Network Disk Recorder

(WJ-NU101/NU201/NU300/NU301)

Read Me First

1   Introduction

This document provides information on the cameras supported by software version V1.20 of the network disk recorder (WJ-NU101/NU201/NU300/NU301 series, hereinafter referred to as this unit) and notices when using other manufacture's camera.

2   Supported cameras

This unit is supported with the following camera models.

[i-PRO Co., Ltd.]

WV-S15500-F3L/F6L
/V3L/V3LK/V3LN
/V3LN1
WV-S15600-V2L/V2LN
WV-S15700-V2L/V2LK
/V2LN
WV-S22500-F3L/F6L
/V3L/V3L1/V3LG
WV-S22600-V2L/V2LG
WV-S22700-V2L/V2L1
/V2LG
WV-S25500- F3L/F6L
/V3L/V3LG/V3LN
/V3LN1
WV-S25600-V2L/V2LG
/V2LN
WV-S25700-V2L/V2LG
/V2LN/V2LN1
WV-S61300-ZY/ZYG
WV-S61301-Z1/Z2
WV-S61302-Z4
WV-S61501-Z1
WV-S65300-ZY/ZYG
WV-S65301-Z1/Z1-1
/Z1G/Z1S
WV-S65302-Z2/Z2-1
/Z2G
WV-S65340-Z2/Z2G/Z2K
/Z2N/Z2N1/Z4/Z4G
/Z4K/Z4N/Z4N1
WV-S65501-Z1/Z1G
WV-S71300-F3
WV-S71300A-F3
WV-S85402-V2L/V2L1
WV-S85702-F3L/F3L1
WV-U11300-V2
WV-U21300-V2L
WV-U61300-ZY/ZYG
WV-U61301-Z1/Z2
WV-U65300-ZY/ZYG
WV-U65301-Z1/Z1G
WV-U65302-Z2/Z2G
WV-U85402-V2L/V2L1
WV-X86530-Z2/Z2-1
WV-X86531-Z2/Z2-1
WJ-GXE100
WJ-GXE500
WV-S1111
WV-S1112
WV-S1131

WV-S1132
WV-S1136/A
WV-S1511LN/LDN
WV-S1531LN/LTN
WV-S1536L/LA/L-B
/LA-B/LN/LNA
/LN-B/LNA-B
/LNS/LNSA/LT
/LTA/LTN/LTNA
WV-S1550L
WV-S1552L
WV-S1570L
WV-S1572L
WV-S2110
WV-S2111L
WV-S2130
WV-S2131/L
WV-S2135/UX
WV-S2136/A/-B/A-B
/G/GA/G-B/GA-B
/L/LA/L-B/LA-B
/LG/LGA
/LG-B/LGA-B
WV-S2211L
WV-S2231L
WV-S2236L/LA/L-B
/LA-B/LG/LGA
/LG-B/LGA-B
WV-S2250L
WV-S2252L
WV-S2270L
WV-S2272L
WV-S2511LN
WV-S2531LN/LTN
WV-S2536L/LA/LG
/LGA/LN/LNA
/LGN/LGNA/LT
/LTA/LTN/LTNA
WV-S2550L
WV-S2552L
WV-S2570L
WV-S2572L
WV-S3111L
WV-S3131L
WV-S3511L
WV-S3531L
WV-S4150
WV-S4151
WV-S4156/A
WV-S4176/A

WV-S4550L
WV-S4551L
WV-S4556L/LA
WV-S4576L/LA
WV-S6111
WV-S6130
WV-S6131
WV-S6530N/NS
WV-S6532LN/LNS
WV-S8530N
WV-S8531N
WV-S8543/G/N
/L/LG/LN
WV-S8544/G/N
/L/LG/LN
WV-S8563L/LG/LN
WV-S8564L/LG/LN
WV-S8573L/LG/LN
WV-S8574L/LG/LN
WV-SUD638
WV-U1130/A
WV-U1132/A
WV-U1142/A
WV-U1532L/LA
WV-U1542L/LA
WV-U2130L/LA
WV-U2132L/LA
WV-U2140L/LA
WV-U2142L/LA
WV-U2530L/LA
WV-U2532L/LA
WV-U2540L/LA
WV-U2542L/LA
WV-X1551LN
WV-X1571LN
WV-X2251L
WV-X2271L
WV-X2551LN
WV-X2571LN
WV-X4170
WV-X4171
WV-X4172
WV-X4173
WV-X4571L
WV-X4573L
WV-X6511N
WV-X6531N/NS
WV-X6533LN/LNS
WV-X8570N
WV-X8571N

2.1　Notes for each model
[WJ-GXE500]
- Depending on the setting of "CH selection" for WJ-GXE500, the images may not be transmitted at the specified frame rate. Refer to the operating instructions of WJ-GXE500 for details.
- Following framerate values for WJ-GXE500(PAL) are interpreted as below.
    - 3 -> 3.1
    - 10 -> 8.3
    - 15 -> 12.5
    - 30 -> 25
- To register more than one camera connected to the same WJ-GXE500, set the same value to each camera on following settings.
    - Compression
    - Image capture size
    - Frame rate
    - Image quality

[WV-S4150, WV-S4151, WV-S4156/A, WV-S4176/A, WV-S4550L, WV-S4551L, WV-S4556L/LA, WV-S4576L/LA, WV-X4170, WV-X4171, WV-X4172, WV-X4173, WV-X4571L, WV-X4573L]
- To register these models, specify the image capture mode together.
    - (FE)　　　　　　 : <Ceiling> Fisheye
    - (DP)　　　　　　 : <Ceiling> Double Panorama
    - (P)　　　　　　　 : <Wall> Panorama
    - (4PTZ)　　　　　 : <Ceiling> Quad PTZ
    - (1PTZ)　　　　　 : <Ceiling> Single PTZ
    - (FE+DP)　　　　 : <Ceiling> Fisheye + Double Panorama
    - (FE+P)　　　　　 : <Wall> Fisheye + Panorama
    - (FE+4PTZ)　 : <Ceiling> Fisheye + Quad PTZ
    - -1~-4　　　　　 : <Ceiling> Quad streams
    - * Camera operations are available in "Single PTZ", "Quad PTZ", "Fisheye + Quad PTZ" and "Quad streams" mode.
    - * In "Quad PTZ" mode, the camera operation of the camera control panel is applied for the upper left image.
    - * Click the [x1] button of Zooming to reset the zoom factor to x1 for all 4 areas in "Quad PTZ" and "Fisheye + Quad PTZ" mode.
    - * When change the image capture mode or image capture size (resolution), the mounting position returns to the default settings described above.

[WV-S4176/A, WV-S4576L/LA, WV-X4172, WV-X4173, WV-X4573L]
- When the Super Dynamic is set to On in the Camera setup, the wide dynamic range is set to On.

2.2　Alternate model number
A camera having an asterisk "*" displayed at the beginning of the model number will operate with the "alternate model number". Regarding a camera that is not supported by this equipment (hereafter referred to as an "unsupported camera"), the model number of a supported camera having similar functions is called an "alternate model number". During operation with an "alternate model number", although the functions that are common with the unsupported camera will function normally, the functions that are unique to the unsupported camera may not function at all. It is likely such cameras will be supported formally in the future with an upgraded software version.

Please check the i-PRO support website for whether firmware corresponding to that camera has been released.

2.3 "Easy start" function

[i-PRO Co., Ltd.]

- Only CH1 of "WJ-GXE500" can be detected by this function. To register camera channel 2 to 4, select "GXE500-2" to "GXE500-4" for each camera channel on "Model" - "Registered information" page - [Camera registration] tab.
- WV-S4150, WV-S4151, WV-S4156/A, WV-S4176/A, WV-S4550L, WV-S4551L, WV-S4556L/LA, WV-S4576L/LA, WV-X4170, WV-X4171, WV-X4172, WV-X4173, WV-X4571L and WV-X4573L can be detected as "<Ceiling> Fisheye".
- The i-PRO network cameras that is not supported yet can be detected as "i-PRO(Unknown)". To register them, select the alternative model for each camera on "Model" - "Registered information" page - [Camera registration] tab.

[Other manufacture's]

- Only ONVIF standard cameras can be detected by this function.

3 Camera classifications

The correspondence table of each camera classification excluding model numbers and camera models is following. (x_FIX), (x_PTZ) and (x_FE) are options for using camera models listed in the table below, among cameras detected as "i-PRO(Unknown)".

Camera classification	Camera models
i-PRO(St1Only)	(i-PRO Network Cameras supporting H.264/H.265 stream output)
i-PRO(Unknown)	(Unknown i-PRO Network Cameras)
i-PRO(A_FIX)	(i-PRO Network Cameras, Fixed camera, Type-A) WV-NP502, WV-NW502S, WV-SF132, WV-SF135, WV-SF332, WV-SF335, WV-SF342, WV-SF346, WV-SP102, WV-SP105, WV-SP302, WV-SP305, WV-SP306, WV-SW115, WV-SW152, WV-SW155, WV-SW314, WV-SW316/L, WV-SW352, WV-SW355
i-PRO(A_PTZ)	(i-PRO Network Cameras, PTZ camera, Type-A) WV-SC384, WV-SC385, WV-SC386, WV-ST162, WV-ST165, WV-SW172, WV-SW174W, WV-SW175, WV-SW395/A, WV-SW396/A
i-PRO(B_FIX)	(i-PRO Network Cameras, Fixed camera, Type-B) WV-SF138, WV-SF538, WV-SF539, WV-SF548, WV-SF549, WV-SP508, WV-SP509, WV-SW158, WV-SW558, WV-SW559
i-PRO(B_PTZ)	(i-PRO Network Cameras, PTZ camera, Type-B) WV-SC387/A, WV-SC588/A, WV-SW397/A/B, WV-SW598/A
i-PRO(B_FE)	(i-PRO Network Cameras, 360-degree fisheye camera, Type-B) WV-SF438, WV-SF448E, WV-SW458
i-PRO(C_FIX)	(i-PRO Network Cameras, Fixed camera, Type-C) WV-SFN110, WV-SFN130, WV-SFN310/A, WV-SFN311/A/L, WV-SFN531, WV-SFN611L, WV-SFN631L, WV-SFR310/A, WV-SFR311/A, WV-SFR531, WV-SFR611L, WV-SFR631L, WV-SFV110, WV-SFV130, WV-SFV310/A, WV-SFV311/A, WV-SFV531, WV-SFV611L, WV-SFV631L/LT, WV-SPN310/A, WV-SPN311/A, WV-SPN531/A, WV-SPN611, WV-SPN631, WV-SPW311AL, WV-SPW312L, WV-SPW531AL, WV-SPW532L, WV-SPW611/L, WV-SPW631L/LT
i-PRO(D_FIX)	(i-PRO Network Cameras, Fixed camera, Type-D) WV-SFV781L, WV-SPV781L
i-PRO(D_FE)	(i-PRO Network Cameras, 360-degree fisheye camera, Type-D) WV-SFN480, WV-SFV481
ONVIF	ONVIF standard cameras
ONVIF(FE)	ONVIF standard 360-degree cameras
ONVIF-1 ~ ONVIF-4	ONVIF standard encoders (up to 4ch)
RTSP	Network cameras receiving stream at RTSP URL address
RTSP(FE)	360-degree cameras receiving stream at RTSP URL address

* ONVIF is a trademark of ONVIF, Inc.

3.1 Restrictions when using camera classification from Type-A to Type-D

When using camera classification, it may not work properly depending on the specifications of each camera. Also, some functions and settings that are not supported by this unit cannot be used. Examples of restrictions are listed below.

- Set each setting (resolution, frame rate, etc.) within the range supported by the target camera.
- The image capture mode of the camera cannot be changed from this unit, so set it on the camera side, as necessary.

- When using a Type-D camera with JPEG, set the resolution on the camera side, as necessary.
- Cameras with audio functions in Type-A and Type-B camera cannot be recorded with this unit.
- The 360-degree fisheye camera supports fisheye, 1PTZ, 4PTZ, panorama, and double panorama modes. When using 1PTZ mode or 4PTZ mode, register with i-PRO(x_PTZ). When using in panorama mode or double panorama mode, register with i-PRO(x_FIX).
- The RS-485 output unit (WV-SPN6R481) is not supported.

4   Using ONVIF standard cameras

This unit is equipped ONVIF Client function of ONVIF Profile S and can connect to cameras supporting ONVIF Profile S.

[Support functions]
1) Auto camera detection
2) Register the camera manually
3) Display live camera image, recording and playback camera image
   - Video compression format   : H.265, H.264, MJPEG
   - Image capture size   : Refer to the chapter 6
   - Frame rate   :
     H.265/H.264   30ips, 15ips, 10ips, 5ips, 3ips, 1ips
     MJPEG   5ips, 3ips, 1ips
   - Image quality   :
     H.265/H.264   XF(Extra Fine), SF(Super Fine), FQ(Fine), NQ(Normal)
     MJPEG   SF(Super Fine), FQ(Fine), NQ(Normal)
4) Output live audio, recording and playback audio
   - Audio compression format   : AAC-LC, G.711
5) Camera control (Pan, Tilt, Zoom, Register and call preset position)
6) Receive the events
7) User authentication
   - Authentication method   : Digest authentication, Basic authentication

[Notices]
   - Depending on which version or function of ONVIF the camera supports, this unit may not connect to the cameras or not work correctly. And some functions may work slowly.
   - Set the IP address to the cameras in advance. For further information, refer to the operating instructions of the cameras in use.
   - This unit receives events which are sent by ONVIF standard camera and treats them as "Camera site alarm (ONVIF)". Set the camera in use whether or not to provide an alarm notification when an event occurs.
   - A preset position number 0 is registered as home position.
   - Set the same time zone with this unit to the cameras.
   - Adjust the time and date of the camera to the clock of this unit.
   - When a part of the camera image broken is displayed or whole image isn't displayed, set the image quality, the frame rate or the image capture size to low.

* ONVIF is a trademark of ONVIF, Inc.

5 Receiving stream at RTSP URL address

This unit can connect to the camera with RTSP URL.

[Support functions]
1) Register the camera manually
2) Display live camera image, recording and playback camera image
    - Video compression format   : H.265, H.264, MJPEG
    - Image capture size   : Refer to the chapter 6
    - Frame rate   :
        H.265/H.264   30ips, 15ips, 10ips, 5ips, 3ips, 1ips
        MJPEG   5ips, 3ips, 1ips
    - Image quality   :
        H.265/H.264   XF(Extra Fine), SF(Super Fine), FQ(Fine), NQ(Normal)
        MJPEG   SF(Super Fine), FQ(Fine), NQ(Normal)
    - Connection method   : RTSP, Internet mode
3) Output live audio, recording and playback audio
    - Audio compression format   : AAC-LC
4) User authentication
    - Authentication method   : Digest authentication,

[How to connect]
1) Set the IP address, the image capture size, the frame rate, etc. on the camera in advance.
2) Select "RTSP" for the "Model" and enter the video transmission URL of the camera in the "Address" field in the setup menu – the [Camera] page – [Camera registration] tab – [Registered information].
    Example of URL) rtsp://192.168.0.10/Src/MediaInput/stream_1
3) Match other setting of this unit (Video compression format, username, password, image capture size, frame rate, etc.) to the camera settings.
4) End the setting.

[Notices]
    - Even with cameras that support RTSP, this unit may not connect to the cameras or not work correctly.
    - Refer to the operating instructions of the camera or the camera manufacturer's website for the video transmission URL.
    - Thumbnails are not displayed in the setup menu.
    - Camera control such as panning and tilting cannot be performed.
    - If a camera supported by this unit or an ONVIF standard camera is registered with "RTSP" and the camera detection is performed, it will be detected as another camera.

6 Supported image capture size

The supported image capture size (resolution) depends on the compression method.

Compression / Resolution	H.265 (1)	(2)	(3)	(4)	H.264 (1)	(2)	(3)	(4)	MJPEG
4KUHD(3840x2160)	✓				✓				✓
6M(3328x1872)	✓				✓				✓
5M(3072x1728)	✓				✓				✓
4M(2688x1520)	✓				✓				✓
WQHD(2560x1440)	✓				✓				✓
FHD(1920x1080)	✓				✓				✓
HD(1280x720)	✓	✓	✓	✓	✓	✓	✓	✓	✓
HVGAW(640x360)	✓	✓	✓	✓	✓	✓	✓	✓	✓
7M(3072x2304)	✓				✓				✓
5M(2560x1920)	✓				✓				✓
QXGA(2048x1536)	✓				✓				✓
UXGA(1600x1200)	✓				✓				✓
SXVGA(1280x960)	✓	✓			✓	✓			✓
SVGA(800x600)	✓				✓				✓
VGA(640x480)	✓	✓	✓	✓	✓	✓	✓	✓	✓
9M(2992x2992)	✓				✓				✓
8M(2816x2816)	✓				✓				✓
5M(2192x2192)	✓				✓				✓
4M(2048x2048)	✓				✓				✓
2M(1440x1440)	✓				✓				✓
1.6M(1280x1280)	✓	✓			✓	✓			✓
1.4M(1200x1200)	✓				✓				✓
0.4M(640x640)		✓				✓			
8M(2160x3840)	✓								✓
6M(1872x3328)	✓								✓
5M(1728x3072)	✓								✓
4M(1520x2688)	✓								✓
4M(1440x2560)	✓								✓
2M(1080x1920)	✓								✓
1M(720x1280)	✓	✓	✓	✓					✓
0.2M(360x640)	✓	✓	✓	✓					✓

* Depending on the camera, this unit may not support the resolution even if the camera supports it.

* When the compression method of i-PRO camera is H.265/H.264, this unit uses the Recording-stream for single-screen live display on the monitor, and the Monitor-live-display-stream for multi-screen live display. Also, when using a 4K monitor, the Recording-stream is used for live display on 1 to 4 screens, and the Monitor-live-display-stream is used for live display on 5 or more screens. If the resolution of the Recording-stream is 6M or higher, the Monitor-live-display-stream is also used for live display 2 to 4 screens.

      Recording-stream   : H.265(1)/H.265(3)/H.265(4)/H.264(1)/H.264(3)/H.264(4)
      Monitor-live-display-stream   : H.265(2)/H.264(2)

* For cameras registered with "ONVIF" and "RTSP", this unit uses the Recording-stream for both single-screen live display and multi-screen live display.

      Recording-stream   : H.265(1)/H.264(1)