem	RTMP Settings1	
Ihumbhail	AP Mode Se	ttings	83	Network Client Mode	RTMP Settings2	
■ Media	ST Mode Set	ttings	۲.	File Transfer	Replace Def Cert	
File	Wired LAN	° I		Streaming	Reset Def. Cert.	
Network	Modem			RTMP/RTMPS	Def. Cert. Status	Preinstall
System	Network Clie	ent Mode	0	Network Reset		

2 Configure Display Name, Streaming Format, Destination URL, and Stream Name.

When finished, select the Set button on the menu screen and press the SEL/SET dial or SET button to apply the settings.

M L'AS	tby	DC IN 12.0
	Settings1	11-10
Display Name	RTMP Settings1	
Streaming Format	1920x1080 9M	
Destination URL		
Stream Name		
RTMPS Certificate	None	
RTMPS Certificate Status	Default	
Load Utility SD/MS	None	
	Cancel	Set

For streaming using RTMPS, enter a URL that begins with "rtmps://" In Destination URL. A server certificate is required to use RTMPS.

① Save the server certificate with the file name 'RTMPS_certification.pem" onto a memory card. Insert the memory card containing the certificate into the Utility SD/MS slot, and select RTMPS Certificate > Load in the menu.

Note

Place the "RTMPS_certification.pem" file in the root directory of the memory card.

- ② Select the Set button on the menu screen and press the SEL/SET dial or SET button to load the certificate.
- **3** Select Network > RTMP/RTMPS > RTMP Settings Select > RTMP Settings1 in the setup menu.
- **4** Select Network > RTMP/RTMPS > Setting in the setup menu to start streaming.

You can also configure the camcorder by creating a settings file using the Streaming Setting Transfer application on a computer and loading the Display Name, Streaming Format, Destination URL, and Stream Name settings from the file.

A public key for encryption is required when creating a settings file on a computer.

The Streaming Setting Transfer application is software used to create a settings file for RTMP/RTMPS. For details, visit the Sony Professional products web site.

1 Select File > Network Public Key > Key Export in the setup menu to save the public key on a memory card.



2 Create the settings file on a computer.

A settings file can be created simply using the Streaming Setting Transfer application. For details, refer to Help Guide for the Streaming Setting Transfer application.

- **3** Load the settings file into the camcorder.
 - ① Select Network > RTMP/RTMPS > RTMP Settings1 in the setup menu.

tings1 11-10
1920x1080 9M
None
Default
Load
Cancel Set

② Insert the memory card containing the settings file into the Utility SD/MS slot, and select Load Utility SD/MS > Load in the menu. Select the Set button on the menu screen and press the SEL/SET dial or SET button to load the settings.

L'AStr	ру дсім11.
	ettings1 11-10
Streaming Format	1920x1080 9M
Destination URL	
Stream Name	
RTMPS Certificate	None
RTMPS Certificate Status	Default
Load Utility SD/MS	Load
Reset	
	Cancel Set

12.2. RTMP/RTMPS Server Communication Test

1 Set Network > RTMP/RTMPS > Setting in the setup menu to On to start streaming.



The RTMP/RTMPS streaming "RTMP STRM" icon appears when streaming starts.

"	Ĺ'nStby	RTMP STRM	DCIN11.9 V	
AF 😫 2.0 m			3840×2160	
Z7			29.97P	
NO GPS SIGNAL ((山))			XAVC-L	
			STD5	
[]] 5 min				
	174 0001			
ATW) 5600 K				
TCG 00:00:00.00	F6.8 H: 18dB	1/40	1 IIIII	



13.1. Network

13.1.1. 4G/LTE USB Modem

Problem: Cannot connect to network via modem					
Display or Message	Reason & Solution				
Modem connection error icon is displayed	Cannot connect to carrier communication network. Check that there is a SIM in the modem (see <i>"3.1.1. 4G/LTE USB Modem"</i>). Check that there is a carrier radio wave signal.				
Modem not connected to network icon is displayed	During startup. Searching for carrier communication network. Unable to connect to network.				
Modem icon is not displayed	Cannot detect USB modem device. Check whether the modem is a supported model or not (see <i>"3.1.1. 4G/LTE USB Modem"</i>).				
	Modem is not working. Check that Network > Modem > Setting in the setup menu is set to On (see <i>"3.1.1. 4G/ LTE USB Modem"</i>).				
	Network status icon indicator is not displayed. Check that LCD/VF > Display On/Off > Network Status in the setup menu is set to On.				
Network status indicator icon is displayed	The network is connected properly.				
Problem: Cannot access information	tion from Network > Modem in the setup menu				
Display or Message	Reason & Solution				
Network > Modem > Modem1 Device Name is set to "" in the setup menu. Network > Modem > Modem2 Device Name is set to "" in the	Cannot detect USB modem device. Check whether the modem is a supported model or not. Check whether the modem is working properly or not (see <i>"3.1.1. 4G/LTE USB Modem"</i>). Check that the USB connector of the camcorder works with another USB device.				
setup menu.	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 "Network and video output combinations" section in "Output Formats and Limitations" in the Appendix in the PXW-Z280/Z190 Operating Instructions.				

13.1.2. Wireless LAN

Problem: Cannot connect to network via wireless LAN				
Display or Message	Reason & Solution			
Only lower left dot of wireless LAN icon is displayed	SSID or Key (Password) is incorrect. (See <i>"5.3.2. Wireless LAN"</i>).			
M	Searching for an access point. Check the wireless LAN 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	Wireless LAN 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 "Network and video output combinations" section in "Output Formats and Limitations" in the Appendix in the PXW-Z280/Z190 Operating Instructions.			

13.1.3. Wired LAN

Problem: Cannot connect to network via wired LAN				
Display or Message	Reason & Solution			
LAN× 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 "Network and video output combinations" section in "Output Formats and Limitations" in the Appendix in the PXW-Z280/Z190 Operating Instructions.			

13.2. Network Client Mode

Problem: Cannot connect to CCM	1
Display or Message	Reason & Solution
NCM icon is displayed	Camcorder has not been activated from the CCM UI of C3 Portal. 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 <i>"5.4. Network Client Mode Settings"</i>). Also, check that the DNS server setting is correct (see <i>"13.1. Network"</i>).
	Network is not working properly. Check the network settings (see <i>"13.1. Network"</i>).
	Camcorder version does not match with CCM. Check the camcorder firmware version.
NCM× icon is displayed. NCX 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.	Date is incorrect (see "5.4. Network Client Mode Settings").
MCS Message "Certificate is not yet valid" is displayed on the NW Client Mode Status screen.	
NCM× icon is displayed. NCX 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 <i>"5.4. Network Client Mode Settings"</i>).
NCM× icon is displayed. NCX 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 <i>"13.1. Network"</i>).
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.

13.3. Use Cases

13.3.1. Live Streaming

Problem: Cannot start streaming	
Display or Message	Reason & Solution
STRM icon is not displayed	 Streaming cannot start in the following cases. 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 bit	rate for QoS streaming
Display or Message	Reason & Solution
	APN setting may be incorrect after changing a SIM card. Check the APN setting using a computer.
	Carrier network environment is not good.

13.3.2. Camera Remote Control

Problem: Cannot control zoom/iris etc.			
Display or Message	Reason & Solution		
Zoom/iris control from CCM UI is disabled	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.		
Zoom/iris control of CCM UI is enabled but does not operate.	The SERVO/MANUAL switch of the lens is set MANUAL. Check the lens control switch.		

13.3.3. Intercom Operation

Problem: Cannot use the intercom		
Display or Message	Reason & Solution	
Intercom not available icon is displayed.	 The intercom function is not available in the following cases because of some system restrictions. 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 	

13.3.4. File Naming using Planning Metadata

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

13.3.5. 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 <i>"6 Setup for "Live Streaming""</i>).		
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.	FTP Server Settings are incorrect. Check the FTP server settings (see <i>"10.2. FTP Server Settings"</i>).		
"Dest. Conn. Err." is displayed in Job List status of View Job List screen (Network > File Transfer > View Job List)	Network or FTP server is not working. Check the network environment and FTP server (see <i>"10.3. FTP Server Communication Test"</i>).		
"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 <i>"10.2. FTP Server Settings"</i>).		
"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 <i>"10.2. FTP Server Settings"</i>).		
"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. SD card is not loaded in the SD card slot. Check that an SD card is loaded in the SD card slot.		
"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)			
Problem: Cannot load certificate file			
Display or Message	Reason & Solution		
"Invalid certification file." is displayed in the camcorder web menu	The certificate being loaded is invalid. Check the certificate file (see <i>"3.3. FTP Server"</i>).		
"Certification file not found." is displayed in the camcorder web menu	Check that the name of the certificate file is correct (see "3.3. FTP Server").		

13.3.6. 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 <i>"6 Setup for "Live Streaming""</i>).		
"ET04-0406" is displayed in Job List status of CCM UI.	FTP server settings are incorrect Check the FTP server settings (see <i>"10.2. FTP Server Settings"</i>).		
Job List status of View Job List screen (Network > File Transfer > View Job List)	Network or FTP server is not working. Check the network environment and FTP server (see <i>"10.3. FTP Server Communication Test"</i>).		
"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 <i>"10.2. FTP Server Settings"</i>).		
"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 <i>"10.2. FTP Server Settings"</i>).		
"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 file	s		
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 <i>"9.1. Camcorder Settings"</i>).		
"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 <i>"10.2. FTP Server Settings"</i>).		
	Network or FTP server does not work. Check the network environment and FTP server (see <i>"10.3. FTP Server Communication Test"</i>).		
"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 <i>"10.2. FTP Server Settings"</i>).		
"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 <i>"10.2. FTP Server Settings"</i>).		
"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.		

13.3.7. RTMP/RTMPS Streaming

Problem: Cannot start streaming			
Display or Message	Reason & Solution		
RTMP STRM icon is not displayed	Network > RTMP/RTMPS > Setting in the setup menu is set to Off.		
RTMP/RTMPS streaming connection icon is displayed	Connecting to the RTMP/RTMPS server.		
RTMP STRM			
RTMP/RTMPS streaming error icon is displayed	An error occurred with the connection to the RTMP/RTMPS server. An error message is displayed in Network Mode Status on the NCM/Streaming Status screen. For details about the message, refer to "Network Mode Status" in the "Screen Display" section in the "Overview" chapter in the PXW-Z280/Z190 Operating Instructions.		
Problem: Network > RTMP/RTMPS > Setting in the setup menu cannot be set to On			
Display or Message	Reason & Solution		
Streaming icon is displayed STRM	RTMP/RTMPS cannot be used while streaming with network client mode connection. Set both Network > Streaming > Setting and Network > Network Client Mode > Setting in the setup menu to Off.		
NCM icon is displayed			



14.1. Certificate Format for FTPS

- File format (encoding)
- PEMFile name
- "certification.pem" (all lower-case letters)
- File structure
 - Root certificate only, between the following delimiters. An intermediate certificate is not included.
 ----BEGIN CERTIFICATE-----
 - (Your Root certificate)
 - -----END CERTIFICATE-----
- Revocation status verification method of certificate must be either CRL or OCSP.
 - Note that the PXW-Z190 supports only CRL.

14.2. Certificate Format for RTMPS

The PXW-Z280/Z190 comes with preinstalled default certificates which allows the camcorder to connect to general-use sites without modification.

To connect to a site that is not included in the default certificates or to connect to a site that is included in the default certificates but the certificate has expired, a new certificate must be installed in the camcorder.

14.2.1. Installing an Individual Certificate

Load a certificate in the following format using RTMPS Certificate for RTMP Settings1 to 3.

- File format (encoding)
- PEM
- File name
 - "RTMPS_certification.pem" (all lower-case letters)
- File structure
 - Root certificate between the following delimiters.
 ----BEGIN CERTIFICATE-----
 - (Your Root certificate)
 - -----END CERTIFICATE-----
- Revocation status verification of certificate
 - "CRL" (mandatory). "OCSP" is not supported.

14.2.2. Updating Default Certificates

Download a certificate file.

- CA certificate download URL: https://curl.haxx.se/docs/caextract.html
- Certificate file name: cacert.pem

Note

If you use the above CA certificate download site, first read the *"14.3. Streaming using the RTMPS Protocol"* section.

Rename the downloaded certificate file to "RTMPS_DefaultCertificates.pem" and update the default certificates using Network > RTMP/RTMPS > Replace Default Certificates in the setup menu.

14.3. Streaming using the RTMPS Protocol

A CA certificate must be installed in the camcorder in order to stream using the RTMPS protocol. It has been verified that certificate files provided by third parties that can be downloaded from the following third-party website can be installed in the camcorder to support streaming to Facebook. For details about installation, refer to the Operating Instructions.

- CA certificate download URL: https://curl.haxx.se/docs/caextract.html
- Certificate file name: cacert.pem

This information is valid as of July 30, 2021, however, this does not represent a guarantee that the information will still be valid at the time of use.

Use the website above at your own risk. Sony Corporation and its affiliated companies (hereinafter collectively referred to as "Sony") are not liable for any damages caused by your use.

Sony does not guarantee compatibility, whether express or implied, for legal or other reasons, with respect to the offerings of the website referenced above, in terms of behavior, performance, accuracy and reliability, usefulness, merchantability, and other specific purposes.

Check the conditions for use of the above-mentioned reference website offerings, and use in compliance with the terms of use.

14.4. Status Displayed on View Job List Screen

Status display	Description
Completed	Transfer completed
Transferring	Transfer in progress
Aborted	Transfer aborted
Waiting	Transfer pending
File Access Err.	File access error
Media Access Err.	Media access error
Dest. Conn. Err.	Transfer destination connection error
Dest. Server Err.	Transfer destination server error
Dest. Auth. Failed	Transfer destination authentication error
Dest. Cert. Err.	Transfer destination certificate error
D. Cert. not Valid	Transfer destination certificate not valid
D. Cert. Expired	Transfer destination certificate expired
Upload Error	Transfer destination server upload error
PASV not Support	The destination server does not support passive mode.
Chunk Trans. Err.	Chunk file transfer error
Other Error	Errors other than the above

14.5. Precautions Regarding Specifications

- Specifications are subject to change without notice.
- Always make a test recording, and verify that it was recorded successfully. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF FAILURE OF THIS UNIT OR ITS RECORDING MEDIA, OR WIRELESS NETWORK OR CONNECTION TO A WIRELESS NETWORK.
- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
- SONY WILL NOT BE LIABLE FOR CLAIMS OF ANY KIND MADE BY USERS OF THIS UNIT OR MADE BY THIRD PARTIES.
- SONY WILL NOT BE LIABLE FOR THE LOSS, REPAIR, OR REPRODUCTION OF ANY DATA RECORDED ON THE INTERNAL STORAGE SYSTEM, RECORDING MEDIA, EXTERNAL SERVER OR ANY OTHER MEDIA OR STORAGE SYSTEMS.
- SONY WILL NOT BE LIABLE FOR THE TERMINATION OR DISCONTINUATION OF ANY SERVICES RELATED TO THIS UNIT THAT MAY RESULT DUE TO CIRCUMSTANCES OF ANY KIND.

14.6. Precautions Regarding Security

- Use behind a firewall designed to be secure. Do not use networks that may connect to untrusted devices.
- The FTP protocol does not encrypt content, user names, or passwords. Where possible, use FTPS.
- SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND RESULTING FROM A FAILURE TO IMPLEMENT PROPER SECURITY MEASURES ON TRANSMISSION DEVICES, UNAVOIDABLE DATA LEAKS RESULTING FROM TRANSMISSION SPECIFICATIONS, OR SECURITY PROBLEMS OF ANY KIND.
- Depending on the operating environment, unauthorized third parties on the network may be able to access the unit. When connecting the unit to the network, be sure to confirm that the network is protected securely.
- Communication content may be unknowingly intercepted by unauthorized third parties in the vicinity of the signals. When using wireless LAN communication, implement security measures properly to protect the communication content.
- From a security standpoint, when using the unit connected with the network, it is strongly recommended to change the access limitation settings from the factory preset values. Take extra precautions when connecting to an open network. Also, it is recommended that you change the password regularly.
- Do not browse any other website in the Web browser while making settings or after making settings. Since the login status remains in the Web browser, close the Web browser when you complete the settings to prevent unauthorized third parties from using the unit or harmful programs from running.

Revision History

Date	Description	Modified by	Revision
December, 2019	1st Revision	-	1.00
January, 2021	2nd Revision	-	2.00
November, 2021	3rd Revision	-	3.00