

# WAT-2200Mk-2/WAT-3200 Control Software Operation Manual

[version 1.00]

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# **1 Overview**

"WAT-2200Mk-2/WAT-3200 Control Software" is software for setting, factory reset and OSD Operation for WAT-2200Mk-2/WAT-3200 by RS-232 communication.

Note: For details on each setting value, please refer to the User Manual of the camera.

# **2 Disclaimer**

For any damages caused by using the "WAT-2200Mk-2/WAT-3200 Control Software", Watec Co., Ltd. does not guarantee.

### 3 Supported models

The following SDI models are Supported .

- WAT-2200 Mk-2
- WAT-3200

### 4 Operating environment

It has been confirmed the operation in the following environment.

**Table 1 System requirements**

OS	Windows10(*1), Windows11(*2) (*1) Confirmed by Version:21H2, OS Build:19044.2965 (*2) Confirmed by Version:22H2, OS Build:22621.1555
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### 5 Specification of communication

The specification of communication is below.

**Table 2 Communication protocol**

COM port	- Data rate : 9600bps - Data bit : 8bits - Parity : none - Stop bit : 1bit - Flow control : none
limitation	- Cannot communicate with the camera on starting after about 10 seconds.

## 6 Communication cable

The pin-assignment and the connections of the serial communication cable(CB-03) are below.



Fig. 1 Pin layout

Table 3 Internal connection of the CB-03

Mini-Din 8pin (male)			Internal Connection	D-sub 9pin (female)		
Pin No.	Name	Description		Pin No.	Name	Description
3	TXD (out)	Send from camera	Connect	2	RXD (in)	Receive by control equipment
5	RXD (in)	Receive by camera	Connect	3	TXD (out)	Send from control equipment
4	GND	Ground	Connect	5	GND	Ground
1, 2, 6, 7, 8	NC	Unused (For remote control bouton)	Non-Connect	1, 4, 6, 7, 8, 9	NC	Unused *

\*Short the 7pin (RTS) and 8pin (CTS) on the control equipment side as needed.  
(Disable the hardware flow control)

## 7 Precautions when using this software

- When rebooting, setting changes, factory reset, etc. are performed by direct operation of the camera, there may be differences between the actual camera settings and the settings displayed by this software.  
If the camera is operated directly, please perform the "get settings (from camera)" described later and check if there is any difference between the actual camera settings and the settings displayed by this software.
- It is not recommended to change the settings using this software while the OSD is displayed on the camera.

## 8 How to Install

Unzip the file downloaded from our website and copy the created folder to any location. After that, execute "WAT-2200Mk-2\_3200\_Control\_Installer.msi" in the folder and follow the instructions to install.

## 9 How to Start

Click "WAT-2200Mk-2\_3200\_Control" from the Windows start menu to open it, then click "WAT-2200Mk-2\_3200\_ControlSoftware" to start it.

Or search for "WAT-2200Mk-2\_3200\_ControlSoftware" from the Windows start menu search and click to launch.

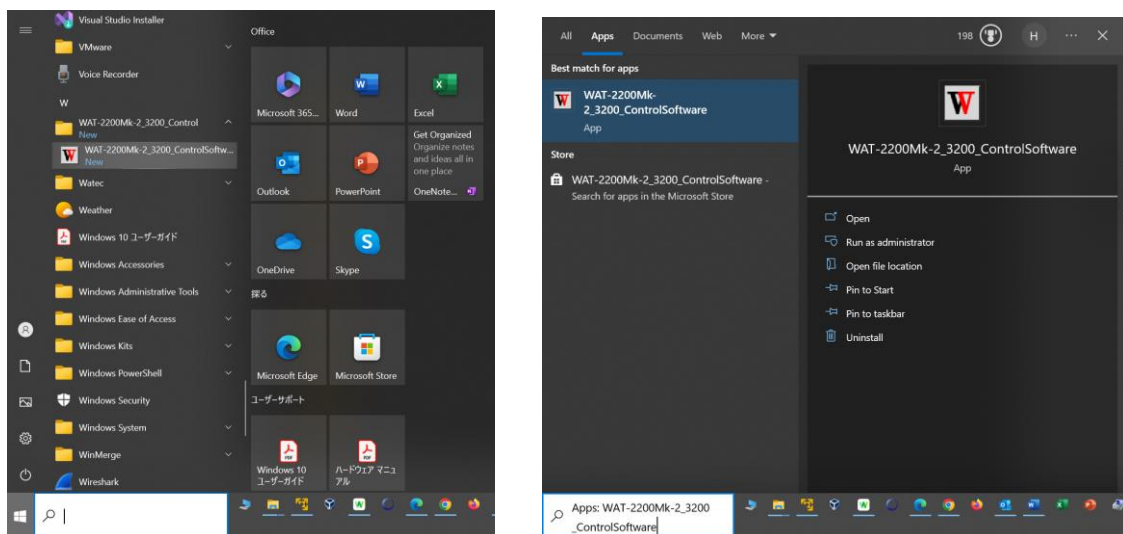


Fig. 2 How to find app

## 10 How to Uninstall

Right-click "WAT-2200Mk-2\_3200\_ControlSoftware" found by the method introduced in "9 How to Start" and click Uninstall. When the "Uninstall or change a program" screen appears, find "WAT-2200Mk-2\_3200\_ControlSoftware" from the list and uninstall it.

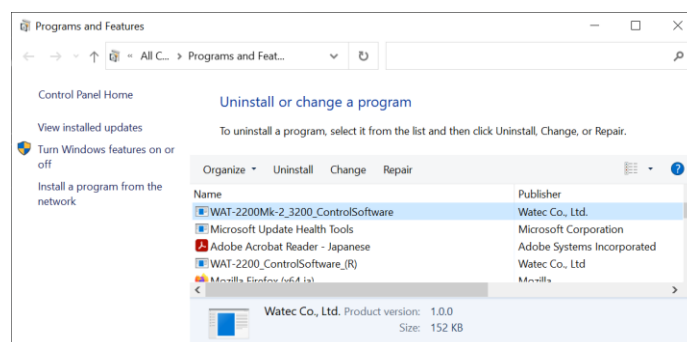


Fig. 3 programs and features

# 11 Operation Description

## 11-1 Settings of the port number and model

When starting the software, set the serial port number and camera model in the option window.

You can check the port number in Device Manager.

Please check the camera model you have.

After clicking OK, the selected model name will be displayed on the main window.

The settings window can be redisplayed from the menu (File->Option...).

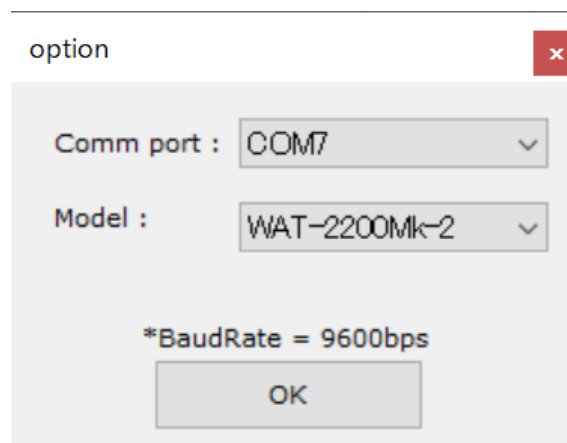


Fig. 4 port number and model option

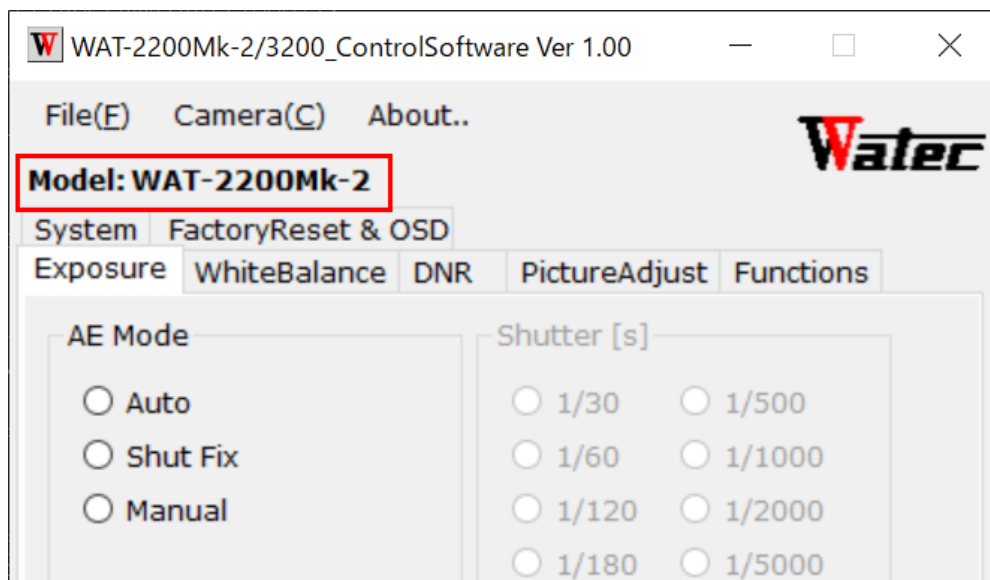


Fig. 5 Display of selected model(Main window)

## 11-2 Change the camera settings

### 11-2-1 File menu

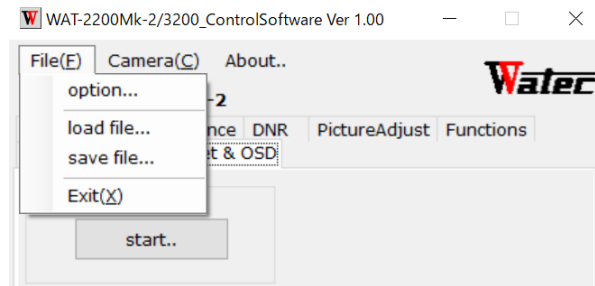


Fig. 6 file menu

#### 11-2-1-1 option...

Display the port number and model setting window.

For details, see "11-1 Settings of the port number and model ".

#### 11-2-1-2 load file...

Load previously saved configuration files.

After execution, the Open dialog will be displayed. Select the configuration file and press the "Open" button.

The loaded settings are reflected in the setting values displayed on the software, but not on the camera itself. Please perform "send all settings (to camera)" by yourself and reflect it in the camera settings.

**Note:** If the version of the software differs from when the setting file was saved, the settings may not be reflected correctly.

**Note:** After saving the setting file, if the user changes the contents, it may not be possible to read or the intended setting value may not be obtained.

#### 11-2-1-3 save file...

Save the current settings to a file.

However, the Freeze on PictureAdjust tab setting is not saved.

After execution, the Save dialog will be displayed. Enter the setting file name and press the "Save" button.

**Note:** Since the setting values to be saved are the setting values displayed by the software, they may differ from the actual camera setting values. Please perform "get settings (from camera)" yourself and save after confirming that the setting values of the camera are reflected.

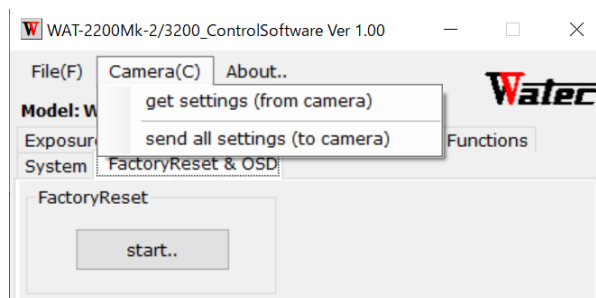


## 11-2-1-4 Exit

Exit this software.

The same operation is performed when the X button on the upper right of the window is pressed.

## 11-2-2 Camera menu



**Fig. 7 Camera menu**

### 11-2-2-1 get settings(from camera)

Get the current settings of the camera.

However, the following settings cannot be acquired.

- Level on DNR tab
- CorrectionValue on PictureAdjust tab

### 11-2-2-2 send all settings(to camera)

Sends the setting values displayed on the software to the camera.

At the same time, the Freeze on PictureAdjust tab is always set to OFF.

Please note that if the selection settings are not selected, the camera will not be set.

### 11-2-3 About menu

Display the about window.



Fig. 8 The about window

The about window displays the software name, version, and developer.

## 11-2-4 Exposure

When the WDR on the Functions tab is ON, this tab is disabled.

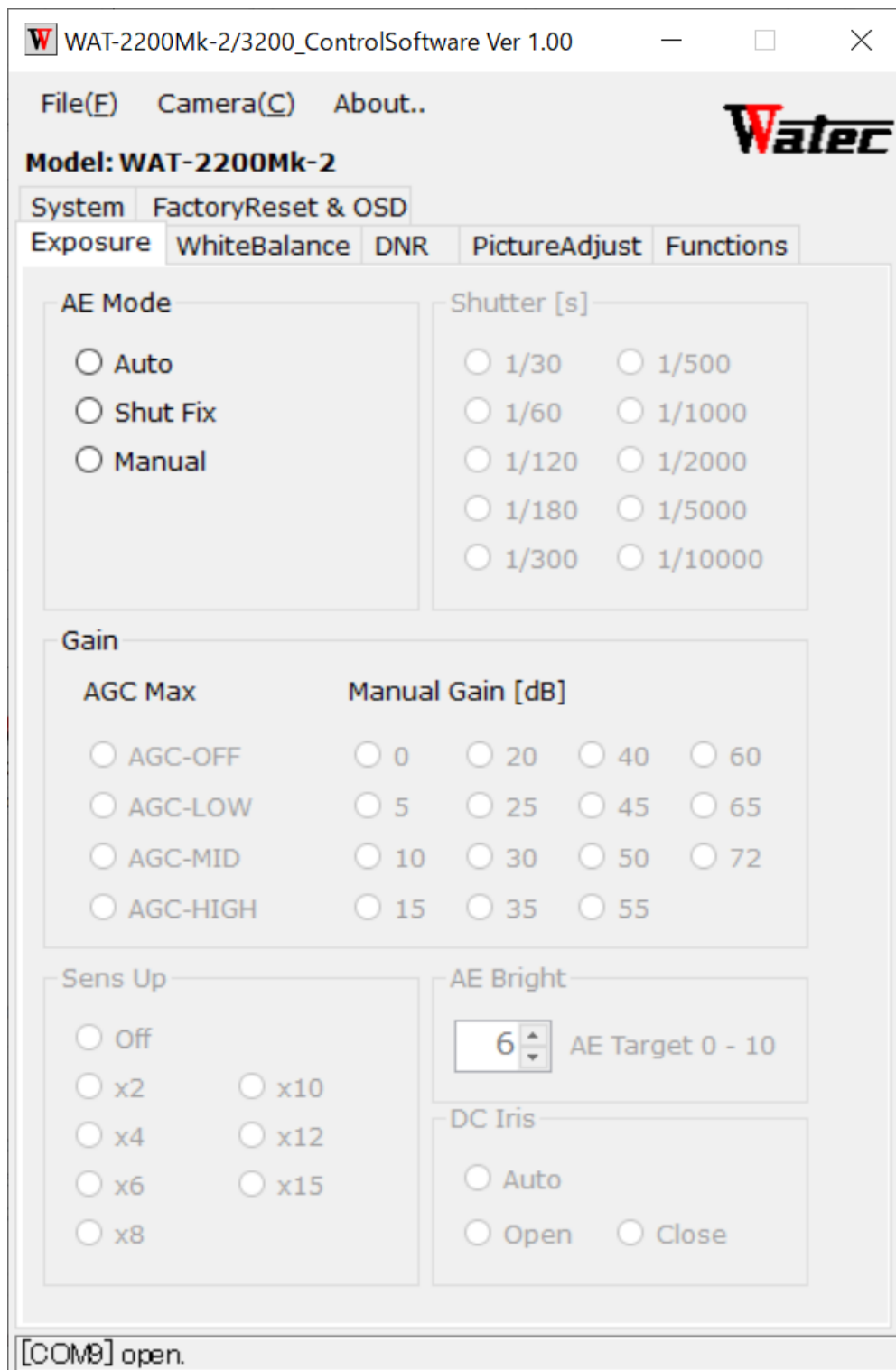


Fig. 9 Exposure tab

## 11-2-4-1 AE Mode

Sets the mode of auto exposure control. Each mode operates in the following combinations.

**Table 4 Selection of exposure modes**

Mode	Shutter	Gain
Auto	Auto	Auto
Shut Fix	Manual	Auto
Manual	Manual	Manual

[Auto]

Adjust exposure by automatically controlling electronic shutter and gain.

[Shut Fix]

With the electronic shutter fixed, the gain is automatically controlled to adjust the exposure. When the electronic shutter speed is slowed down, overexposure occurs. In that case, use a DC iris lens together.

[Manual]

Electronic shutter speed and gain can be selected independently.

Always open when using an IRIS lens.

### 11-2-4-2 Shutter

When the AE mode is ShutFix or Manual, an electronic shutter speed can be selected from the following values. The selectable electronic shutter speed changes depending on the OutputMode on the System tab.

**Table 5 List of Shutter settings**

Selected 1080p60, 1080p59, 1080i60, 1080i59, 720p60, or 720p59	Selected 1080p30 or 1080p29	Selected 1080p50, 1080i50, or 720p50	Selected 1080p25
-	1/30s	-	1/25s
1/60s		1/50s	
1/120s		1/100s	
1/180s		1/150s	
1/300s		1/250s	
1/500s			
1/1000s			
1/2000s			
1/5000s			
1/10000s			

### 11-2-4-3 Gain

When the AE Mode is Manual, any fixed gain can be selected from the following values. In other modes, select the working range of AGC Max.

**Table 6 List of ManualGain settings**

0 dB	5 dB	10 dB	15 dB	20 dB	25 dB	30 dB	35 dB
40 dB	45 dB	50 dB	55 dB	60 dB	65 dB	72 dB	

**Table 7 List of AGC Max settings**

Setting	Gain range
AGC-OFF	0dB
AGC-LOW	0 - 36 dB
AGC-MID	0 - 50 dB
AGC-HIGH	0 - 72 dB

## 11-2-4-4 Sens Up

Sets the long exposure time (slow shutter).

When the AE Mode is Auto or Manual, this is enabled.

**Table 8 List of SensUp settings**

Off	x2	x4	x6	x8	x10	x12	x15
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## 11-2-4-5 AE Bright

Sets the brightness target value.

When the AE Mode is Auto or Shut Fix, this is enabled.

It can be set in the range of 0 - 10.

## 11-2-4-6 DC Iris

Sets the iris lens mode.

When the AE Mode is Auto or Shut Fix, this is enabled.

**Table 9 List of DC Iris settings**

Setting	Operating
Auto	Controls the DC Iris to the brightness target value.
Open	Fully open the DC iris lens.
Close	Fully close the DC iris lens.

## 11-2-5 WhiteBalance

When the WAT-3200 is selected in the option window, this tab is disabled.

Also, when the WDR on the Functions tab is ON, this tab is disabled.

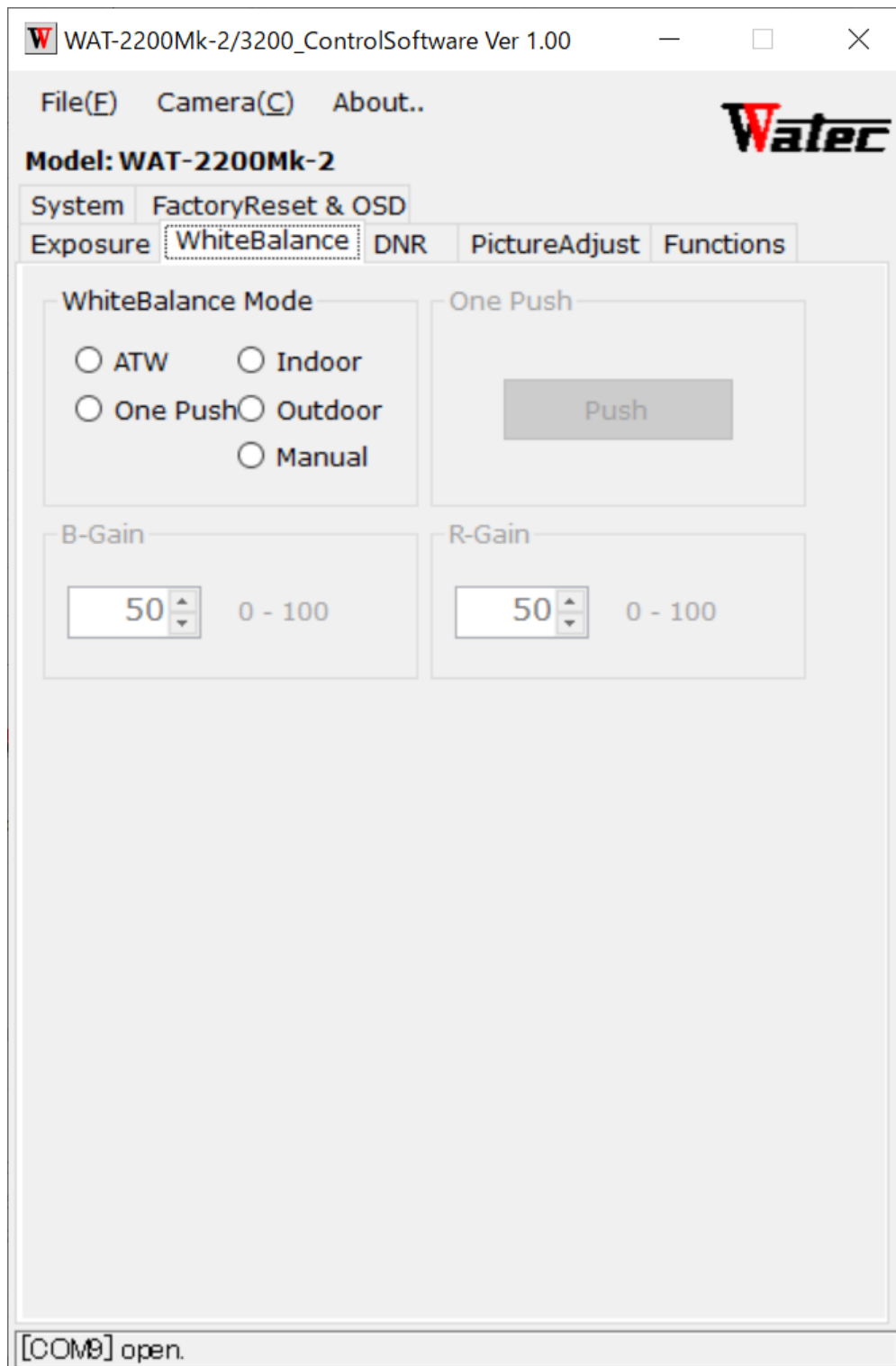


Fig. 10 WhiteBalance tab

## 11-2-5-1 White Balance Mode

Sets the white balance operation mode.

**Table 10 List of WhiteBalanceMode settings**

Setting	Operating
ATW	Automatically follows changes in ambient color temperature to control white balance and maintain color reproducibility.
One Push	This mode fixes the white balance at a specific color temperature. It is used in combination with the white balance convergence (Push Button).
Indoor	White balance automatically follows (about 4600K - 7200K). Set to easily follow indoor light sources (fluorescent lights, etc.).
Outdoor	White balance automatically follows (about 4600K - 10000K). Set to easily follow outdoor light sources (sunlight, etc.).
Manual	Adjust R-Gain/B-Gain of white balance correction value as desired.

## 11-2-5-2 One Push

### 11-2-5-2-1 Push Button

Executes the white balance convergence and then locks the white balance.

When the WhiteBalanceMode is OnePush, this is enabled.

## 11-2-5-3 B-Gain

Sets the B-Gain of the white balance correction value.

When the WhiteBalanceMode is Manual, this is enabled.

It can be set in the range of 0 - 100.

## 11-2-5-4 R-Gain

Sets the R-Gain of the white balance correction value.

When the WhiteBalanceMode is Manual, this is enabled.

It can be set in the range of 0 - 100.



## 11-2-6 DNR



Fig. 11 DNR tab

## 11-2-6-1 Mode

Sets the noise reduction control mode.

**Table 11 List of DNR Mode settings**

Setting	Operating
Off	No noise reduction control.
2D	2D noise reduction works.
3D	3D noise reduction works.
2D+3D	Control noise reduction by combining 2D noise reduction and 3D noise reduction.

## 11-2-6-2 Level

Sets the strength of noise reduction.

When the Mode is 2D, 3D, or 2D+3D, this is enabled.

**Table 12 List of DNR Level settings**

Setting	Operating
Auto	Automatically controls the strength of noise reduction.
Low	Sets the strength of the noise reduction to LOW.
Mid	Sets the strength of the noise reduction to MID.
High	Sets the strength of the noise reduction to HIGH.

## 11-2-7 PictureAdjust

When WDR on the Functions tab is ON, this tab is disabled.

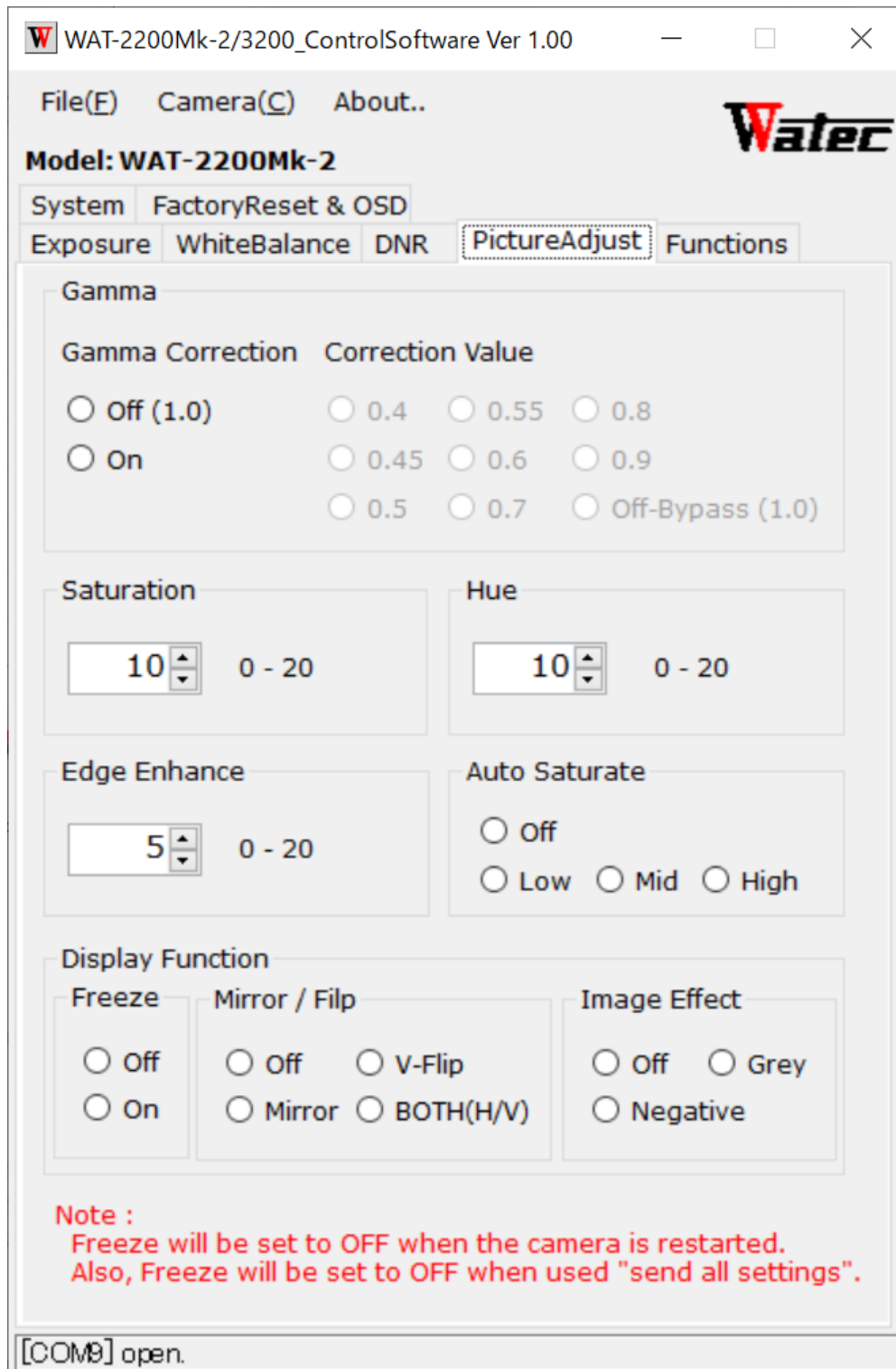


Fig. 12 PictureAdjust tab

## 11-2-7-1 **Gamma**

### 11-2-7-1-1 **Gamma Correction**

Switches the gamma correction function ON/OFF.

### 11-2-7-1-2 **Correction Value**

Sets the gamma correction value.

When the Gamma Correction is ON, this is enabled.

**Table 13 List of Correction Value settings**

0.4	0.45	0.5	0.55	0.6	0.7	0.8	0.9	Off-Bypass(1.0)
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## 11-2-7-2 **Saturation**

Adjusts the saturation of the image.

It can be set in the range of 0 - 20.

## 11-2-7-3 **Hue**

Adjusts the hue of the image.

It can be set in the range of 0 - 20.

## 11-2-7-4 **Edge Enhance**

Adjust the level of edge enhancement.

It can be set in the range of 0 - 20.

## 11-2-7-5 Auto Saturate

This function suppresses the saturation when the illumination of the subject is low.

**Table 14 List of Auto Saturate settings**

Setting	Operating
Off	Maintains color saturation even when subject illumination is low.
Low	Sets the strength of the auto saturation to LOW.
Mid	Sets the strength of the auto saturation to MID.
High	Sets the strength of the auto saturation to HIGH.

## 11-2-7-6 Display Function

### 11-2-7-6-1 Freeze

Sets the Freeze state of the image.

**Note:** Even if this setting is set to ON by this software, the setting will be set to OFF when the camera is restarted.

**Note:** This setting value is not saved by "save file". Furthermore, when doing "send all settings (to camera)", it will be forcibly set to Off, and the Freeze state of the camera will also be set to OFF.

**Table 15 List of Freeze settings**

Setting	Operating
Off	Sets the Freeze state to OFF.
On	Sets the Freeze state to ON. When the Freeze is ON, the following settings are disabled. <ul style="list-style-type: none"><li>- WDR on Functions tab</li><li>- MotionDetect on Functions tab</li><li>- OutputFormat on System tab</li><li>- CVBSFormat on System tab</li></ul>

## 11-2-7-6-2 Mirror/Flip

Sets the Mirror/Flip state of the image.

When the DIS on the Functions tab is ON, this is disabled.

Also, when this setting is Mirror, V-Flip, or BOTH (H/V), the DIS on the Functions tab is disabled.

**Table 16 List of Mirror/Flip settings**

Setting	Operating
Off	Turn off MIRROR.
Mirror	Invert to right and left of the image.
V-Flip	Invert to up and down of the image.
BOTH(H/V)	Rotate the image 180 degrees.

## 11-2-7-6-3 Image Effect

Sets the Image Effect state of the image.

**Table 17 List of Image Effect settings**

Setting	Operating
Off	Turn off IMAGE EFFECT.
Negative	The negative-positive reversal on the contrast and color of the image.
Gray	Make the image to achromatic color.

## 11-2-8 Functions

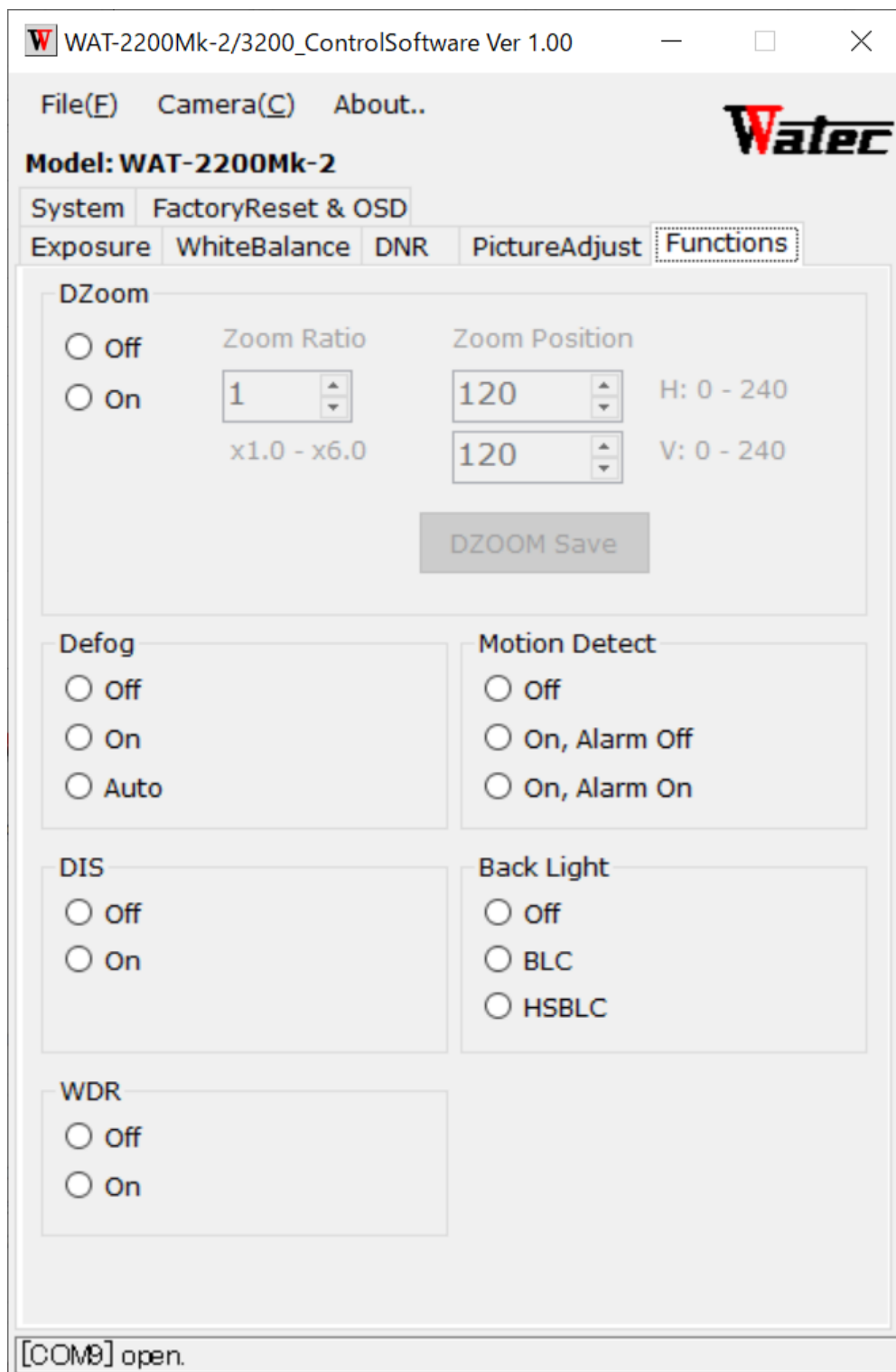


Fig. 13 Functions tab

## 11-2-8-1 DZoom

Switches the digital zoom function ON/OFF.

When the DIS is ON, this is disabled.

Also, when this setting is ON, the DIS is disabled.

### 11-2-8-1-1 Zoom Ratio

Sets the magnification of digital zoom.

When the DZoom is ON, this is enabled.

It can be set in the range of 1 - 6.

### 11-2-8-1-2 Zoom Position

Sets the pan and tilt position of the digital zoom.

When the DZoom is ON, this is enabled.

H is the setting for the pan side (horizontal direction) and V is the setting for the tilt side (vertical direction).

Both can be set within the range of 0 - 240.

### 11-2-8-1-3 DZOOM Save Button

Saves the digital zoom magnification, pan, and tilt position settings to the camera.

When the DZoom is ON, this is enabled.

If you have not saved with this button, the digital zoom setting will return to the last saved setting when the camera is restarted.

## 11-2-8-2 Defog

Sets the state of fog correction.

When the Back Light is BLC or HSBLCL, this is disabled.

Also, when this setting is On or Auto, the BackLight is disabled.

**Table 18 List of Defog settings**

Setting	Operating
Off	Sets the Defog to OFF.
On	Sets the Defog to ON (Fixed).
Auto	Sets the Defog to ON (Auto).



### 11-2-8-3 Motion Detect

Sets the MotionDetect ON/OFF.

When the Freeze on PictureAdjust tab is ON, this is disabled.

**Table 19 List of Motion Detect settings**

Setting	Operating
Off	Sets the MotionDetect to OFF.
On, Alarm Off	Sets the MotionDetect to ON. Sets the function to output the detection result by Visca command to OFF.
On, Alarm On	Sets the MotionDetect to ON. Sets the function to output the detection result by Visca command to ON.

### 11-2-8-4 DIS

Sets function of reducing the blur and/or vibration of the subject.

the DIS is disabled in the following cases:

- When Mirror/Flip on PictureAdjust tab is Mirror, V-Flip, or BOTH (H/V)
- When DZoom is ON
- When WDR is ON

Also, when the DIS is ON, the following settings are disabled.

- Mirror/Flip on PictureAdjust tab
- DZoom
- WDR

## 11-2-8-5 Back Light

Sets the backlight compensation status.

When the Defog is On or Auto, this is disabled.

Also, when this setting is BLC or HSBLC, the Defog is disabled.

**Table 20 List of Back Light settings**

Setting	Operating
Off	Sets the BackLight state to OFF.
BLC	Sets the BackLight state to BLC.
HSBLC	Sets the BackLight state to HSBLC.

## 11-2-8-6 WDR

Sets function of the multiple exposure function.

the WDR is disabled in the following cases.

- When Freeze on PictureAdjust tab is ON
- When DIS is ON

Also, when the WDR is ON, the following items are disabled.

- Exposure tab
- WhiteBalance tab
- PictureAdjust tab
- DIS

## 11-2-9 System

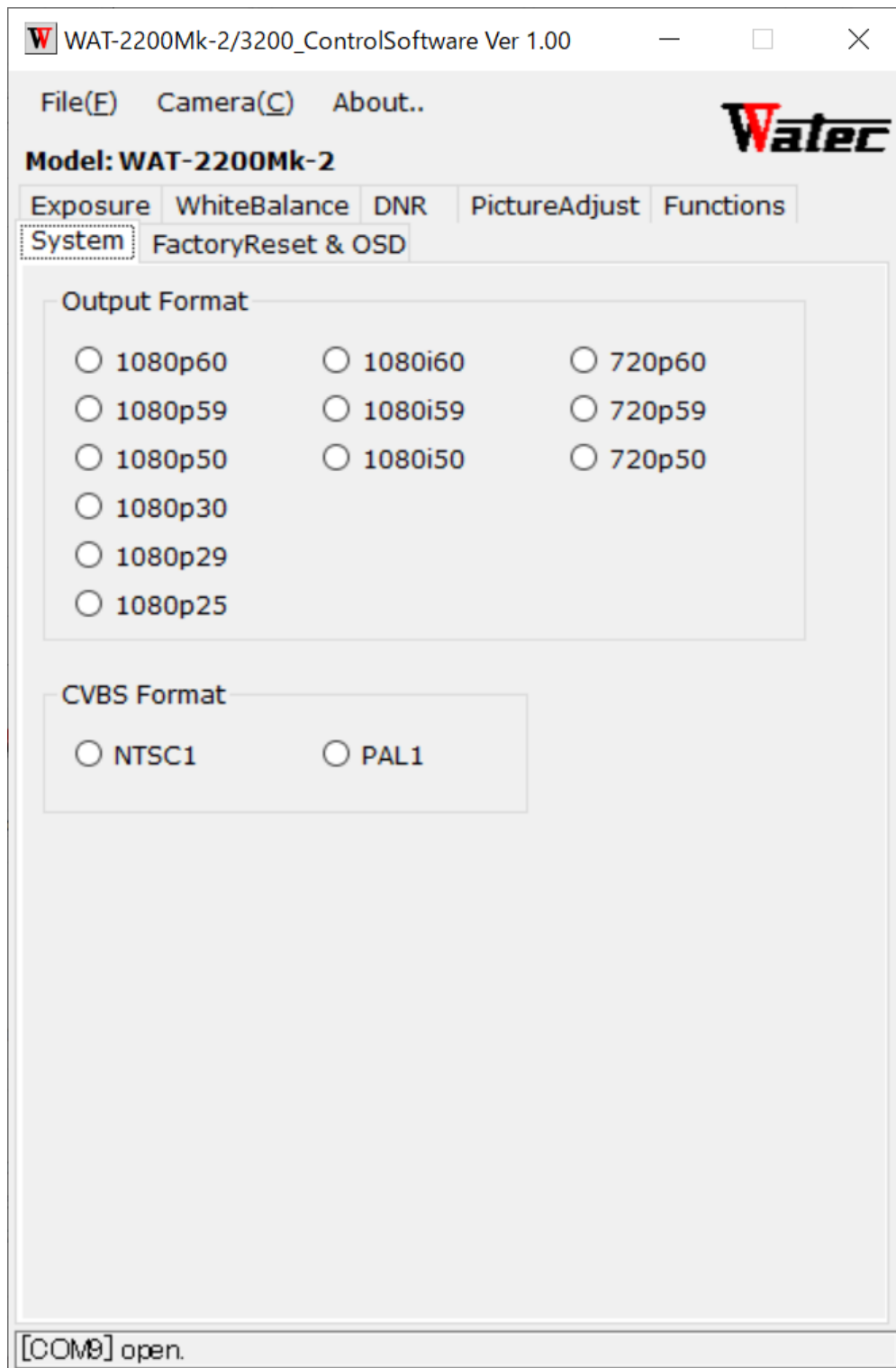


Fig. 14 System tab

## 11-2-9-1 Output Format

Sets the SDI output format.

**Table 21 List of Output Format settings**

Setting	Operating
1080i60	Outputs Full HD (1920x1080), 60field/s, and interlace format (HD-SDI)
1080i59	Outputs Full HD, 59field/s, and interlace format (HD-SDI)
1080i50	Outputs Full HD, 50field/s, and interlace format (HD-SDI)
1080p60	Outputs Full HD, 60frame/s, and progressive format (3G-SDI)
1080p59	Outputs Full HD, 59frame/s, and progressive format (3G-SDI)
1080p50	Outputs Full HD, 50frame/s, and progressive format (3G-SDI)
1080p30	Outputs Full HD, 30frame/s, and progressive format (HD-SDI)
1080p29	Outputs Full HD, 29frame/s, and progressive format (HD-SDI)
1080p25	Outputs Full HD, 25frame/s, and progressive format (HD-SDI)
720p60	Outputs HD (1280x720), 60frame/s, and progressive format (HD-SDI)
720p59	Outputs HD, 59frame/s, and progressive format (HD-SDI)
720p50	Outputs HD, 50frame/s, and progressive format (HD-SDI)

Note: Depending on the monitor, there are settings that do not display the image.  
Check the specifications of the monitor you are using before setting.

## 11-2-9-2 CVBS Format

Sets the CVBS output format.

**Table 22 List of CVBS Format settings**

Setting	Operating
NTSC1	Compress Full HD size video to 4:3 aspect ratio and output in NTSC format.
PAL1	Compress Full HD size video to 4:3 aspect ratio and output in PAL format.

## 11-2-10 FactoryReset&OSD



Fig. 15 FactoryReset&OSD tab

## 11-2-10-1 **FactoryReset**

### 11-2-10-1-1 **start Button**

Sends a command to reset the camera to the factory default settings.

After restarting the camera, the setting values are not automatically acquired, so please perform "get settings (from camera)" by yourself and reflect them in each setting.

## 11-2-10-2 **OSD**

Sends commands to perform OSD operations.

One command is sent each time the button is pressed.

Even if you press and hold it, the command is sent only once.

Also, operation is possible by keyboard input only while FactoryReset&OSD tab is selected.

**Table 23 List of OSD settings**

Button	Key	Operating
Open(O)	[O] key	Sends the OSD Open command to the camera.
Close(C)	[C] key	Sends the OSD Close command to the camera.
↑	[Up] key	Sends the OSD Up command to the camera.
→	[Right] key	Sends the OSD Right command to the camera.
↓	[Down] key	Sends the OSD Down command to the camera.
←	[Left] key	Sends the OSD Left command to the camera.
Enter	[Enter] key	Sends the OSD Enter command to the camera.

## 12 **Revision history**

-2023/5/31 [version 1.00] 1<sup>st</sup> release.