

WAT-2500, WAT-3500  
User's Manual

Rev. 1.00

**Watec Co., Ltd.**

# Revision Record

Rev.	Date	Changes
1.00	2023/10/23	-

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## 1. About this manual

This user manual describes the OSD (On Screen Display) menu of WAT-2500/3500 and the details of each function.

When the settings of the WAT-2500/3500 is changed according to this manual, check to see that the operation and the effects of the changes made to the camera are acceptable.

The WAT-2500/3500 user's manual is subject to change by design and the specifications of the product without notice.

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## 2. Configuring the camera function

The function of WAT-2500/3500 can be set by the RC-01 (remote controller). Utilize the option RC-01 (remote controller) to set function through OSD (On Screen Display) menu.

### 2.1. RC-01 (Remote Controller)

Operate the OSD menu by the RC-01.

Connect the RC-01 to the REMOTE terminal on the rear of the camera. Remote controller unit providing access to adjustments, settings the functions on the OSD menu.

\*When using the remote controller, vertically insert the connector fully until it clicks. When disconnecting the remote controller, pull the connector while pinching the lock.



**Figure 1. RC-01 (remote controller)**

- |                   |   |
|-------------------|---|
| 1. UP, 2. DOWN    | : Cursor control for selecting the OSD menu items.          |
| 3. LEFT, 4. RIGHT | : Change the settings or value on the OSD menu.             |
| 5. ENTER          | : Open the OSD menu. Execute the selected item or function. |

## 2.2.OSD Menu Operations

All of the camera function can be set by the OSD (On Screen Display) menu. Set the function through the OSD menu operation by the following procedure.

### [Open / Close OSD menu]

Press the "ENTER" while the OSD menu is not displayed, then the OSD menu (MAIN MENU) will be opened. To close the OSD menu, move the cursor to the "EXIT" and press "ENTER".



Figure 2. MAIN MENU is opened

### [Shift to Each Setting Menu]

Use the "UP/DOWN" on the RC-01 to move the cursor to select each OSD menu item, and press "ENTER" to open each function setting menu. In the each function setting menu, to go back to the previous menu, move the cursor to the "RETURN", and press "ENTER".

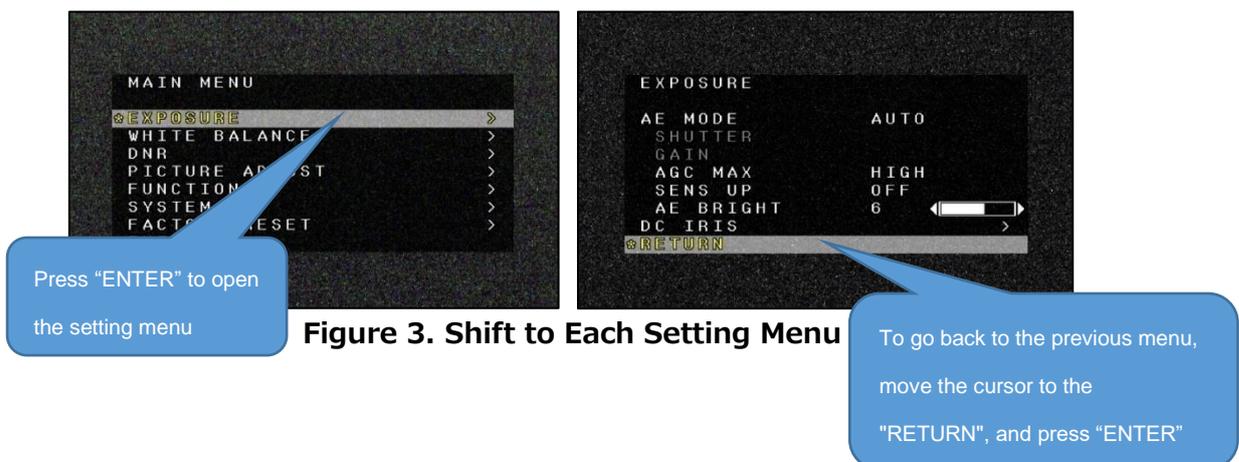


Figure 3. Shift to Each Setting Menu

### [Change Settings]

Use the "UP/DOWN" on the RC-01 to move the cursor to select each OSD menu item, and press "LEFT/RIGHT" to change the setting of the item that the cursor is matched.

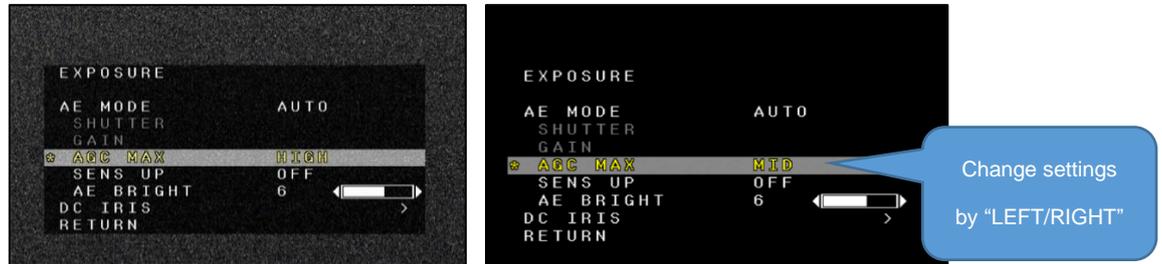


Figure 4. Change Settings

#### **Precautions** \*About an operation for save of settings

The set value is saved immediately on this camera as soon as the settings are changed by the OSD. The settings retains even when the power of the camera is turned off.

(\*Excluding the DZOOM and function not supported to be saved.)

\*To retain the DZOOM function, operate the OSD (DZOOM SAVE).

\*The function not supported to be saved is below. See the "3. Description of Each Function" for the detail of the function.

PICTURE ADJUST	=> DISP. FUNCTION	=> FREEZE
FUNCTIONS	=> WDR	=> FRAME VIEW SEL

### 3. Functions

Set each function by the OSD menu.

#### 3.1. EXPOSURE

##### 3.1.1. AE MODE

Set control method of shutter, slow shutter, gain and DC iris lens.

Default: AUTO

##### **AUTO**

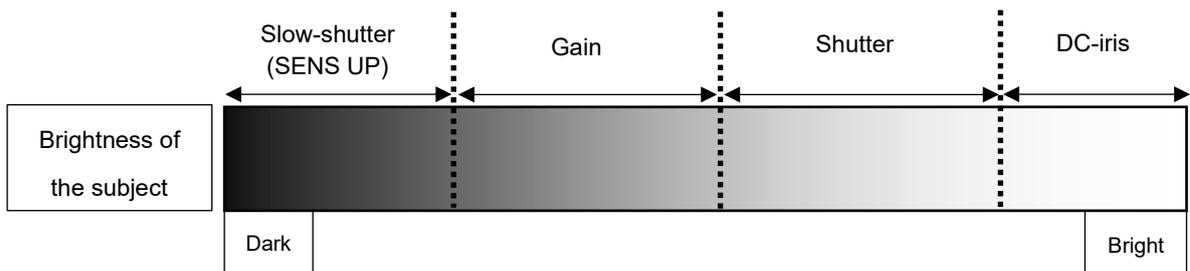
Automatically control the shutter speed (including SENS UP), gain and DC iris lens in accordance with the brightness of the subject.

When a bright subject is imaged, lower the brightness to the target value by the shutter speed and DC iris lens.

When a dark subject is imaged, heighten the brightness to the target value by the gain and slow shutter.

The max. and min. of the shutter speed is changed in accordance with the CVBS Format (Table 1). The longer max. shutter speed, the higher sensitivity for the subject in the dark, but the video resolution will be lowered.

See "3.1.7." for the DC iris lens and "3.1.5." for the slow shutter.



**Figure 5. AE = AUTO Behavior**  
(When slow shutter x2 or more, DC IRIS MODE = AUTO)

**Table 1. The Max. and Min. the Shutter Speed of Each CVBS Format**

CVBS Format	Max. & Min. of the Shutter Speed (sec.) (AE MODE=AUTO)
NTSC/EIA	1/60 - 1/10000
PAL/CCIR	1/50 - 1/10000

### **SHUT FIX**

Gain automatically controls the brightness of the subject but the shutter speed is fixed.

### **MANUAL**

The shutter speed (including SENS UP) and gain is fixed.

### **3.1.2. SHUTTER**

Set the shutter speed while the AE MODE is SHUT FIX or MANUAL. The configurable shutter speed is changed in accordance with the NTSC/EIA,PAL/CCIR version (Table 2).

**Table 2. The Configurable Shutter Speed for Each CVBS Format**

CVBS Format	Configurable Shutter Speed (sec.) (AE MODE=SHUT FIX/MANUAL)
NTSC/EIA	1/60, 1/120, 1/180, 1/240, 1/300, 1/500, 1/1000, 1/2000, 1/5000, 1/10000
PAL/CCIR	1/50, 1/100, 1/150, 1/200, 1/250, 1/500, 1/1000, 1/2000, 1/5000, 1/10000

### **3.1.3. GAIN**

Set the gain while the AE MODE is MANUAL.

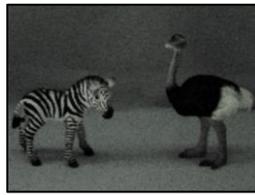
The configurable gain is 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65 and 72[dB].

### **3.1.4. AGC MAX**

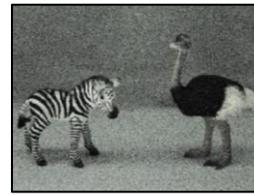
Set the max. value of gain while the AE MODE is AUTO or SHUT FIX.  
Selectable from OFF, LOW, MID and HIGH.



**AGC MAX = LOW**



**AGC MAX = MID**



**AGC MAX = HIGH**

**Figure 6. AGC MAX**

The max. value of gain is 0dB (OFF), 36dB (LOW), 50dB (MID), 72dB (HIGH).  
Default: HIGH

### **3.1.5. SENS UP**

Set the long exposure (slow shutter). The sensitivity will be higher due to extending the max. exposure time to 1 frame/field, but the video resolution will be lowered. The slow shutter is set as a multiple of the min. value (the slowest value) of the shutter speed.

The configurable value is OFF, x2, x3, x4, x5, x6, x7, x8, x9, x10, x12 and x15.  
Default: OFF

While the "AE MODE" is "AUTO", the slow shutter (SENS UP) works when it is set as x2 or more. When the subject is dark until gain reaches the max. value, the slow shutter will start to work. While the "AE MODE" is "MANUAL", the slow shutter will be fixed with the selected setting value of the slow shutter.

### **3.1.6. AE BRIGHT**

Set the target brightness while the AE MODE is AUTO or SHUT FIX.  
The higher value is set, the brighter it gets when the AE is converged.  
The setting value range is 0-10.  
Default: 6

### 3.1.7. DC IRIS

Open the setting menu by the ENTER operation while the cursor is matched with the DC IRIS. The following settings are configurable in the menu.

Default: MODE = OPEN, PWM OFFSET ADJ = 127, IRIS SPEED = 3

**Table 3. DC IRIS**

Menu Item	Value	Description
MODE	AUTO	Control the DC iris to the AE BRIGHT value. The DC iris works while the shutter speed reaches the max. value (when the subject is bright).
	<u>OPEN</u>	Fully open the DC iris.
	CLOSE	Fully close the DC iris.
PWM OFFSET ADJ	0 – 255 <u>(127)</u>	Set the easiness of the start moving the DC iris. When the value is large, it starts to move soon. Turn the power off of the camera after changing the setting and power the camera back on.
IRIS SPEED	0 – 5 <u>(3)</u>	Set the speed between the start moving until convergence of the DC iris. When the value is large, it converges quickly.
DEFAULT	-	Restore the DC iris settings to the factory default.

## 3.2. WHITE BALANCE

### 3.2.1. WHITE BALANCE MODE (MODE)

Set the WHITE BALANCE control mode.

This setting is not applicable for the WAT-3500.

Default: ATW

**Table 4. WHITE BALANCE - MODE**

Menu Item	Value	Description
MODE	<u>ATW</u>	Automatically follow WHITE BALANCE (Approx. 2000K-15000K) by matching the color temperature of a subject. The range of color can follow is wider than the INDOOR/OUTDOOR.
	ONE PUSH	Fix WHITE BALANCE at the specific color temperature. Combined use the WHITE BALANCE convergence movement (PUSH). Utilize the WHITE BALANCE convergence movement (PUSH) to complete while imaging such as a white paper.
	INDOOR	WHITE BALANCE automatically follows (Approx. 4600K-7200K). Set as easy to follow indoor light source (fluorescent light, etc.).
	OUTDOOR	WHITE BALANCE automatically follows (Approx. 4600K-10000K). Set as easy to follow outdoor light source (sunlight, etc.).
	MANUAL	Manually set WHITE BALANCE.

### 3.2.2. One Push Trigger (PUSH)

Complete the WHITE BALANCE convergence movement while the WHITE BALANCE mode is ONE PUSH. The B and R gain value after completing PUSH operation retains even when the power of the camera was turned off, or the WHITE BALANCE mode was changed.

When the "3.7. FACTORY RESET" is completed, the B and R gain value after completing PUSH operation will return to default settings.

### 3.2.3. B-Gain (BLUE)

Set the B and R gain value while the WHITE BALANCE mode is "MANUAL".

Larger the B gain, it will be bluer. The setting value range is 0-100.

Default: 50

### 3.2.4. R-Gain (RED)

Set the B and R gain value while the WHITE BALANCE mode is "MANUAL".

Larger the R gain, it will be redder. The setting value range is 0-100.

Default: 50

### 3.2.5. White Balance Tracking Speed (SPEED)

Set the follow-speed of WHITE BALANCE while the WHITE BALANCE mode is "ATW, INDOOR or OUTDOOR". The larger value, the quicker speed of the follow-speed of WHITE BALANCE when the subject color was changed. The setting value range is 0-7.

Default: 6

### 3.2.6. B-Gain Offset (OFFSET-B)

Set the offset by the B gain when WHITE BALANCE is converged while the WHITE BALANCE mode is "ATW, INDOOR or OUTDOOR". The larger value, when WHITE BALANCE is converged, it will be bluer. The setting value range is 0-100.

Default: 50

### 3.2.7. R-Gain Offset (OFFSET-R)

Set the offset by the R gain when WHITE BALANCE is converged while the WHITE BALANCE mode is "ATW, INDOOR or OUTDOOR". The larger value, when WHITE BALANCE is converged, it will be redder. The setting value range is 0-100.

Default: 50

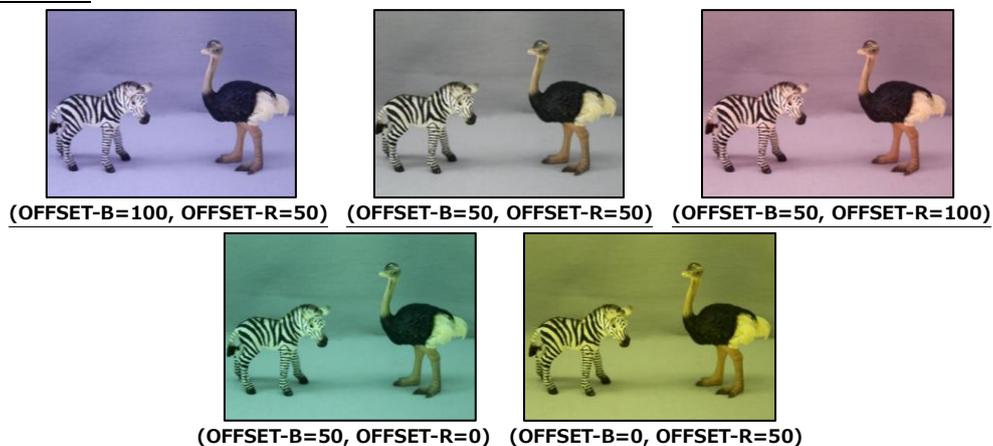
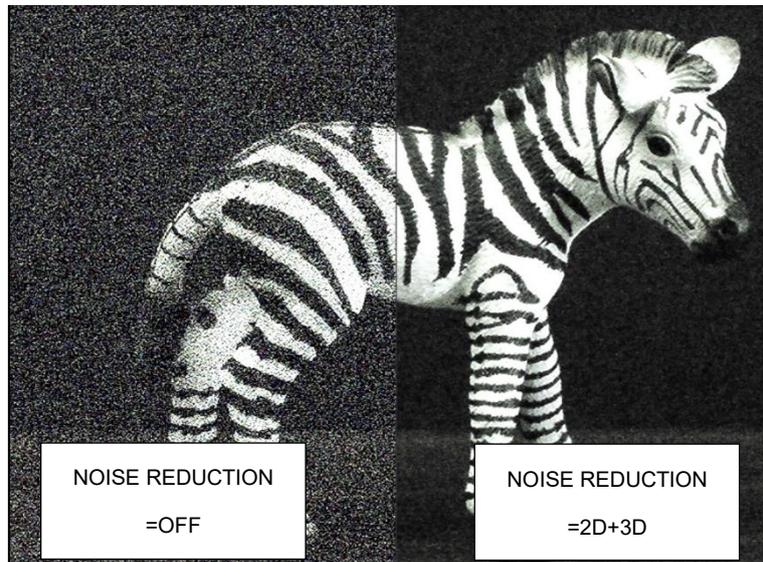


Figure 7. Change in MODE = ATW and OFFSET-B/R

### 3.3. NOISE REDUCTION



**Figure 8. NOISE REDUCTION**

#### **3.3.1. Noise Reduction Mode (MODE)**

Set the NR (Noise Reduction) control mode.

Default: 2D+3D

**Table 5. NOISE REDUCTION - MODE**

Menu Item	Value	Description
MODE	OFF	Not operating NR control.
	2D	The 2DNR works. Reduce noise by the edge preserved smoothing. The contour of the subject may be blurred.
	3D	The 3DNR works. Reduce noise by analyzing the differences as the noise between consecutive frames. The after-image may be obvious depends on a subject.
	<u>2D+3D</u>	Control NR by combining 3DNR and 2DNR.

### 3.3.2. Noise Reduction Level (LEVEL)

Set the strength of NR.

Default: AUTO

**Table 6. NOISE REDUCTION - LEVEL**

Menu Item	Value	Description
LEVEL	<u>AUTO</u>	Automatically control the strength of NR.
	LOW	Set the strength of NR to LOW. The noise increases when imaging a dark subject comparing with HIGH/MID, but the after-image will be less.
	MID	Set the strength of NR to MID. The noise and after-image is about medium between LOW/HIGH.
	HIGH	Set the strength of NR to HIGH. The noise decreases when imaging a dark subject comparing with LOW/MID, but the after-image will be obvious.

### 3.4. PICTURE ADJUST

#### 3.4.1. GAMMA CORRECT

Complete the ENTER operation while the GAMMA CORRECT is ON to open the setting menu.

Default: GAMMA CORRECT = ON, GAMMA = 0.45, Y LUT EXTEND = UNIFORM

#### OFF (1.0)

Turn off the "GAMMA CORRECT" ( $\gamma \neq 1.0$ ).

#### ON

Turn on "GAMMA CORRECT".

Complete the ENTER operation to open the setting menu.

**Table 7. GAMMA CORRECT**

Menu Item	Value	Description
GAMMA	OFF-BYPASS, 0.9, 0.8, 0.7, 0.6, 0.55, 0.5, <u>0.45</u> , 0.4	Set GAMMA CORRECT. $\gamma \neq 1.0$ is set by selecting OFF-BYPASS same as GAMMA CORRECT=OFF.
Y LUT EXTEND	<u>UNIFORM</u>	Uniformly correct the dark and bright part of the subject.
	EXTEND-F2C	Bright correction except on the bright part on the subject.



(GAMMA = OFF-BYPASS, Y LUT EXTEND = UNIFORM)



(GAMMA = 0.45, Y LUT EXTEND = UNIFORM)



(GAMMA = 0.45, Y LUT EXTEND = EXTEND-F2C)

**Figure 9. GAMMA / Y LUT EXTEND**

### **3.4.2. CONTRAST**

Adjust the contrast difference and color density difference of the image.

The setting value range is 0-20. Default: 11

### **3.4.3. BRIGHTNESS**

Adjust the brightness of the image.

The setting value range is 0-20. Default: 11

### **3.4.4. SATURATION**

Adjust the saturation of the image.

The setting value range is 0-20. Default: 12

This setting is not applicable for the WAT-3500.

### **3.4.5. HUE**

Adjust the hue of the image.

The setting value range is 0-20. Default: 10

This setting is not applicable for the WAT-3500.

### **3.4.6. EDGE**

Adjust the contour emphasizing level.

The setting value range is 0-20. Default: 5

### 3.4.7. AUTO SATURATE

Control the saturation while the illumination of the subject is low.

This setting is not applicable for the WAT-3500.

Default: MID

**Table 8. AUTO SATURATE**

Menu Item	Value	Description
AUTO SATURATE	OFF	Retain the saturation even while the illumination of the subject is low. The chroma noise may be obvious, and the white balance may be shifted from the edge.
	LOW	Set the control level of the saturation while the illumination of the subject is low. *The color of MASK/LINE becomes thin during low illuminance while PRIVACY MASK and/or CROSS LINE is displayed.
	<u>MID</u>	
	HIGH	



**AUTO SATURATE = OFF**



**AUTO SATURATE = MID**

**Figure 10. AUTO SATURATE**

(illuminance of the subject = Approx. 0.1lx, AGC = HIGH)

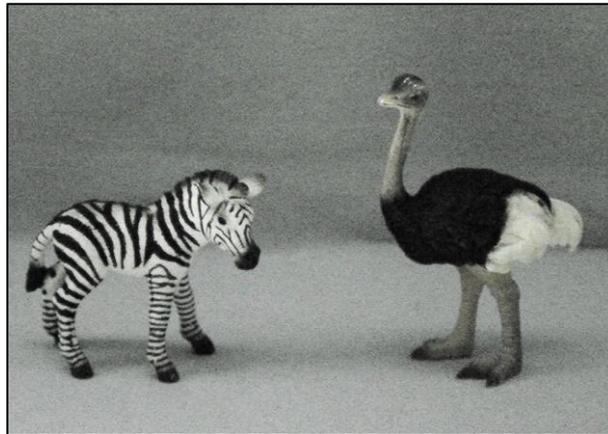
### 3.4.8. AUTO EDGE

Weaken the contour emphasizing during low illuminance.

Default: OFF

**Table 9. AUTO EDGE**

Menu Item	Value	Description
AUTO EDGE	<u>OFF</u>	Retain the saturation even while the illumination of the subject is low.
	ON	Weaken the contour emphasizing during low illuminance. The noise becomes slightly less but the contour of the subject may become blurred.



**AUTO EDGE = OFF**



**AUTO EDGE = ON**

**Figure 11. AUTO EDGE**

### 3.4.9. DISPLAY FUNCTION

Open the setting menu by the ENTER operation while the cursor is matched with "DISP.FUNCTION". Default: FREEZE = OFF, MIRROR = OFF, IMAGE EFFECT = OFF

**Table 10. DISPLAY FUNCTION**

Menu Item	Value	Description
FREEZE	<u>OFF</u>	Turn off FREEZE.
	ON	Turn on FREEZE.
MIRROR	<u>OFF</u>	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)	Invert to up, down, right and left of the image.
IMAGE EFFECT	<u>OFF</u>	Turn off IMAGE EFFECT.
	NEGATIVE	The negative-positive reversal on the contrast and color of the image.
	GREY	Make the image to achromatic color.
	REDDISH-1 - 4	Make the image to red monochrome. Color density range: 1-4 *This setting is not applicable for the WAT-3500.
	BLUISH-1 - 4	Make the image to blue monochrome. Color density range: 1-4 *This setting is not applicable for the WAT-3500.
GREENISH-1 - 4	Make the image to green monochrome. Color density range: 1-4 *This setting is not applicable for the WAT-3500.	

### 3.4.10. Reset Picture Adjust (DEFAULT)

PICTURE ADJUST: Restore the settings in the menu of PICTURE ADJUST to factory default.

## 3.5. FUNCTIONS

### 3.5.1. Digital Zoom (DZOOM)

Display the partly enlarged image.

Enlarged view by zoom and movable horizontally and vertically by pan and tilt.

Default: OFF

#### OFF

Turn off the "DZOOM" (1 time).

Note that the PTZ (Pan, Tilt, and Zoom) settings turn back to the original setting when DZOOM was turned OFF without DZOOM SAVE after the setting of the position of Pan/Tilt and ZOOM RATIO.

#### ON

Turn on the "DZOOM and PAN/TILT".

The setting which is saved as DZOOM SAVE after the setting of the position of PAN/TILT and ZOOM RATIO will be read.

Cannot use together the "DZOOM".

Open the setting menu by the ENTER operation.

The following settings are available in the menu.

- ZOOM CONTROL

Set the position of PAN/TILT and zoom magnification.

The setting range of DZOOM RATIO is below.

- x1.00 - x6.00

The setting range of PAN/TILT is 0x00 – 0xF0. The PAN/TILT setting value is not displayed.



(DZOOM = OFF)



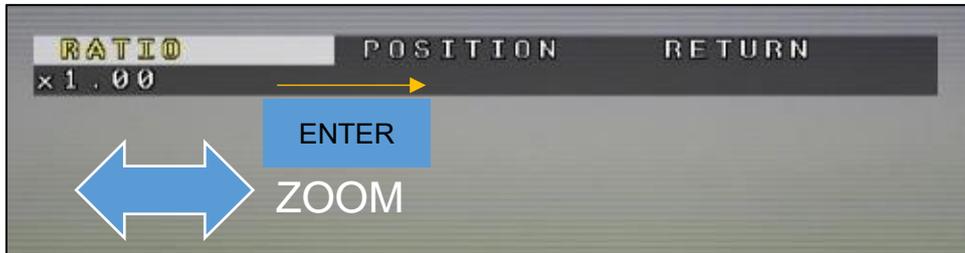
(DZOOM = ON, ZOOM = x3.00, PAN =34, TILT =134)

**Figure 12. DZOOM**

### [Setting Method of OSD]

-Set digital ZOOM RATIO: Operate LEFT/RIGHT while the cursor is on RATIO

\*Press "ENTER" to move the cursor to the "POSITION".

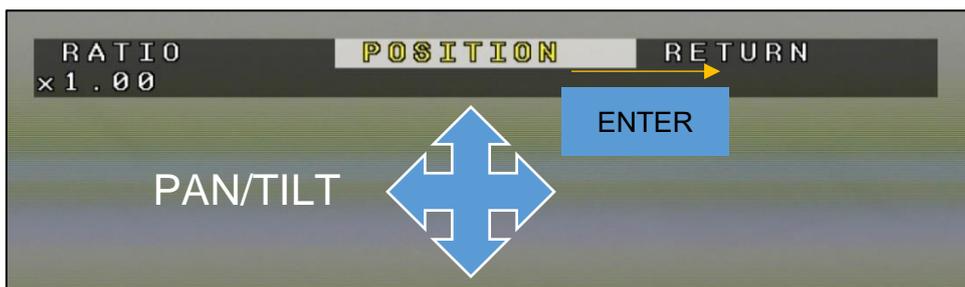


**Figure 13. ZOOM**

- Set the position of PAN/TILT:

Operate UP/DOWN/LEFT/RIGHT while the cursor is on POSITION

\*Press "ENTER" to move the cursor to the "RETURN". Press "ENTER" to return to the previous screen while the cursor is on to the "RETURN".



**Figure 14. PAN/TILT**

- DZOOM SAVE  
Save DZOOM setting to the camera.  
The setting of the position of PAN/TILT and ZOOM RATIO is while the DZOOM ON.
- DEFAULT  
Initialize all of the PAN/TILT, ZOOM RATIO settings.  
Note that the result by DZOOM SAVE will be deleted.

### 3.5.2. DEFOG

Correct by improving visibility of the image when the contrast becomes low by foggy or poor weather conditions. Default: OFF

#### OFF

Turn off the "DEFOG".

#### ON

Enable the "DEFOG (FIX)". Open the setting menu by the ENTER operation.

**Table 11. DEFOG (ON)**

Menu Item	Value	Description
STRENGTH	0 - 16( <u>8</u> )	Set the strength of "DEFOG (FIX)".

#### AUTO

Enable the "DEFOG (AUTO)". Control DEFOG in accordance with the subject situation.

Open the setting menu by the ENTER operation.

**Table 12. DEFOG (AUTO)**

Menu Item	Value	Description
THRESHOLD	0 - 3( <u>0</u> )	Set the threshold of "DEFOG (AUTO)". 0=correct the most, 3=correct the least
AUTO LEVEL	<u>HIGH</u>	Set the strength of DEFOG (AUTO).
	MID	
	LOW	

### 3.5.3. DWDR

Correct the contrast of the subject by the histogram equalization. Default: OFF

#### OFF

Turn off the "DWDR".

#### ON

Enable the "DWDR (FIX)".

Correct the contrast of the subject by the histogram equalization on the bright part.

Open the setting menu by the ENTER operation.

**Table 13. DWDR (ON)**

Menu Item	Value	Description
STRENGTH	0 – 16( <u>8</u> )	Bright correction on the dark part.
SATURATION	0 – 16( <u>0</u> )	Darken the bright part to make less difference with the dark part.
LOCAL RATIO	0 – 16( <u>0</u> )	Reduce the difference of the medium part of the contrast.

#### AUTO

Enable the "DWDR (AUTO)".

Automatically control the DWDR in accordance with the subject situation.

Open the setting menu by the ENTER operation.

**Table 14. DWDR (AUTO)**

Menu Item	Value	Description
SAT. SYNC	<u>OFF</u>	Turn off the control for lowering the brightness of the bright part.
	ON	Control for lowering the brightness of the bright part.
AUTO LEVEL	<u>HIGH</u>	Set the strength of "DWDR (AUTO)".
	MID	
	LOW	

### 3.5.4. Backlight Compensation (BACKLIGHT)

Make more visible the subject with backlighting, etc.

Default: OFF

#### OFF

Turn off the "BACKLIGHT". Control the exposure by the entire image information.

#### BLC

Match the exposure to the specified area on the image.

The dark part will be more visible when metering only the dark part with backlighting.

Open the setting menu by the ENTER operation.

Table 15. BLC

Menu Item	Value	Description
BLC	OFF	Unable BLC.
	<u>ON</u>	Enable BLC.
SIZE /POSITION	-	Set the BLC area size and position. Size setting: Operate UP/DOWN/LEFT/RIGHT while the cursor is on "SIZE". Position setting: Operate UP/DOWN/LEFT/RIGHT while the cursor is on "POSITION".
AREA DISPLAY	OFF	Hide the BLC area.
	<u>ON</u>	Display the BLC area.
DEFAULT	-	Restore the BLC setting to default.



BACKLIGHT = OFF



BACKLIGHT = BLC

Figure 15. BLC

## HSBLC

Match the exposure to the specified area on the entire image except the brightest part.

Make more visible the part except the headlight while imaging the subject including high brightness part. Open the setting menu by the ENTER operation.

**Table 16. HSBLC**

Menu Item	Value	Description
AREA	OFF	Hide the HSBLC area.
DISPLAY	<u>ON</u>	Display the HSBLC area.
SIZE /POSITION	-	Set the HSBLC area size and position. Size setting: Operate UP/DOWN/LEFT/RIGHT while the cursor is on "SIZE". Position setting: Operate UP/DOWN/LEFT/RIGHT while the cursor is on "POSITION".
LEVEL	0-20( <u>3</u> )	Set the threshold to recognize the high brightness part.
BLACK MASK	OFF	Does not perform masking on the high brightness part.
	<u>ON</u>	Apply black masks on the high bright part. The pixel of the masked part is excluded from metering area.
DEFAULT	-	Restore the HSBLC setting to the default.



**BACKLIGHT = OFF**



(BACKLIGHT = HSBLC, BLACK MASK = ON)



(BACKLIGHT = HSBLC, BLACK MASK = OFF)

**Figure 16. HSBLC**

### **3.5.5. Pixel Binning (BINNING)**

Enhance sensitivity by combining the A/D value of the adjacent pixels.

The resolution of the image will be low.

Default: OFF

#### **OFF**

Turn off the "BINNING".

#### **ON**

Turn on the "BINNING".



(AE MODE = MANUAL, SHUTTER = 1/60s, GAIN = 0dB, BINNING = OFF)



(AE MODE = MANUAL, SHUTTER = 1/60s, GAIN = 0dB, BINNING = ON)

**Figure 17. BINNING**

### **3.5.6. DEFECT PIXEL COMPENSATION**

Correct inconspicuously the defect pixel.

Default: ON

#### **OFF**

Turn off the "DEFECT PIXEL COMPENSATION".

#### **ON**

Turn on the "DEFECT PIXEL COMPENSATION".

\*The subject, which is similar with a defect pixel, may be corrected when it was imaged.  
In this case, turn off this setting.

### 3.5.7. Multiple Exposure-Type WDR (WDR)

Make more visible of the subject with a large contrast.

Synthesize one frame of the WDR image from the two frames of the long exposure and short exposure. The detail setting of the WDR image synthesis from the setting menu.

The video resolution when WDR=ON will be lower than when WDR=OFF.

Default: OFF



WDR = OFF



FRAME VIEW SEL = SHORT



FRAME VIEW SEL = LONG



WDR = ON

Figure 18. WDR

**OFF**

Turn off the “WDR”.

**ON**

Turn on the “WDR”. Open the setting menu by the ENTER operation.

**Table 17. WDR**

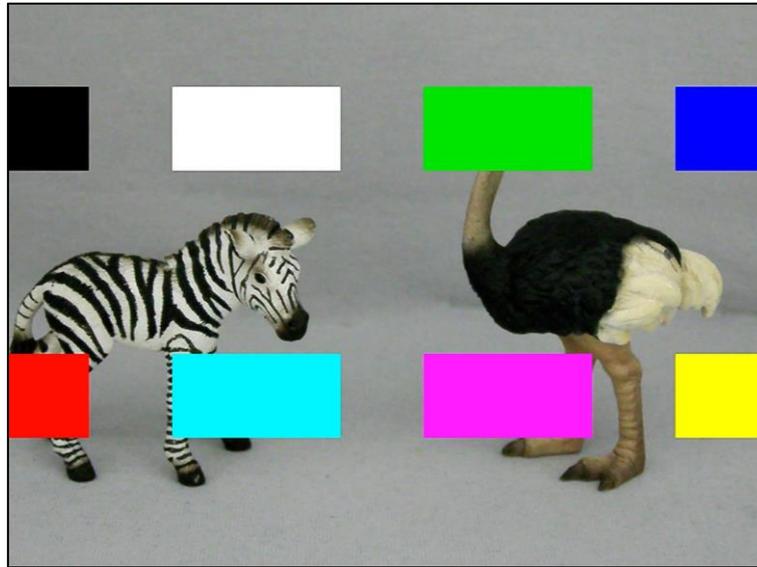
Menu Item	Value	Description
FRAME VIEW SEL	<u>WDR ON</u>	Display the WDR image synthesis.
	LONG	Display only the long exposure image.
	SHORT	Display only the short exposure image.
WDR STRENGTH	0-29( <u>12</u> )	Set the strength of the WDR process.
LOCAL CONTRAST	0-5( <u>2</u> )	Set the correction level of the contrast when the WDR synthesis.
WDR AE MODE	<u>AUTO</u>	Automatically adjust the shutter and gain during the WDR is working. It works more when the contrast of the subject change largely. The time the WDR motion convergence will be longer.
	MANUAL	The shutter and gain value is fixed during the WDR is working. The time the WDR motion convergence will be shorter.
AE BRIGHT	0-19( <u>10</u> )	Set the target value of the brightness when WDR AE MODE=AUTO.
GAIN	0-19( <u>0</u> )	Set gain when WDR AE MODE=MANUAL.
SHUTTER	0-19( <u>19</u> )	Set shutter when WDR AE MODE=MANUAL.
EXPOSURE RATIO	<u>1:32</u>	Set the ratio of the exposure time between short and long time exposure. Set as 1:16 to extend the short time exposure time.
	1:16	
DEFAULT	-	Restore the WDR settings to the default.

### 3.5.8. PRIVACY MASK

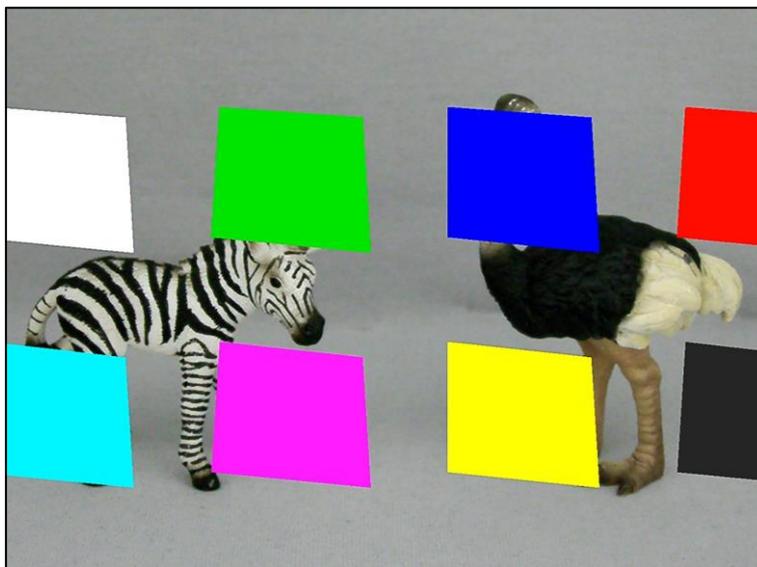
Mask arbitrary area in the image.

8 different size, position and color masks can be displayed.

Cannot use together the "PRIVACY MASK" and "CROSS LINE".



TYPE = SQUARE



TYPE = POLYGON

Figure 19. PRIVACY MASK

Open the setting menu by the ENTER operation while the cursor is on the "PRIVACY MASK". The settings in the Table 18 are available in the menu.

Default: MODE = OFF

**Table 18. PRIVACY MASK**

Menu Item	Value	Description
MODE	OFF	Turn off the "PRIVACY MASK".
	ON	Turn on the "PRIVACY MASK".
TYPE	SQUARE	Set the mask with adjustable square size.
	POLYGON	Set the mask adjustable the 4 corner coordinates.
MASK NO.	MASK 1-8	Select the mask No. of the setting to be edited.
DISPLAY	OFF	Hide the mask.
	ON	Display the mask.
COLOR	BLACK,WHITE, GREEN,BLUE, RED,CYAN, MAGENTA, YELLOW, GRAY-1 - 6	Set the mask color. *This setting is not applicable for the WAT-3500.
POLY SELECT	L-TOP, R-TOP, L-BOTTOM, R-BOTTOM	Select the corner to adjust the position when the TYPE=POLYGON is set. L-TOP=Left top ,           R-TOP=Right top L-BOTTOM=Left bottom,   R-BOTTOM=Right bottom
POSITION-X	0-255	[TYPE=SQUARE] Set the horizontal position of the mask. [TYPE=POLYGON] Set the selected corner coordinate (H) with POLY SELECT.
POSITION-Y	0-216	[TYPE=SQUARE] Set the vertical position of the mask. [TYPE=POLYGON] Set the selected corner coordinate (V) with POLY SELECT.
SIZE-X	1-60	[TYPE=SQUARE] Set the horizontal size of the mask.
SIZE-Y	1-33	[TYPE=SQUARE] Set the vertical size of the mask.
DEFAULT	-	Restore the "PRIVACY MASK" setting to the default.

### 3.5.9. CROSS LINE

Display vertical/horizontal line in the image. 8 lines (4 cross lines) for the total can be displayed with the setting of thickness, position, color and vertical/horizontal of each line.

Cannot use together the "PRIVACY MASK" and "CROSS LINE".

Open the setting menu by the ENTER operation while the cursor is on the "CROSS LINE". The settings in the Table 19 are available in the menu.

Default: MODE = OFF

**Table 19. CROSS LINE**

Menu Item	Value	Description
MODE	OFF	Turn off the "CROSS LINE".
	ON	Turn on the "CROSS LINE".
LINE NO.	LINE 1-8	Select the line No. of the setting to be edited.
DISPLAY	OFF	Hide the line.
	ON	Display the line.
COLOR	WHITE, GREEN, BLUE, RED, CYAN, MAGENTA, YELLOW, GRAY-1 - 6, BLACK	Set the line color. *This setting is not applicable for the WAT-3500.
DIRECTION	VERTICAL	Make the line direction vertical.
	HORIZONTAL	Make the line direction horizontal.
POSITION	-959 - 959	Set the line position.
WIDTH	2 - 127	Set the line width.
DEFAULT	-	Restore the "CROSS LINE" to the default.

The line 1 and 2 are displayed and line 3 -8 are hidden with the default when MODE = ON. Turn on the "DISPLAY" and select line 3-8 to display 3 or more lines.



**Figure 20. CROSS LINE**

### 3.6. SYSTEM

#### **3.6.1. S/W INFO**

Display the software information.

Open the software information display menu by the ENTER operation while the cursor is on the "S/W INFO".

**Table 20. S/W INFO**

Menu Item	Value	Description
S/W Ver	-	Display the version of the software.
S/W Date	-	Display the release date of the software.

### 3.6.2. CAM TITLE

Display letters on the right top on the screen. Default: OFF

#### OFF

Turn off the "CAM TITLE".

#### ON

Turn on the "CAM TITLE". Open the setting menu by the ENTER operation.

**Table 21. CAM TITLE**

Menu Item	Value	Description
TITLE	A-Z, a-z, [blank], !, ", #, \$, %, &, , (, ), *, +, ', -, , /, 0-9	Set the letter to display. Max. 10 letters. Select letters by LEFT/RIGHT, and choose the next letter by ENTER.
TEXT COLOR	WHITE, BLACK OP, WHITE OP, NO COLOR, BLACK, BLUE, GRAY, YELLOW	Set the letter color *BLUE, YELLOW is not applicable for the WAT-3500.



**Figure 21. CAM TITLE**

### 3.6.3. MENU COLOR

Set the OSD menu color. Open the software information display menu by the ENTER operation while the cursor is on the "MENU COLOR".

Default: TEXT COLOR = WHITE, TEXT (H) COLOR = YELLOW,  
B/G COLOR = BLACKOP, B/G (H) COLOR = WHITE OP

**Table 22. MENU COLOR**

Menu Item	Value	Description
TEXT COLOR	WHITE, BLACK OP, WHITE OP, NO COLOR, BLACK, BLUE, GRAY, YELLOW	Set the letter color of the OSD menu. *BLUE, YELLOW is not applicable for the WAT-3500.
TEXT(H) COLOR	WHITE, BLACK OP, WHITE OP, NO COLOR, BLACK, BLUE, GRAY, YELLOW	Set the selected letter color of the OSD menu. *BLUE, YELLOW is not applicable for the WAT-3500.
B/G COLOR	WHITE, BLACK OP, WHITE OP, NO COLOR, BLACK, BLUE, GRAY, YELLOW	Set the background color of the OSD menu. *BLUE, YELLOW is not applicable for the WAT-3500.
B/G(H) COLOR	WHITE, BLACK OP, WHITE OP, NO COLOR, BLACK, BLUE, GRAY, YELLOW	Set the selected background color of the OSD menu. *BLUE, YELLOW is not applicable for the WAT-3500.

### 3.6.4. MENU POSITION

Set the position of the OSD menu. Selectable from below. Default: DEFAULT

#### **DEFAULT**

Set the menu position to the center.

#### **TOP-LEFT**

Set the menu position to the left top.

#### **TOP-RIGHT**

Set the menu position to the right top.

### **3.6.5. CVBS FORMAT**

Set the CVBS FORMAT. Selectable from below.

The default setting is marked on the serial label attached on the packing box or on the camera. (NTSC or PAL for the WAT-2500 and EIA or CCIR for the WAT-3500.)

Both WAT-2500 and WAT-3500 crop the portion of 1920 x 1080 pixels captured by the image sensor, excluding the 240pix at the beginning and end of the horizontal direction, to 1440 x 1080 pixels (aspect ratio 4:3) and then output the image in the following output formats.

#### **[WAT-2500]**

**NTSC**

**PAL**

#### **[WAT-3500]**

**EIA**

**CCIR**

### **3.7. FACTORY RESET**



**Figure 22. FACTORY RESET**

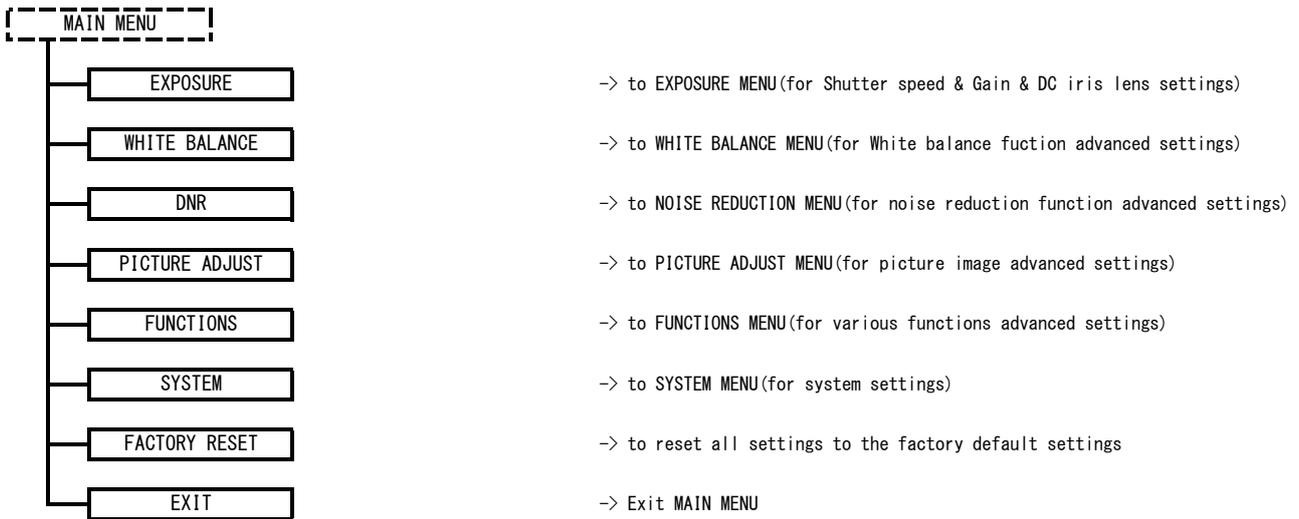
Restore the factory default by completing the ENTER operation while the cursor is on the "YES", and the camera restart after a specified period.

#### 4. OSD menu tree

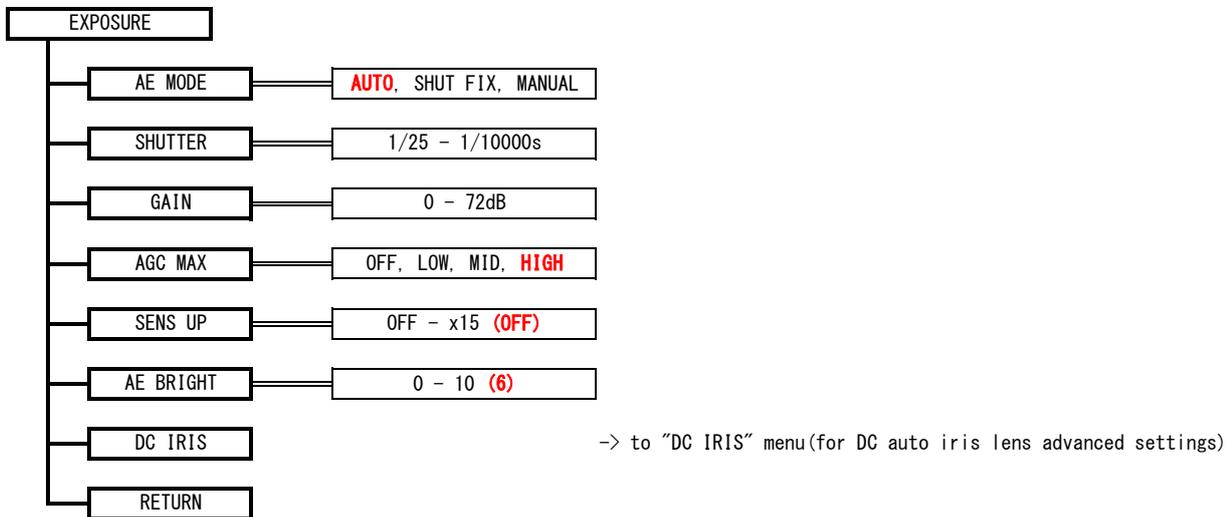
- Legend:
- Represents OSD menu item
  - Represents the operation by UP, DOWN and ENTER key of the remote controller
  - Represents the operation by RIGHT, LEFT and ENTER key of the remote controller
  - Represents a selectable mode and setting value of each menu item
  - Represents the title on the OSD and not a setting item

Default : in Red

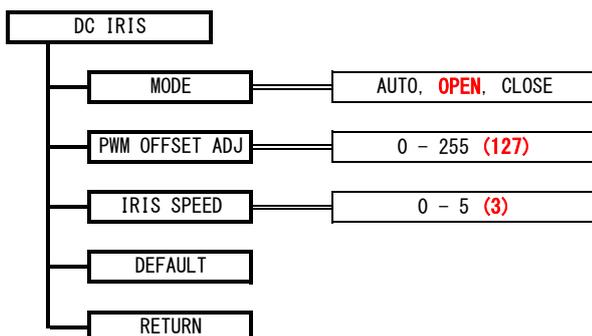
#### MAIN MENU



#### EXPOSURE

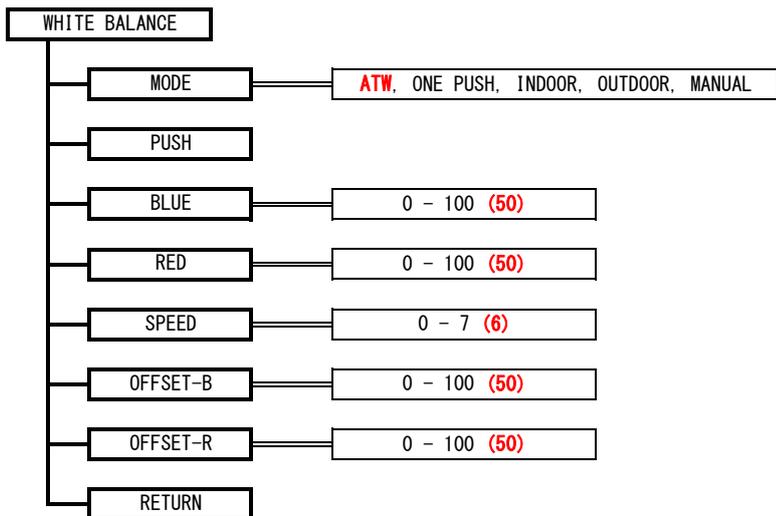


#### DC IRIS

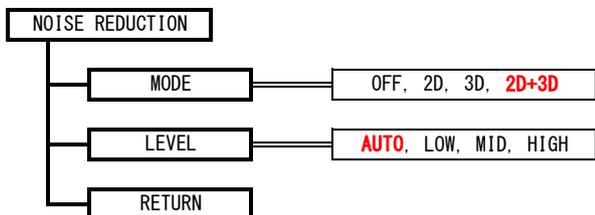


**OWHITE BALANCE**

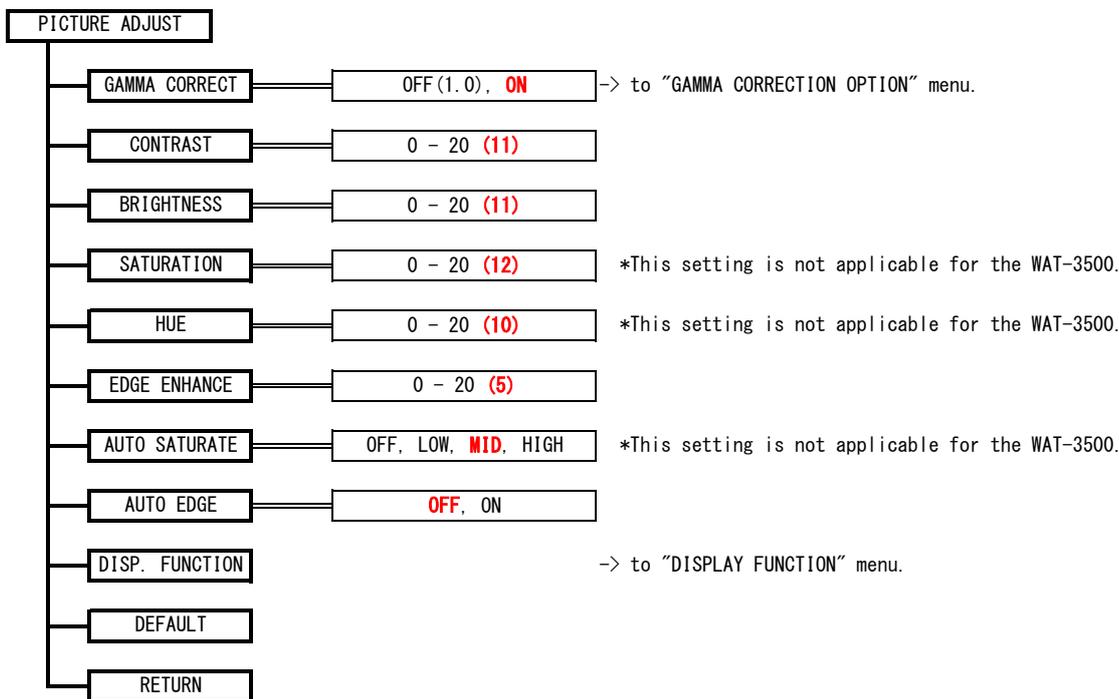
\*This setting is not applicable for the WAT-3500.



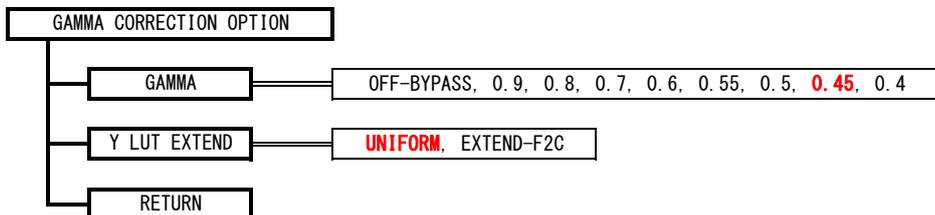
**ONoise REDUCTION**



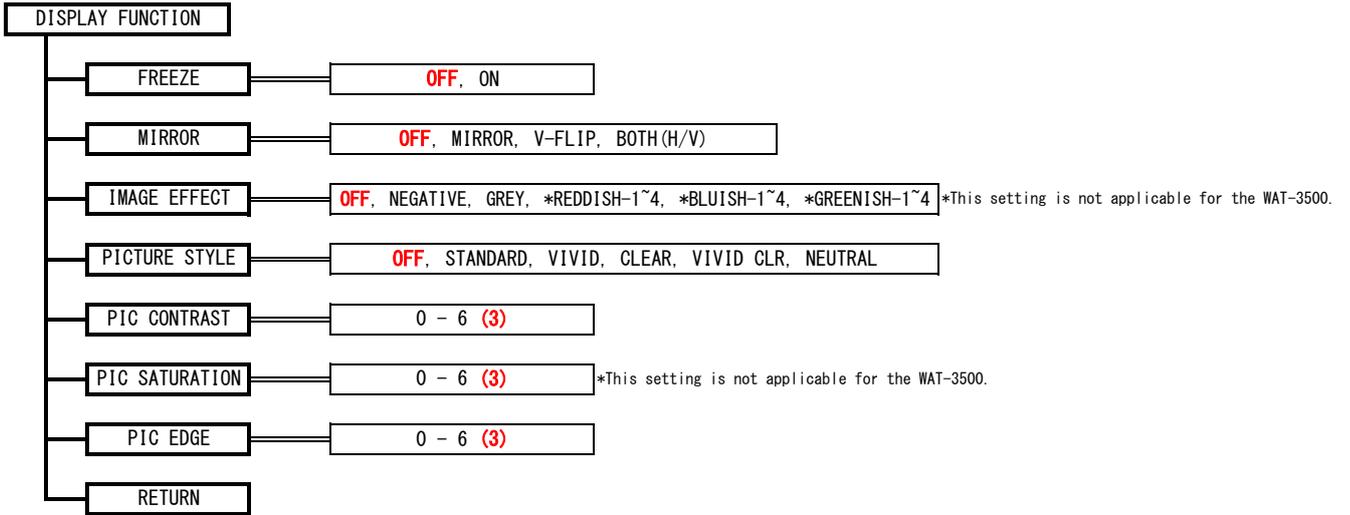
**OPICTURE ADJUST**



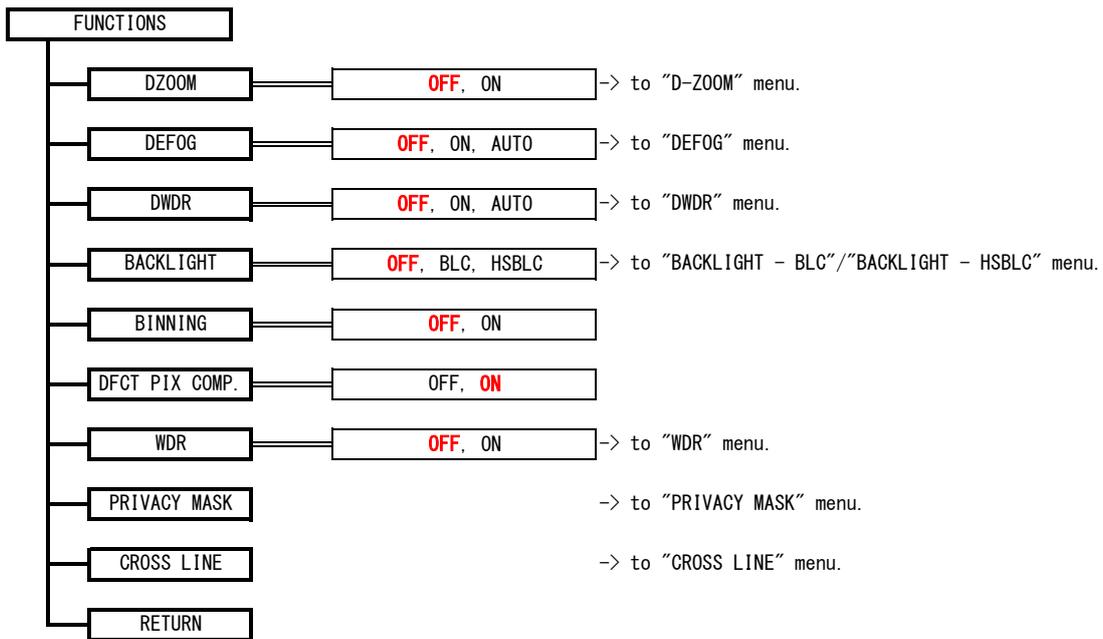
**OGAMMA CORRECTION OPTION**



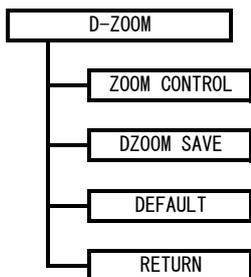
**ODISPLAY FUNCTION**



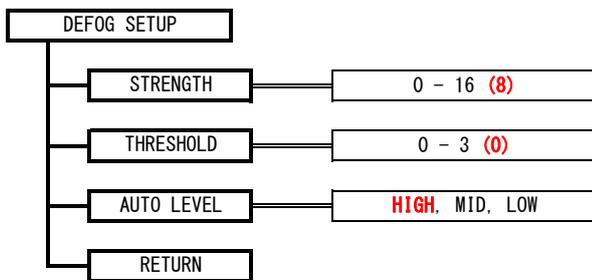
## OFUNCTIONS



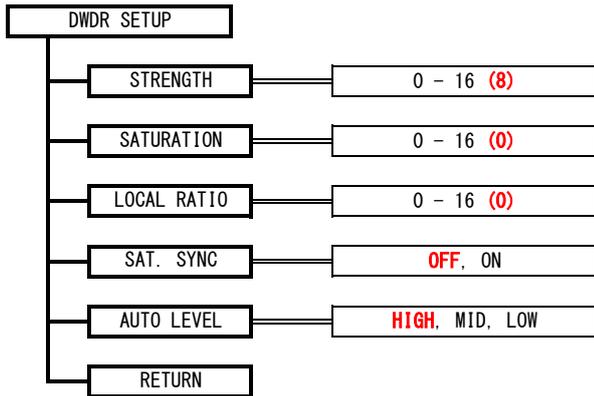
## OD-ZOOM



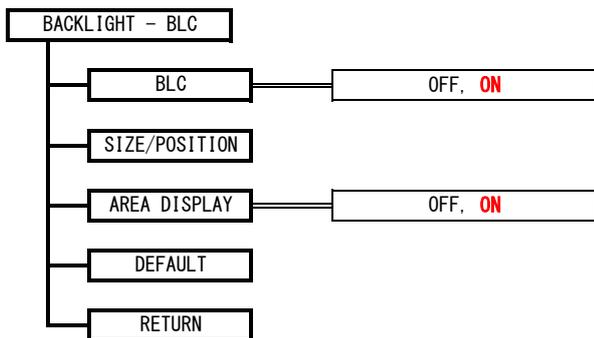
## ODEFOG SETUP



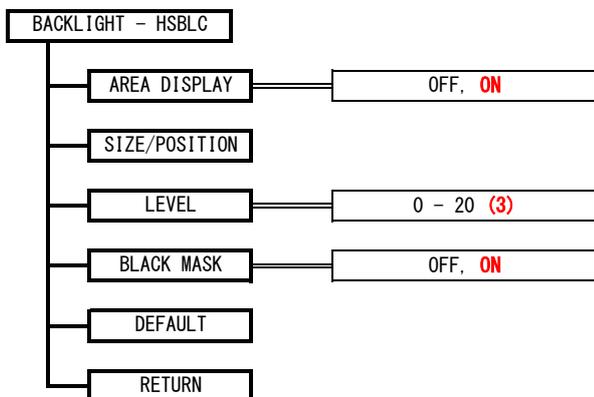
**ODWDR SETUP**



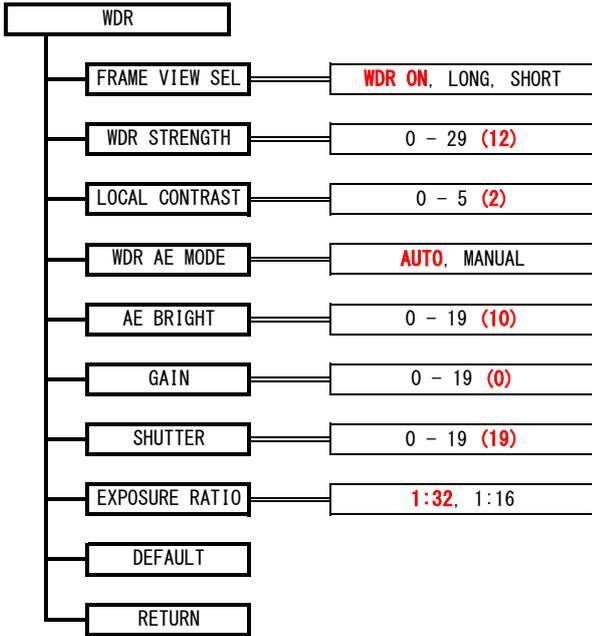
**OBACKLIGHT - BLC**



**OBACKLIGHT - HSBLC**



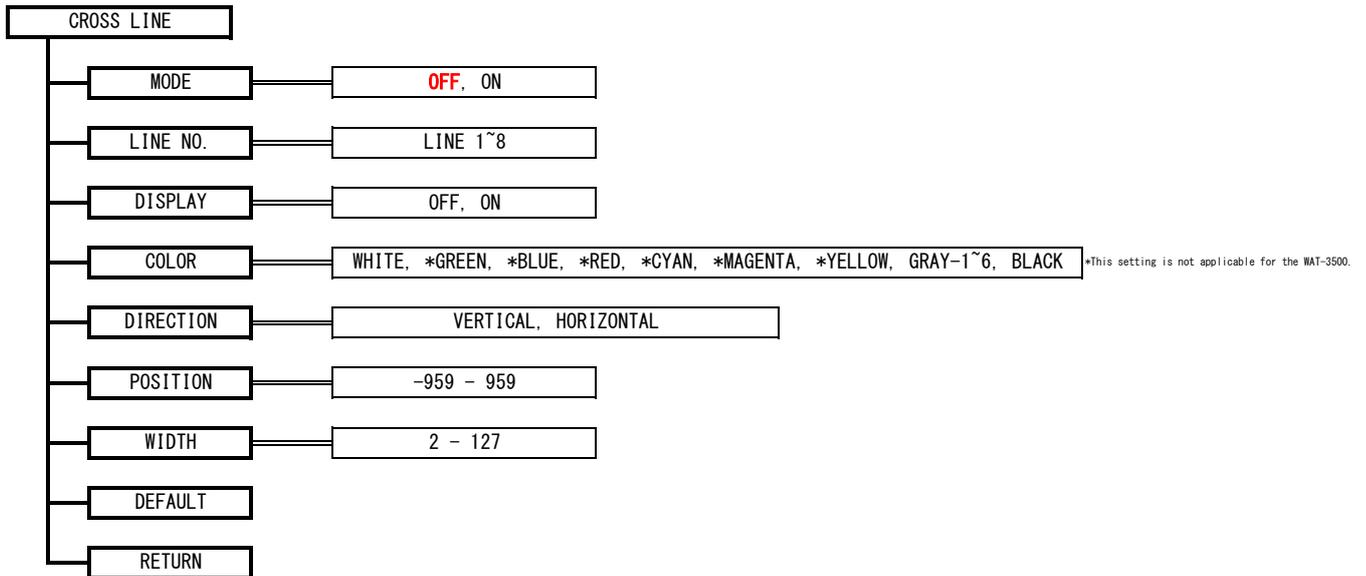
OWDR



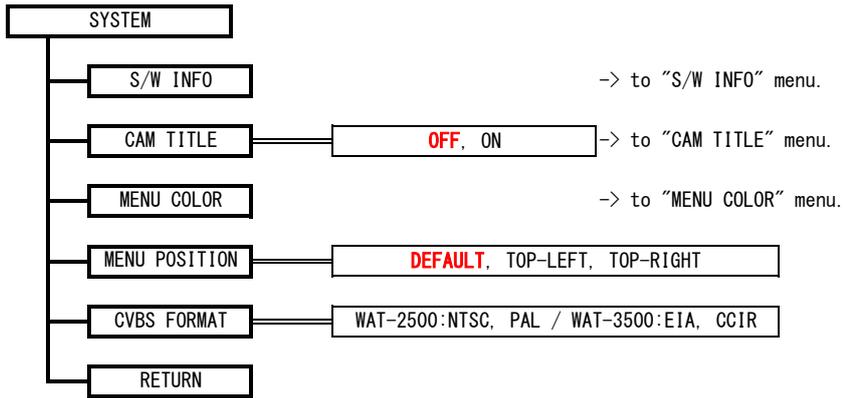
**OPRIVACY MASK**



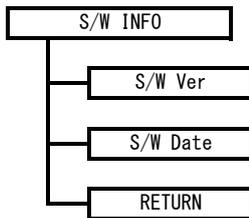
**OCROSS LINE**



### OSYSTEM



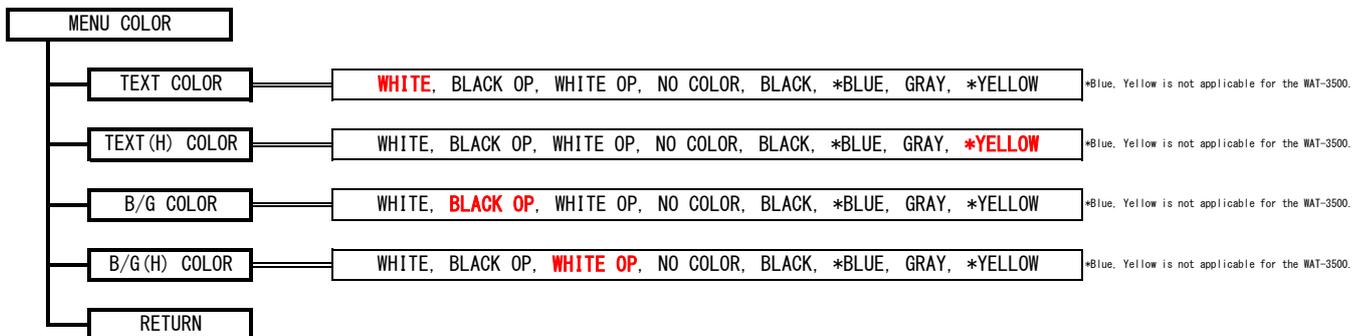
### OS/W INFO



### OCAM TITLE



### OMENU COLOR



**OFACTORY RESET**

FACTORY RESET ?

NO

YES