

WAT-233

OSD User's Manual

Rev. 1.10

Watec Co., Ltd.

2014/2/3

Change History

Rev. No.	Date	Changes	Remarks
1.00	2014/1/23		Initial Release
1.10	2014/2/3	*Add an adjustment procedure for auto iris lens	Second Release

【Contents】

1.	Introduction	5
2.	OSD Menu Operation	6
3.	MAIN MENU/SETUP MENU	8
3.1	OSD Menu	8
3.2	Auto Iris Lens Control Settings (LENS)	9
3.2.1	Auto Iris Lens Control Mode (MODE)	9
3.2.2	Auto Iris Lens Speed Control (SPEED)	10
3.3	Shutter/Gain Settings	12
3.3.1	Automatic Exposure Control (AUTO)	13
3.3.1.1	Shutter Speed (SHUTTER)	13
3.3.1.2	Brightness Settings, High Luminance Side (BRIGHTNESS)	13
3.3.1.3	Low Luminance Side Exposure Control (MODE)	14
3.3.1.4	Auto Gain Control (AGC HI/LO)	15
3.3.1.5	Brightness Settings, Low Luminance Side (BRIGHTNESS)	16
3.3.2	Manual Exposure Control (MANUAL)	17
3.3.2.1	Manual Exposure Control Mode (MODE)	17
3.3.2.2	Shutter Speed (LSHUT/SSHUT)	18
3.3.2.3	Manual Gain (MGC)	19
3.4	Picture Adjustment (ADJUST)	20
3.4.1	Image Flip (MIRROR)	20
3.4.2	Contrast (CONTRAST)	20
3.4.3	Edge Enhancement (SHARPNESS)	21
3.4.4	Chroma Settings (B-HUE/R-HUE/R-GAIN/B-GAIN)	22
3.4.5	γ (GAMMA)	23
3.5	White Balance (WB)	24
3.5.1	Auto Trace White Balance (ATW)	25
3.5.2	Auto White Balance (AWB)	25
3.5.3	Preset White Balance (3200K/4300K/5100K/6300K)	26
3.5.4	Anti Chroma Rolling White Balance (ACR)	26
3.5.5	Push White Balance (PWB)	27
3.6	Wide Dynamic Range/Back Light Compensation (WDR/BLC)	28
3.6.1	Wide Dynamic Range (WDR)	29
3.6.2	Highlight Suppressed Backlight Compensation (HSBLC)	30
3.6.3	Back Light Compensation (BLC)	31
3.7	3D Noise Reduction (3DNR)	32
3.8	Day/Night Function (DAY/NIGHT)	33
3.8.1	Day Mode (DAY)	33
3.8.2	Night Mode (NIGHT)	33
3.8.3	Automatic Switching Mode (AUTO)	34
3.8.3.1	Day⇌Night Switching Control (DAY→NIGHT/NIGHT→DAY/DELAY CTL)	34
3.8.3.2	Burst Setting (BURST)	36
3.8.3.3	IR Mode (IR MODE)	37
3.8.3.4	Day/Night State Output Mode (D/N STATE OUT)	40
3.8.3.5	Day/Night function External Control Mode (D/N EXT CTL)	40
3.9	Digital Zoom (ZOOM)	41

<u>3.10</u>	Defog (DEFOG)	42
<u>3.11</u>	Privacy Masking (PRIVACY)	43
<u>3.12</u>	Motion Detection (MOTION)	47
<u>3.13</u>	Blemish Pixel Compensation (BPC)	50
<u>3.14</u>	Synchronization Method Display (SYNC)	52
<u>3.15</u>	Camera ID (CAMERA ID)	52
<u>3.16</u>	RS485 Communication (RS485)	55
<u>3.17</u>	Factory Reset (CAMERA RESET)	58
<u>3.18</u>	Save Settings (SAVE ALL)	58
<u>3.19</u>	EXIT Menu (EXIT)	58
<u>4.</u>	OSD Menu Tree	59

1. Introduction

- The WAT-233 user's manual describes the functions and the adjustment methods using the On Screen Display (OSD).
- When the settings of the WAT-233 is changed according to the WAT-233 user's manual, check to see that the operation and the effects of the changes made to the camera are acceptable.
- The WAT-233 user's manual is subject to change by design and the specifications of the product without notice.
- The copyright of the WAT-233 user's manual shall belong to Watec Co., Ltd. Copying in whole, or in part without the authorization of the holders permission is prohibited.

2. OSD Menu Operation

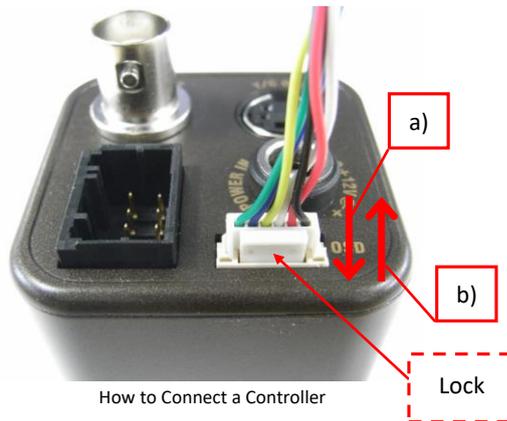
The functions and parameter settings of WAT-233 can be changed by OSD (On Screen Display).

When operating OSD, Controller is used.

- a) When using the Controller, vertically insert the connector fully until it clicks.
- b) When disconnecting the Controller, pull the connector while pinching the Lock.

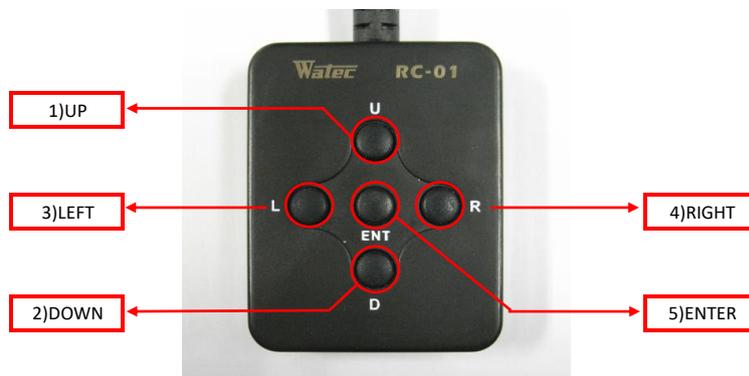


Controller Overview



How to Connect a Controller

Controller has five buttons: UP/DOWN/LEFT/RIGHT/ENTER.



The operation portion of the Controller

Use 5 buttons above to operate OSD Menu.

1)UP / 2)DOWN : Mainly to move the cursor up and down to select an item on the lists on OSD Menu.

3)LEFT / 4)RIGHT : Mainly to adjust and change the functions on each list on OSD Menu.

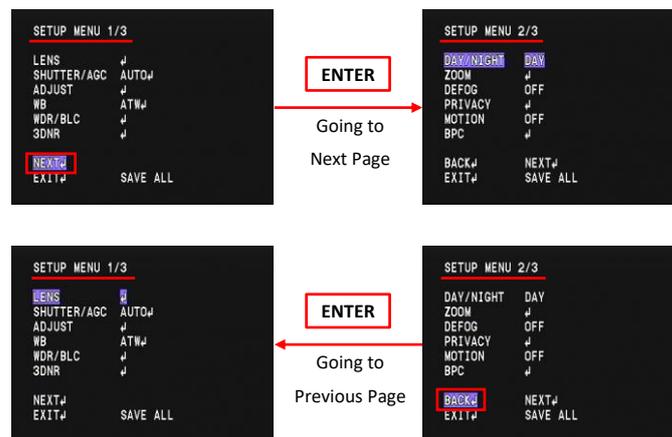
5)ENTER : Mainly to execute the selected list and function on OSD Menu.

The symbol "⌂" will be on some lists on OSD Menu to indicate that there are Sub Menus or selectable options by pressing 5)Enter.

Please refer to the following model operation pictures on the basic Controller usage.
 The below pictures show the OSD operation when WB (ATW) is selected as default position.



Switching the Menu

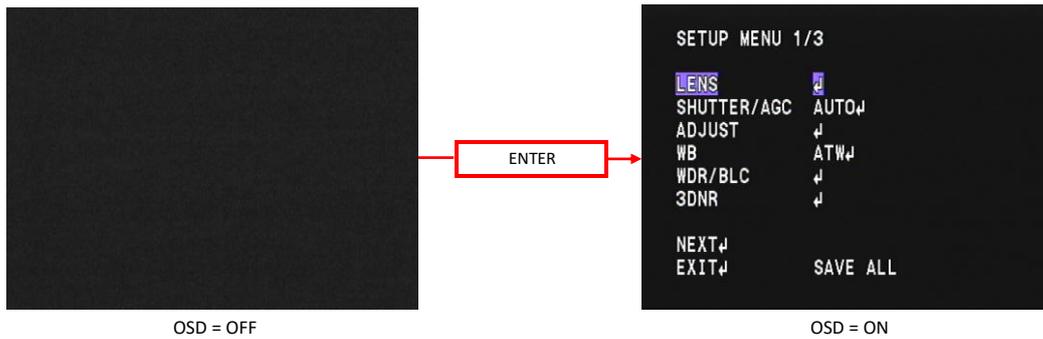


* From the next page, each button is written as follows.
 1)UP is written as "UP key", and 2)DOWN is written as "DOWN key".
 In addition, 3)LEFT is written as "LEFT key", and 4)RIGHT is written as "RIGHT key".
 ENTER to be used for execution / decision is written as "ENTER key".

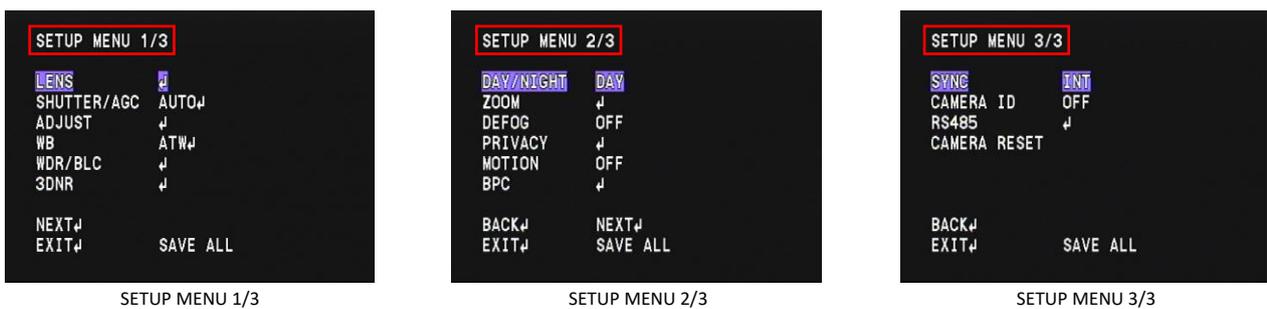
3. MAIN MENU/SETUP MENU

3.1 OSD Menu

When pressing ENTER key, SETUP menu will appear on the screen.



OSD Menu is consist of 3 pages (SETUP MENU1/3, SETUP MENU2/3 and SETUP MENU3/3).

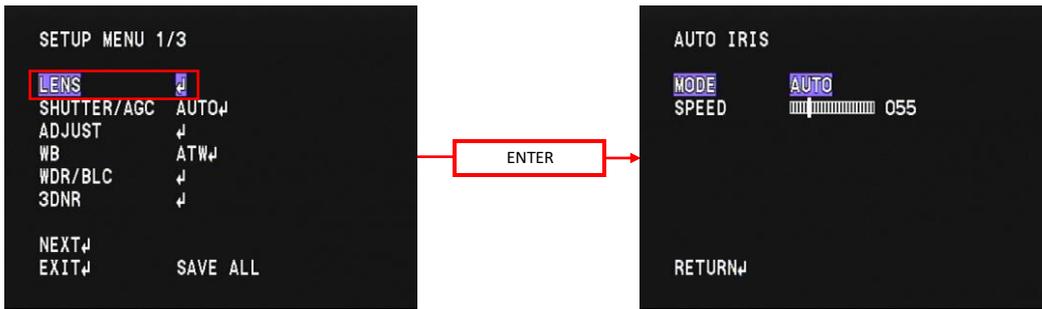


*** When you change the camera setting through the OSD, you can save the changed setting by executing "SAVE ALL". Please make sure to save the setting before turning off the power when you set the optimum function in customer's environment. When you turn off the power without saving, please be careful as it will return to the state before the setting change.**

Please refer to "3.18 Save Settings (SAVE ALL)" when saving the settings.

3.2 Auto Iris Lens Control Settings (LENS)

Set the mode when using auto iris lens. Move the cursor to LENS with UP/DOWN key and press the ENTER and AUTO IRIS menu will be displayed. Move the cursor up and down and adjust using LEFT / RIGHT key for the item you want to adjust.



3.2.1 Auto Iris Lens Control Mode (MODE)

Set auto iris lens control mode (MODE). Use LEFT / RIGHT key to select the lens aperture control mode.

*Default : "AUTO"



LENS	OPERATION
AUTO	Control the lens aperture automatically. *AUTO is recommended for standard operation.
OPEN	Open the lens aperture fully.
CLOSE	Close the lens aperture fully.

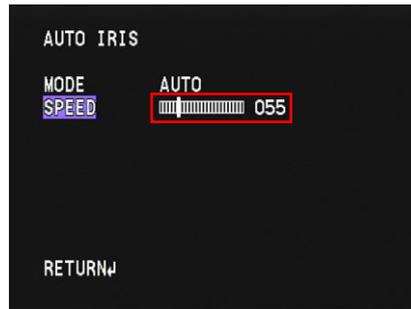
* This function will be the following control state by combining with SHUTTER/AGC of "3.3 Shutter/Gain Settings (SHUTTER/AGC)".

Lens in use	SHUTTER/AGC	(LENS) MODE	OPERATION
Auto Iris	AUTO	AUTO	Control the lens aperture automatically. *AUTO is recommended for using auto iris lens.
		OPEN	Open the lens aperture fully.
		CLOSE	Close the lens aperture fully.
	MANUAL	AUTO	The setting is available, but it does not work. The lens aperture opens fully.
		OPEN	Open the lens aperture fully.
		CLOSE	Close the lens aperture fully.
Manual	AUTO MANUAL	AUTO	LENS (MODE) setting is available, but it does not work.
		OPEN	
		CLOSE	

3.2.2 Auto Iris Lens Speed Control (SPEED)

Set the diaphragm control speed of auto iris lens (SPEED). Use LEFT/RIGHT key to adjust the control speed of the lens diaphragm by moving the cursor.

*Default : 55



SPEED	OPERATION
000-255	The smaller the set value, the slower the control speed, and the larger the set value, the faster the control speed. *When the set value is too large, the control speed will be faster, but it will cause hunting and overshoot. And please note that when the set value is too small, the operation will be delayed and it may stop.

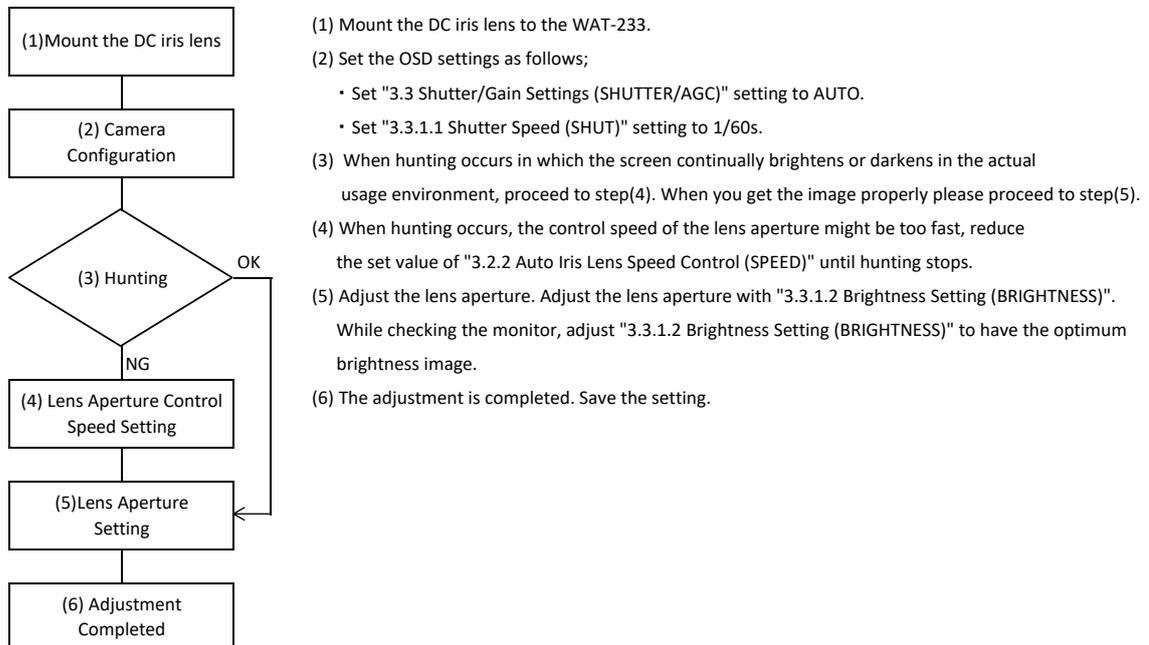
○Auto iris lens adjustment procedure

When installing the DC iris lens, adjust the lens aperture according to the following procedure.

Please note, for DC iris lens and video iris lens, adjustment method is different each other.

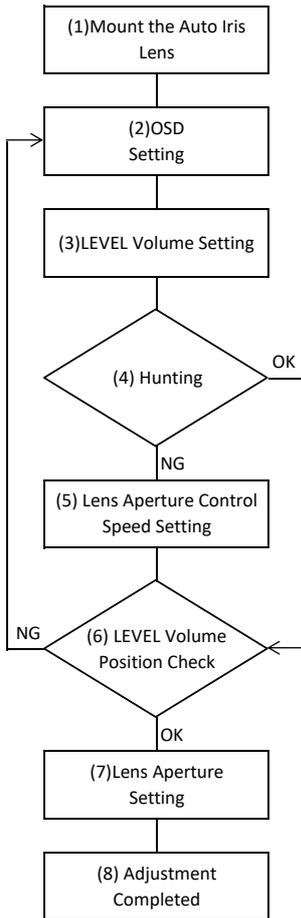
○DC iris lens adjustment procedure

The procedure for adjusting the DC iris lens is as follows.



○Video iris lens adjustment procedure

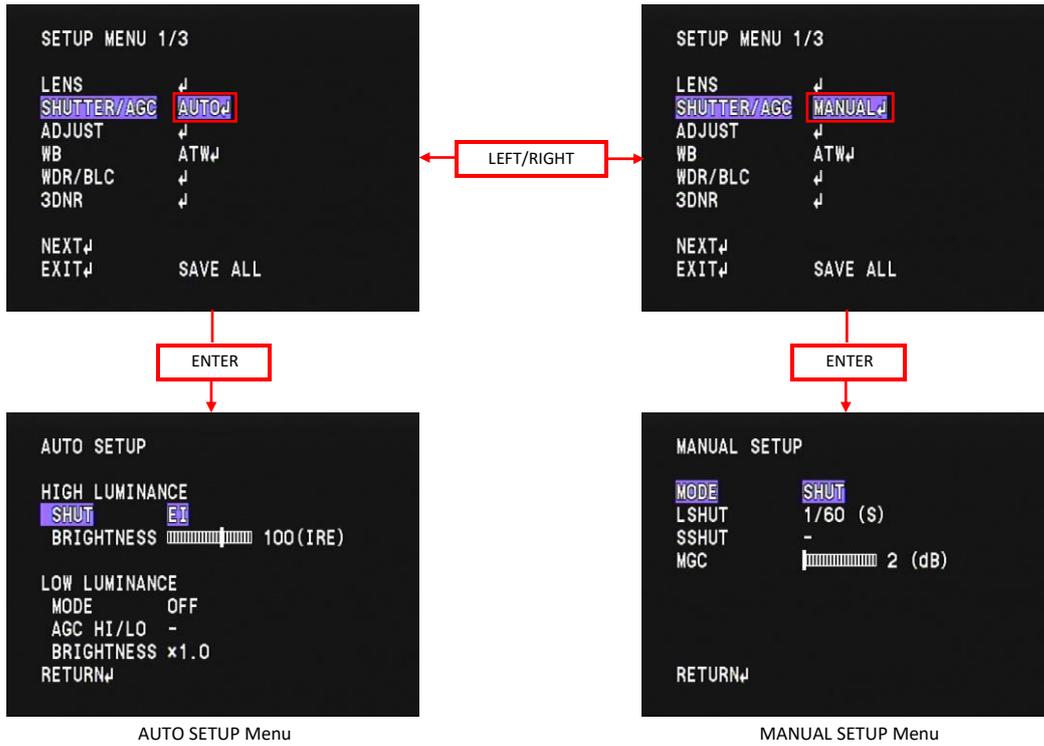
The procedure for adjusting the Video iris lens is as follows.



- (1) Mount the Video iris lens to the WAT-233.
- (2) Set the OSD settings as follows;
 - Set "3.3 Shutter/Gain Settings (SHUTTER/AGC)" setting to AUTO.
 - Set "3.3.1.1 Shutter Speed (SHUT)" setting to 1/60s.
 - Set "3.3.1.2 Brightness Settings, High Luminance Side (BRIGHTNESS)" setting to 100IRE.
 - Set "3.3.1.3 Low Luminance Side Exposure Control (MODE)" setting to OFF.
- (3) Adjust the LEVEL volume of the video iris lens in the actual imaging environment.
Turn the LEVEL volume slowly from the fully open to the closing side.
- (4) When hunting occurs in which the screen continually brightens or darkens during the LEVEL volume adjustment proceed to step(5). When you get the image properly please proceed to step(6).
- (5) When hunting occurs, the control speed of the lens aperture might be too fast, reduce the set value of "3.2.2 Auto Iris Lens Speed Control (SPEED)" until hunting stops.
- (6) Check the LEVEL volume is at the proper position. When the LEVEL volume is set to the position that makes the screen slightly brighter when switching the setting of "3.3.1.3 Low Luminance Side Exposure Control (MODE)" from OFF to AGC. When the adjustment can be made properly, proceed to step (7) (*Do not change the position of the LEVEL volume after Step(6). Lens might not operate properly.) Even if it is set to AGC, the screen does not become bright, or the screen becomes too bright, LEVEL volume may not be adjusted to the proper position. Go back to step 2 and adjust the LEVEL volume again.
- (7) Adjust the lens aperture. Adjust the lens aperture with "3.3.1.2 Brightness Setting (BRIGHTNESS)" While checking the monitor, adjust "3.3.1.2 Brightness Setting (BRIGHTNESS)" to have the optimum brightness image.
- (8) The adjustment is completed. Save the setting.

3.3 Shutter/Gain Settings

Set the exposure control. There are two modes of exposure control: automatic exposure control (AUTO) and manual exposure control (MANUAL). When AUTO is selected, shutter speed and gain are automatically controlled according to the imaging environment. When MANUAL is selected, shutter speed and gain can be set to arbitrary fixed values. Move the cursor to SHUTTER/AGC with UP/DOWN key and use the LEFT/RIGHT key to select AUTO or MANUAL. After selecting the mode, each setting submenu opens with ENTER.

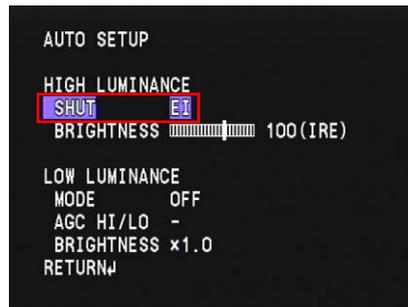


3.3.1 Automatic Exposure Control (AUTO)

3.3.1.1 Shutter Speed (SHUT)

Set the shutter speed (SHUTTER). Use the LEFT/RIGHT key to select the shutter mode.

*Default : EI



SHUTTER/AGC	SHUT	OPERATION
AUTO	1/60s(1/50s)	Set the fixed shutter speed. Selectable shutter speed : 1/60s(1/50s), 1/100s(1/120s), 1/250s, 1/500s, 1/1000s, 1/2000s, 1/4000s, 1/10000s *(1/50s), (1/120s) : Default of PAL
	1/100s(1/120s)	
	1/250s	
	1/500s	
	1/1000s	
	1/2000s	
	1/4000s	
	1/10000s	
	EI	Automatic exposure control by electric iris. Depending on the brightness of the shooting object, exposure will be controlled within the range of 1/60s(1/50s) to 1/10000s for getting the appropriate brightness *(1/50s) : Default of PAL

3.3.1.2 Brightness Settings, High Luminance Side (BRIGHTNESS)

Set the brightness in the screen (BRIGHTNESS). Use the LEFT / RIGHT keys to adjust the brightness.

*Default :100IRE



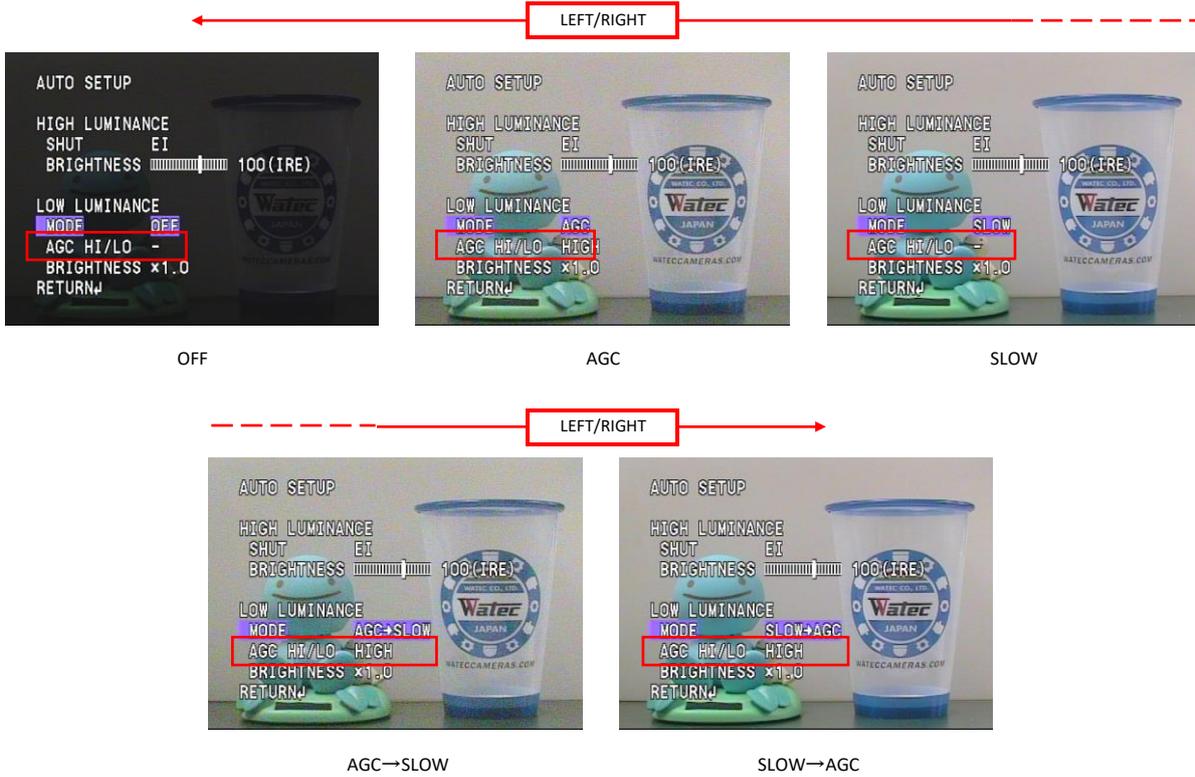
SHUTTER/AGC	BRIGHTNESS (HIGH LUMINANCE)	OPERATION
AUTO	40—130IRE	<p>Brightness can be set within the range of 40 (dark) - 130 IRE (bright).</p> <p>*Adjust the lens aperture when mounting the auto iris lens with BRIGHTNESS. For details, refer to "3.2.2 Auto Iris Lens Speed Control (SPEED)"</p> <p>*The display of the brightness range is different when WDR is OFF and ON. WDR=OFF : 40 - 130 IRE WDR=ON : 40 - 130</p> <p>Note : When WDR is ON, the unit notation of IRE disappears and set value is not brightness according to IRE.</p>

3.3.1.3 Low Luminance Side Exposure Control (MODE)

Set the exposure control at low luminance side (MODE). The exposure control operate with gain or slow shutter at low light condition when the image can not be exposed by electronic shutter or auto iris lens.

Use the LEFT / RIGHT key to select from OFF, AGC, SLOW, AGC→SLOW, SLOW→AGC

*Default : AGC



SHUTTER/AGC	MODE	OPERATION
AUTO	OFF	Exposure control at low luminance does not operate.
	AGC	Automatic exposure control with gain at low luminance. Dynamic resolution is maintained though noise is conspicuous in dark subjects. While switching the AGC HI / LO setting, the maximum value of the gain can be switched. For details, refer to "3.3.1.4 Auto Gain Control (AGC HI/LO)".
	SLOW	Automatic exposure control with slow shutter at low luminance. You can capture the subject clearly though dynamic resolution decreases in dark subjects. The slow shutter operates in the range of 2-16 FLD.
	AGC→SLOW	Automatic exposure control with Gain and slow shutter at low luminance. Gain control the exposure when the camera judge the luminance as low luminance. After Gain reaches to the maximum value, Slow shutter operates for further sensitivity improvement. While swithing the AGC HI/LO setting, you can switch the maxmum value of the gain. For details, refer to "3.3.1.4 Auto Gain Control (AGC HI/LO)". The slow shutter operates in the range of 2-16 FLD.
	SLOW→AGC	Automatic exposure contril with slow shutter and Gain at low luminance. Slow shutter control the exposure When the camera judges the luminance as low luminance. After the accumulation time of the slow shutter has reached the maximum, gain control operates for further sensitivity improvement. While swithing the AGC HI/LO setting, you can switch the maxmum value of the gain. For details, refer to "3.3.1.4 Auto Gain Control (AGC HI/LO)". The slow shutter operates in the range of 2-16 FLD.

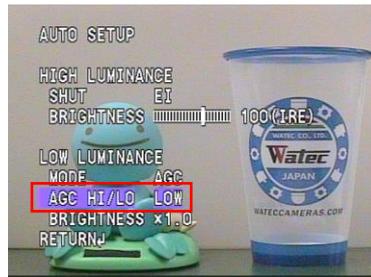
3.3.1.4 Auto Gain Control (AGC HI/LO)

Set AGC maximum gain value (AGC HI / LO). Use the LEFT / RIGHT keys to select the AGC maximum gain value.

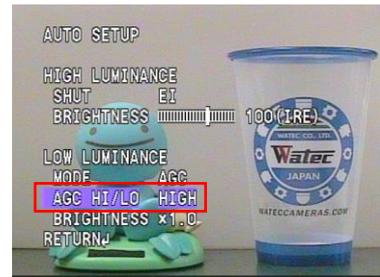
*Default : HIGH. When "OFF" is selected in Low Luminance exposure control mode (MODE), the Gain value is approx. 2dB.



OFF



LOW



HIGH

SHUTTER/AGC	AGC HI/LO	OPERATION
AUTO	LOW	(Gain range) approx. 2 - 32dB
	HIGH	(Gain range) approx. 2 - 44dB

*You can not use the function with OFF or SLOW in "3.3.1.3 Low Luminance Side Exposure Control (MODE)"

When OFF or SLOW is selected, the operation will be as follows;

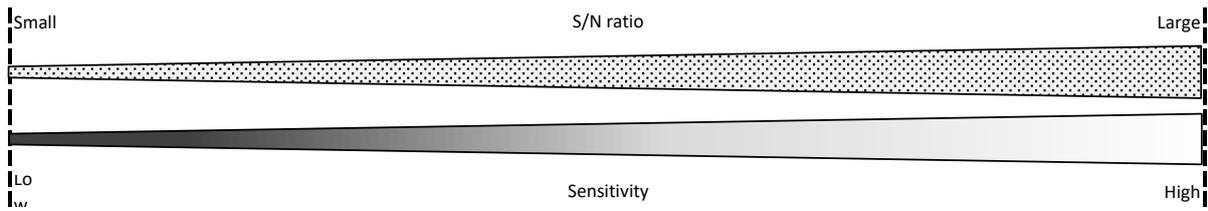
MODE (LOW LUMINANCE)	AGC HI/LO	OPERATION
AGC		
AGC→SLOW	LOW/HIGH	These items are settable.
SLOW→AGC		
OFF/SLOW	—	"—" will be displayed on OSD, setting is not available.

3.3.1.5 Brightness Settings, Low Luminance Side (BRIGHTNESS)

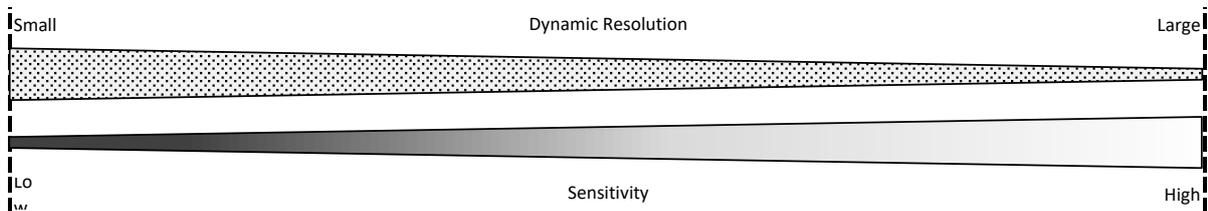
Set the brightness of exposure control at low luminance side (BRIGHTNESS). You can independently set the brightness during gain/slow shutter operation apart from "3.3.1.2 Brightness Settings, High Luminance Side (BRIGHTNESS)". Instead of darkening the picture in dark subjects, you can improve noise and dynamic resolution. Use the LEFT / RIGHT keys to select from x0.25, x0.5, x0.75 and x1.0.

*Default : x1.0

OAGC Operation



OSlow Shutter Operation



SHUTTER/AGC	BRIGHTNESS (LOW LUMINANCE)	OPERATION
AUTO	x0.25	When x 0.25 is selected, S/N and dynamic resolution improve though sensitivity decreases. When x1.0 is selected, S/N and dynamic resolution decrease though sensitivity improves. Note : when WDR is ON, VIDEO LEVEL is fixed to x 1.0 irrespective of the set value and the set value can not be changed.
	x0.5	
	x0.75	
	x1.0	

*You can not use the function with WDR in "3.6.1. Wide Dynamic Range (WDR)"

When WDR is ON, the operation will be as follows;

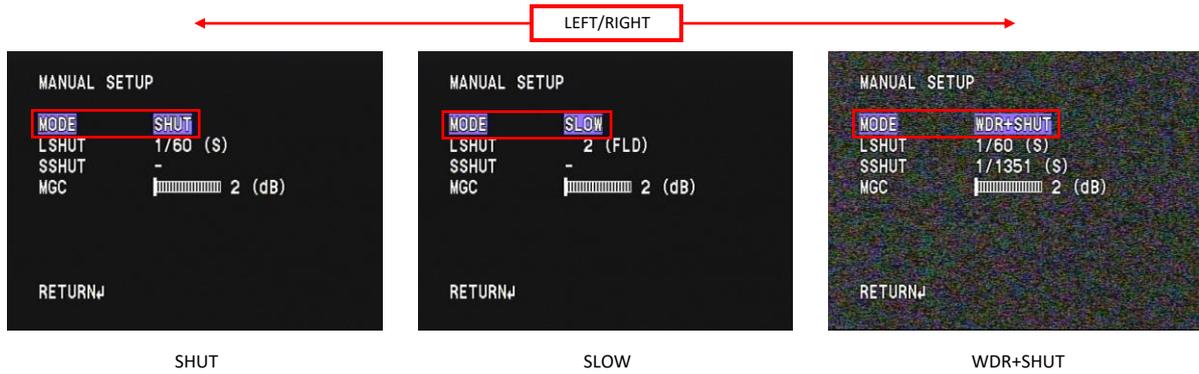
(WDR/BLC)	BRIGHTNESS (LOW LUMINANCE)	OPERATION
WDR		
OFF	x0.25/x0.5/ x0.75/x1.0	These items are settable.
ON	—	When ON is selected, VIDEO LEVEL is fixed to x 1.0 irrespective of the set value and the set value can not be changed. " — " will be displayed on OSD.

3.3.2 Manual Exposure Control (MANUAL)

3.3.2.1 Manual Exposure Control Mode (MODE)

Set manual exposure control mode (MODE). Manual exposure control has two control modes, and each shutter speed and gain value can be set to an arbitrary fixed value. Use the LEFT / RIGHT key to select from SHUT, SLOW and WDR+SHUT.

*Default : SHUT.



SHUTTER/AGC	MODE	OPERATION
MANUAL	SHUT	Normal (Single shutter) mode. You can set the electronic shutter and gain value arbitrarily.
	SLOW	Slow shutter mode. You can set the accumulation time and gain value of slow shutter arbitrarily.
	WDR+SHUT	Manual mode of the wide dynamic function. Shutter speed and gain value for long and short exposure can be set arbitrarily. Adjust the visibility of the dark part with a long exposure shutter, and adjust the visibility of the bright part with a short exposure shutter.

*When using the above three modes, please use WDR of SETUP MENU 1/3 with the following settings.

SHUTTER/AGC	MODE	(WDR/BLC) WDR	OPERATION
MANUAL	SHUT	OFF	Using with WDR=ON is not recommended although you can change the settings. WDR function may not work properly.
	SLOW	OFF	
	WDR+SHUT	ON	Although it is possible to change the setting, please use together with WDR=ON in order to maximize the manual wide dynamic range function. When used with WDR=OFF, there is a possibility that the low brightness part appears dark.

3.3.2.2 Shutter Speed (LSHUT/SSHUT)

Set the shutter speed (SHUTTER). Depending on the manual exposure control mode (MODE) setting, the selectable shutter speed varies. Use the LEFT / RIGHT keys to select the shutter speed.

MODE	LSHUT/SSHUT	OPERATION
SHUT (Single shutter)	LSHUT	Selectable from; 1/60s(1/50s), 1/100s(1/120s), 1/250s, 1/500s, 1/1000s, 1/2000s, 1/4000s, 1/10000s *(1/50s), (1/120s) : PAL *Default : 1/60s (1/50s)
	SSHUT	It cannot be set.
SLOW (Slow shutter)	LSHUT	Selectable from; 2, 4, 8, 16, 32, 64, 128, 256FLD *Default : 2FLD
	SSHUT	It cannot be set.
WDR+SHUT (Double shutter)	LSHUT	Selectable from; 1/60s(1/50s), 1/100s(1/120s), 1/250s, 1/500s, 1/1000s, 1/2000s,1/4000s, 1/10000s *(1/50s), (1/120s) : PAL *Default : 1/60s (1/50s)
	SSHUT	Selectable from; 1/1351s(1/976s), 1/2000s, 1/4000s, 1/6000s, 1/10000s, 1/15000s, 1/20000s, 1/25000s *(1/976s) : PAL *Default : 1/1351s (1/976s)

OWDR+SHUT Mode

The shutter speed for long and short exposure can be arbitrarily set for the WDR function. The slower the shutter speed for long exposure (LSHUT) is set, the better the visibility of the dark part gets. And the faster the shutter speed for short time exposure (SSHUT) is set, the better the visibility of the bright part gets.



3.3.2.3 Manual Gain Control (MGC)

Set manual gain value (MGC). You can set the gain value to an arbitrary value. Use the LEFT / RIGHT keys to set the manual gain value.

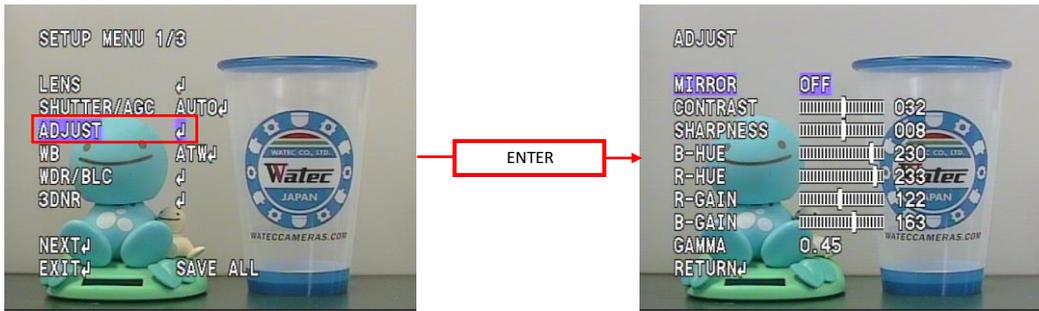
*Default : 2dB



SHUTTER/AGC	MGC	OPERATION
MANUAL	2—44dB	Fixes the gain value to an arbitrary value regardless of the brightness of the subject. The higher the setting value, the brighter the image becomes, and the smaller the setting value, the darker the image.

3.4 Picture Adjustment (ADJUST)

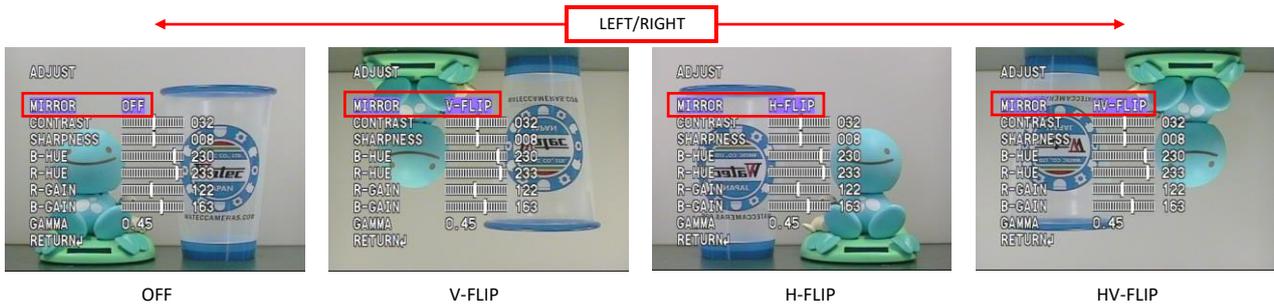
Adjust image quality. Move the cursor to ADJUST and press the ENTER key to display the ADJUST menu. Move the cursor up or down with UP / DOWN key and select the item you want to adjust.



3.4.1 Image Flip (MIRROR)

Set the image flip processing (MIRROR) Use the LEFT / RIGHT key to select from normal (OFF), left / right inversion (H - FLIP), upside down (V - FLIP), left / right up - down (HV - FLIP).

*Default : OFF



MIRROR	OPERATION
OFF	Normal image
V-FLIP	Horizontal image flip
H-FLIP	Vertical image flip
HV-FLIP	Horizontal and vertical image flip. Rotating the image by 180 degrees.

3.4.2 Contrast (CONTRAST)

Set the contrast (CONTRAST) settings. Use the LEFT/RIGHT key to adjust the contrast.

*The factory default value may vary.



CONTRAST	OPERATION
000-063	The smaller the setting value, the lower the contrast. The larger the setting value, the higher the contrast.

3.4.3 Edge Enhancement (SHARPNESS)

Set the intensity of edge enhancement (SHARPNESS). It enhances the visual effects of resolution by emphasizing the outline portion of the image. Use the LEFT / RIGHT key to set SHARPNESS.

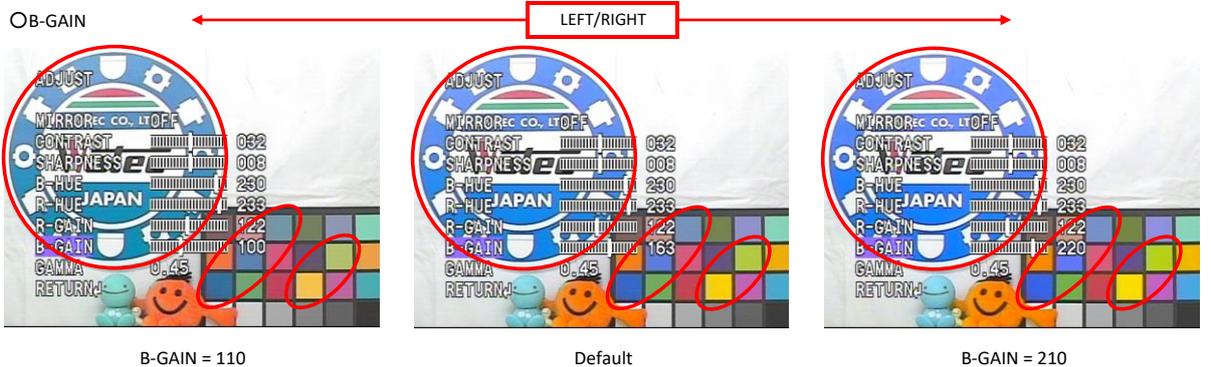
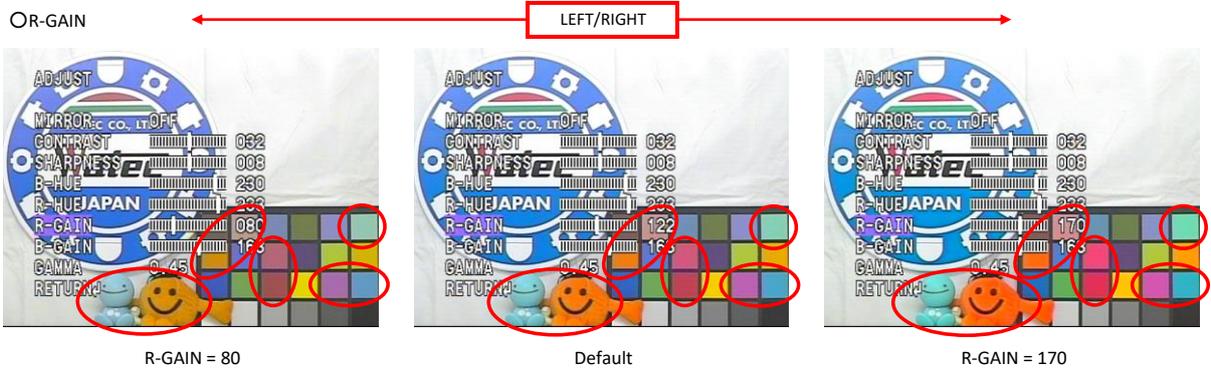
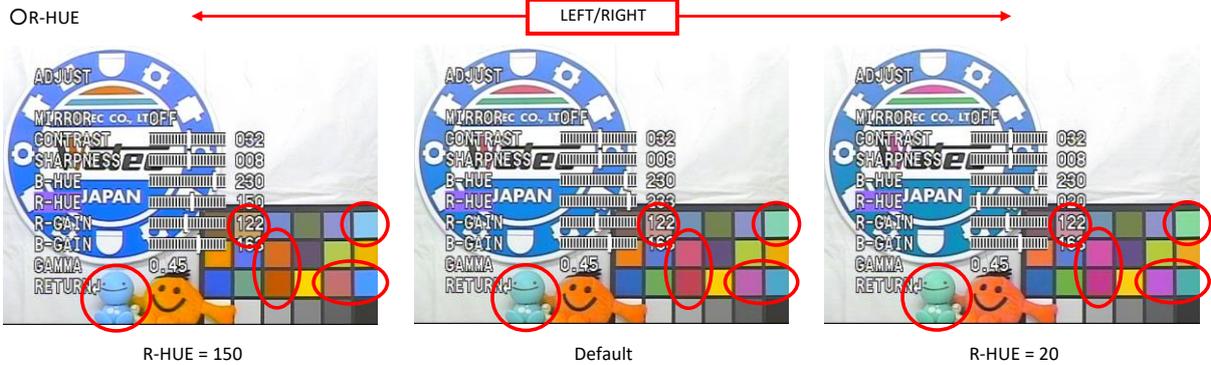
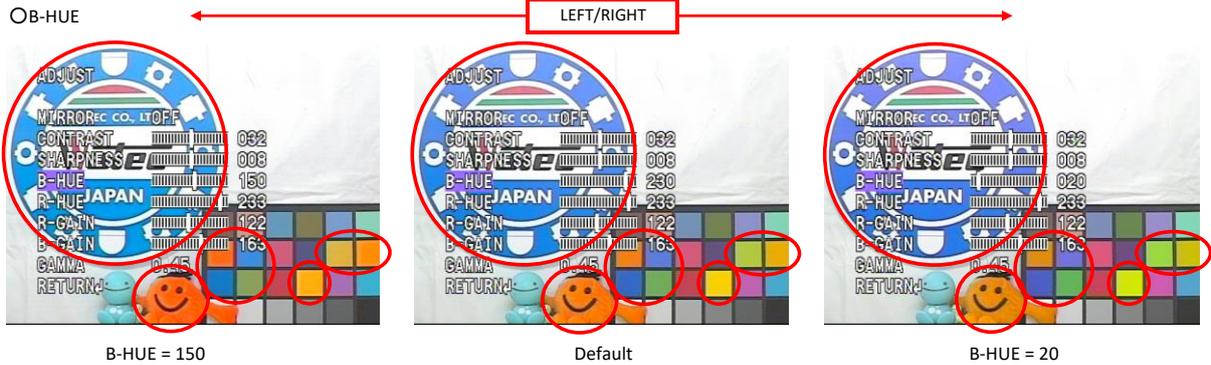
*Default : 8



SHARPNESS	OPERATION
000-015	The larger the setting value, the higher the edge enhancement level of the entire screen, the sharper the image, but the noise become marked.

3.4.4 Chroma Settings (B-HUE/R-HUE/R-GAIN/B-GAIN)

Set the chroma level (B-HUE, R-HUE, R-GAIN, B-GAIN). You can set your arbitrary color by adjusting color gain (R-GAIN, B-GAIN) and color hue (B-HUE, R-HUE). Use the LEFT / RIGHT keys to adjust the chroma.



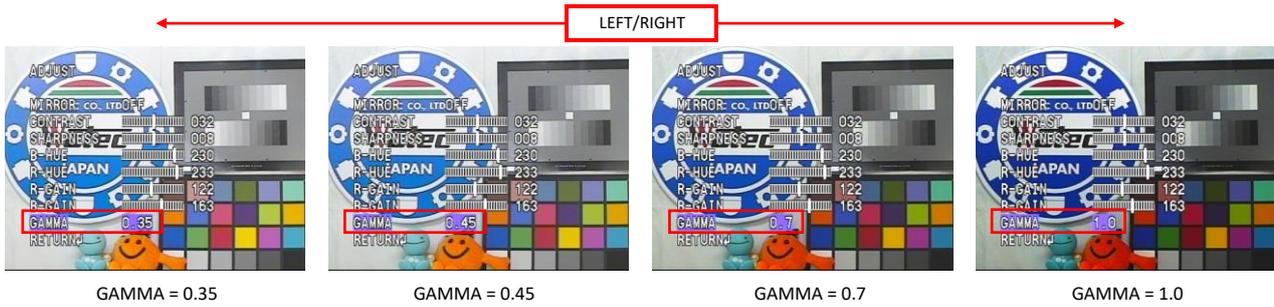
(ADJUST MENU)	OPERATION
B-HUE	B-HUE can be set in the range of 000-255. Adjust yellow and blue hue mainly. *Default: Vary depending on the fine adjustment at factory
R-HUE	R-HUE can be set in the range of 000-255. Adjust red and cyan hue mainly. *Default: Vary depending on the fine adjustment at factory
R-GAIN	R-GAIN can be set in the range of 000-255. Adjust red and cyan gain mainly. *Default: Vary depending on the fine adjustment at factory
B-GAIN	B-GAIN can be set in the range of 000-255. Adjust yellow and blue gain mainly. *Default: Vary depending on the fine adjustment at factory

* The above explanation is a guide only, make adequate evaluation in the use environment.

3.4.5 v (GAMMA)

Set the gamma curve (GAMMA). Generally, the output signals from the CRT and the LCD monitor have nonlinearity with respect to the input signal. Then correct characteristics opposite to the monitor in advance to the output signal from the camera so that the output on the monitor becomes linear. This is called gamma correction. WAT-233 has nine gamma correction modes. Use the LEFT / RIGHT key to set GAMMA.

*Default : 0.45



GAMMA	OPERATION
0.35	
0.4	
0.45	
0.5	Select the appropriate value according to the characteristics of the monitor to be displayed with.
0.55	In general, the smaller the gamma value, the brighter the dark area and overexposure tends to occur.
0.6	
0.7	
0.8	
1.0	

3.5 White Balance (WB)

Set the white balance (WB) settings. White balance is a function to correct white colored subjects to be shown as white environments of various color temperatures. Use the LEFT / RIGHT Key to select the WB from ATW, AWB, 3200K, 4300K, 5100K, 6300K, ACR, PWB.

*Default : ATW



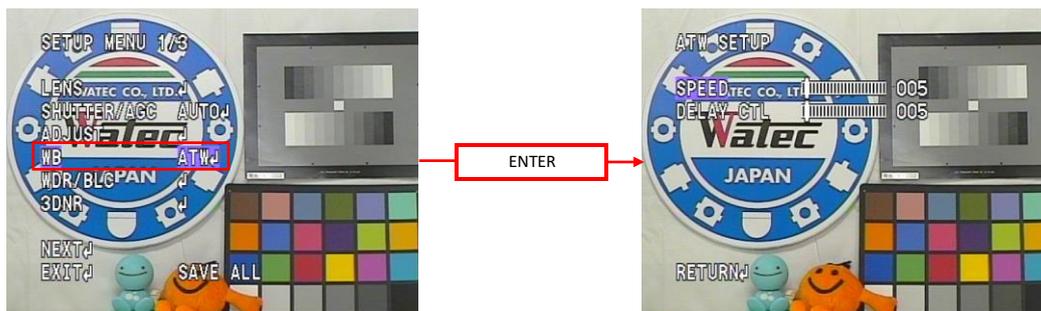
WB	OPERATION
ATW	ATW automatically controls the white balance and maintains color reproducibility by following the surrounding color temperature change. Pull-in range is set in advance, it controls only when the surrounding color temperatures judged to be within the pull-in frame. By setting the pull-in frame, deterioration of color reproduction can be reduced without taking in pull-in operation in imaging scenes where monochrome occupies a large proportion in the screen.
AWB	AWB controls the white balance irrespective of subject conditions. Since the pull-in control always operates regardless of the preset pull-in range, the pull-in operates in a wider color temperature range than ATW, but the pull-in control operates even in the imaging scene where monochrome occupies a large proportion on the screen and color reproduction may be impaired.
PRESET	For the preset white balance, you can select the white balance correction value 3200K, 4300K, 5100K and 6300K of the predetermined color temperature. 3200K : (incandescent mode) Correct and fix the white balance based on the white under the lighting environment close to incandescent mode and fix it. 4300K : (Fluorescent mode 2) Correct and fix the white balance based on the white under the lighting environment close to the reddish fluorescent light and fix it. 5100K : (Fluorescent mode 2) Correct and fix the white balance based on the white under the lighting environment close to the bluish fluorescent light and fix it. 6300K : (Sunlight mode) Correct and fix the white balance based on white under the lighting environment close to sunlight and fix it. The correction value of each preset white balance can be changed arbitrarily and respectively. When it is necessary to change, adjust the set value according to the usage environment.
ACR	ACR suppresses chroma rolling in the environment where chroma rolling occurs under non-inverter fluorescent light. *Chroma rolling is; When a camera (NTSC) whose driving frequency of the solid-state imaging device is 59.94 [Hz] images a subject illuminated by a non-inverter type fluorescent lamp operated by a commercial power supply having a power frequency of 60 [Hz], due to a slight difference in frequency, the color changes occurs in long-term. This is called the chroma rolling.
PWB	While pressing the ENTER key, PWB corrects the white balance according to the color temperature under the use environment and fixes the operation with the white balance correction amount at that moment of the Enter key is released. Since it matches the actual lighting, it can correct accurately even if the color temperature is unknown.

3.5.1 Auto Trace White Balance (ATW)

ATW maintains color reproducibility even when the color temperature of the light source changes.



When ATW is selected, pressing the ENTER key will display the ATW SETUP. Move the cursor up or down with the UP / DOWN key and Use the LEFT / RIGHT keys to adjust the ATW.



WB	(ATW SETUP MENU)	OPERATION
ATW	SPEED	<p>Set the pull-in speed. The lead-in speed can be set in the range 000 - 255.</p> <p>The lower the set value, the faster the pull-in speed, and the larger the set value, the slower the pull-in speed.</p> <p>*Note : color oscillation is likely to occur if the pull-in speed is set too fast.</p> <p>*Default : 005</p>
	DELAY CTL	<p>Set the time from the change in color temperature to the start of white balance control.</p> <p>Selectable in the range 000 - 255. The lower the set value, the faster to start WB control, the higher the set value, the slower to start WB control.</p> <p>*Default : 005</p>

3.5.2 Auto White Balance (AWB)

AWB controls white balance a wider color temperature range than ATW regardless of subject condition and maintains color reproducibility.

*The mode can not set the control speed and the pull-in frame.

3.5.3 Preset White Balance (3200K/4300K/5100K/6300K)

For the preset white balance, you can select the white balance correction value from predetermined color temperature of 3200K, 4300K, 5100K or 6300K.

Pressing the ENTER key will display the SETUP menu for each predetermined color temperature.

Move the cursor up or down with the UP / DOWN key and adjust the item you want to adjust using the LEFT / RIGHT key.

OB-GAIN



OR-GAIN



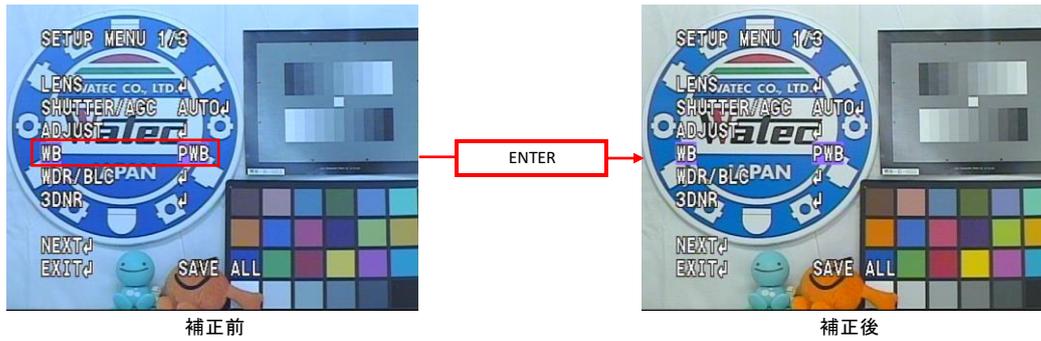
PRESET WB	(SUB MENU)	OPERATION
3200K/4300K/ 5100K/6300K	B-GAUN	Set B-GAIN of the white balance correction value. B-GAIN can be set in the range of 000-255. When the set value is decreased, the screen will be corrected to the yellow side, and when it is increased the screen will be corrected to the blue side. *Default: Vary depending on the fine adjustment at factory
	R-GAIN	Set the R-GAIN of the white balance correction value. R-GAIN can be set in the range of 000 - 255. When the set value is decreased, the screen will be corrected to the cyan side, and when it is increased the screen will be corrected to the red side. *Default: Vary depending on the fine adjustment at factory

3.5.4 Anti Chroma Rolling White Balance (ACR)

ACR suppresses chroma rolling in the environment where chroma rolling occurs.

3.5.5 Push White Balance (PWB)

PWB adjusts the white balance under actual illumination and it can be corrected accurately even if the color temperature is unknown.

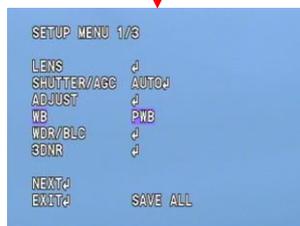


○PWB adjustment method

Take neutral object such as white paper under the actual lighting in the entire screen and press the ENTER key. Confirm the correction and release the ENTER key. It will be completed when the paper is corrected to white.



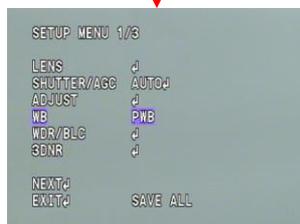
Step (1) Before correction



Step (2) Place the white paper in the entire screen



Step (3) Press the ENTER key to start the correction



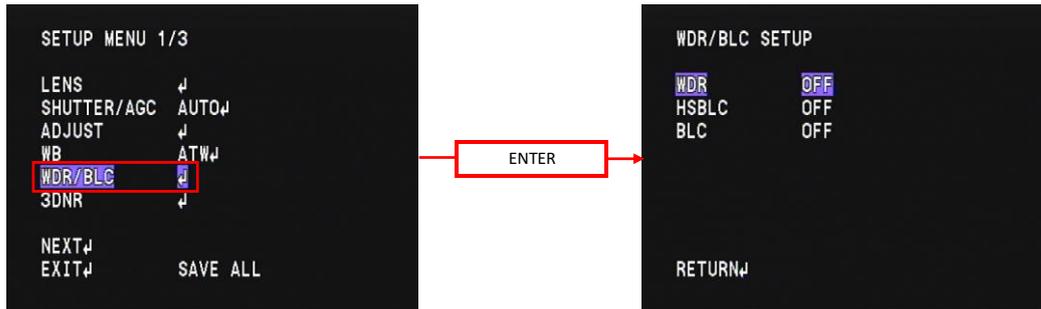
Step (4) Confirm the correction and release the ENTER key
(*successfully completed, the white paper looks white in the screen)



Step (5) After correction

3.6 Wide Dynamic Range/Back Light Compensation (WDR/BLC)

Set the wide dynamic range/Back Light Compensation function (WDR/BLC). Move the cursor to WDR/BLC, pressing ENTER key to display the WDR/BLC SETUP Menu. You can set the wide dynamic range function (WDR), highlight suppressed backlight (HSBLC), normal backlight (BLC) settings. Move the cursor up or down with the UP / DOWN key and use the LEFT / RIGHT key for the item you want to adjust and set ON / OFF of each function.



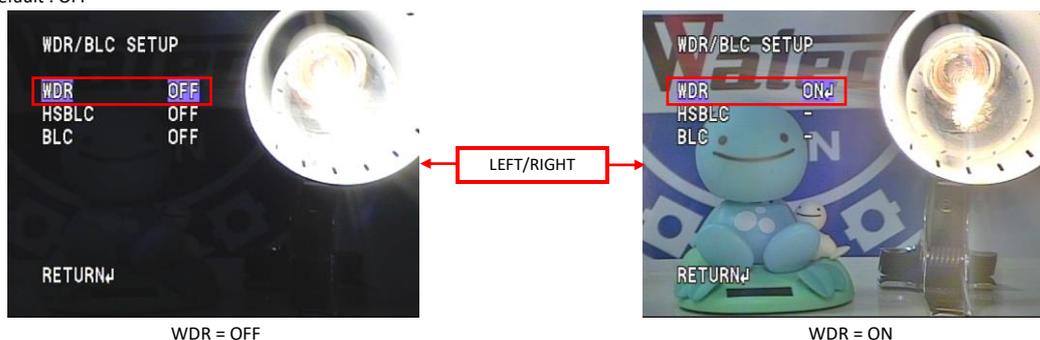
*WDR, HSBLC and BLC operates in order of priority as follows;

WDR	HSBLC	BLC	OPERATION
OFF	OFF	OFF	No operations.
ON	—	—	When WDR = ON, even if HSBLC and BLC are set to ON, the WDR function takes precedence and other functions are invalid.
OFF	ON	—	When HSBLC=ON, even if BLC is set to ON, the HSBLC function takes precedence and BLC function is invalid.
OFF	OFF	ON	The BLC function is available only when WDR and HSBLC are set to OFF.

3.6.1 Wide Dynamic Range(WDR)

Set the Wide Dynamic Range(WDR). When you take a subject with a large contrast difference such as backlight condition, subjects look to be blackened or white-out will occur partly. The wide dynamic range function (WDR) suppresses overexposure and underexposure of the subjects under such imaging conditions and corrects it to a natural image. Use the LEFT / RIGHT key to select ON / OFF.

*Default : OFF



WDR = OFF

WDR = ON

When ON is selected, pressing the ENTER key will display the WDR CONTRAST menu. Use the LEFT / RIGHT key to select the correction amount of the wide dynamic range from LOW, MIDLOW, MID, MIDHIGH, and HIGH.

*Default : HIGH



LOW

MIDLOW

MID

MIDHIGH

HIGH

WDR	CONTRAST	OPERATION
ON	LOW	Set the correction amount of the wide dynamic range function. Increasing the set value improves visibility, it enable camera to capture both bright and dark areas at the same time, decreasing the set value will make the overall contrast and the image becomes a natural picture.
	MIDLOW	
	MID	
	MIDHIGH	
	HIGH	

*Recommended setting of wide dynamic range function

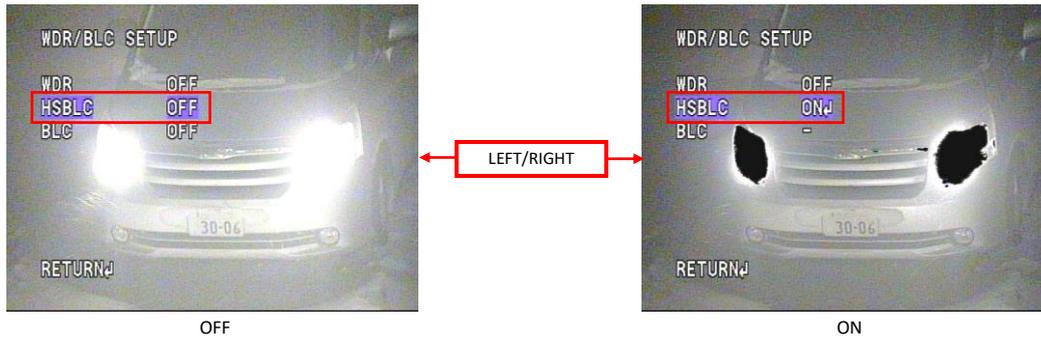
When using the wide dynamic range function, the following settings are recommended.

Lens	SHUTTER/AGC	WDR	(SHUTTER/AGC) SHUT	OPERATION	Efficacy
Manual	AUTO	ON	EI	When using manual lenses, the dynamic range is widest but depending on the imaging scene, smear and flicker are conspicuous.	4
Auto iris			EI	The dynamic range is widest but depending on the imaging scene, smear and flicker are conspicuous.	1
			OFF	The dynamic range is less wide than EI setting but suppresses smear.	2
			FL	The dynamic range is less wide than OFF setting but suppresses smear and flicker.	3

3.6.2 Highlight Suppressed Backlight Compensation (HSBLC)

Set the Highlight Suppressed Backlight Compensation (HSBLC). The function reduces the burden on the observer's eyes by masking a strong light source in the dark place and can improve the deteriorated visibility with a strong light source. Use the LEFT / RIGHT key to select ON / OFF.

*Default : OFF



When ON is selected, pressing the ENTER key will display the HSBLC menu. Move the cursor up or down with the UP / DOWN key and adjust with the LEFT / RIGHT key in the item you want to adjust.

HSBLC	(HSBLC Menu)	Operation
ON	CLIP LEVEL	<p>Sets the brightness level at masking starts. CLIP LEVEL can be set in the range of 000 - 255.</p> <p>Lowering the setting value decreases the luminance level at mask processing starts and increasing setting increases the luminance level at mask processing starts.</p> <p><u>*Default : 000</u></p>
	SCALE	<p>Set exposure compensation. SCALE can be set in the range of 000-015.</p> <p>In the dark, the dynamic range of the subject becomes wider by reflecting the light source, and the visibility of the dark area tends to deteriorate. In this case, increase the brightness of the dark area to improve visibility. Decreasing the set value will make the screen darker and if you increase the screen the brightness will be corrected.</p> <p><u>*Default : 010</u></p>

CLIP LEVEL Settings



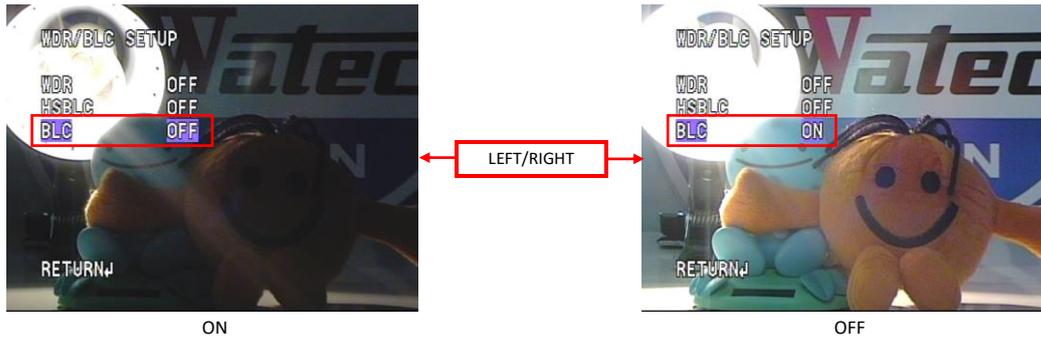
SCALE Settings



3.6.3 Back Light Compensation (BLC)

Set backlight compensation (BLC) on and off. The function compensates by increasing the brightness of the entire screen so that the subject that is blackened by backlight will have the proper brightness. Use the LEFT / RIGHT key to select ON or OFF.

*Default : OFF

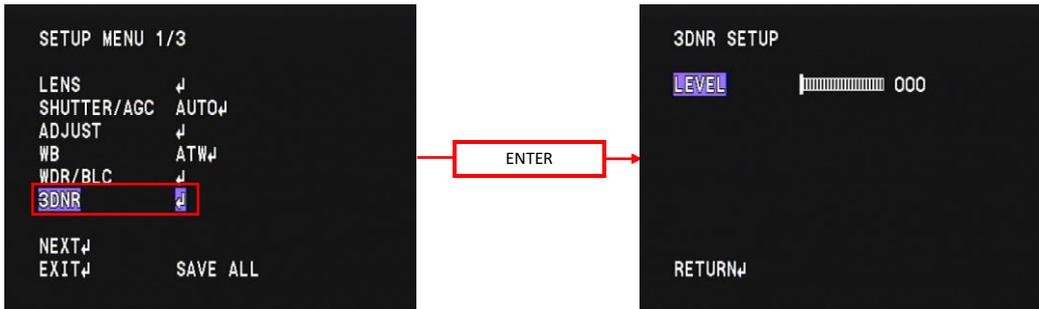


BLC	OPERATION
OFF	No operations
ON	<p>Backlight compensation(BLC) operates</p> <p>The effective area of the backlight compensation function is convex as described below;</p> <p>When there is a dark subject in the effective area, the backlight compensation function operates so that the correct brightness is achieved.</p> <div style="text-align: center;"> <p>Effective Area</p> </div>

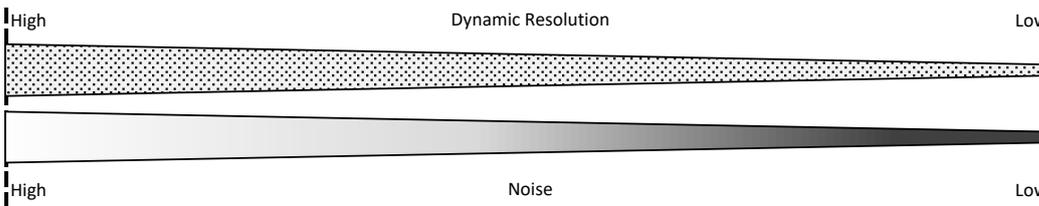
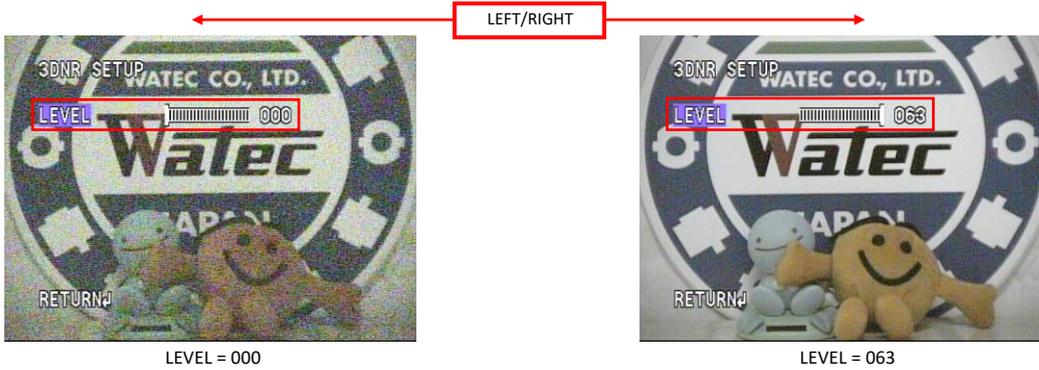
3.7 3D Noise Reduction (3DNR)

Set the 3D noise reduction (3DNR) function. The function reduces image noise to improve the image quality of the camera. Especially, it reduces noise that occurs when the gain becomes high in a low illumination environment. Move the cursor to 3DNR and press the ENTER key to display the 3DNR menu.

*Default : 000



Use the LEFT / RIGHT keys to move the cursor and adjust the 3D noise reduction correction level.

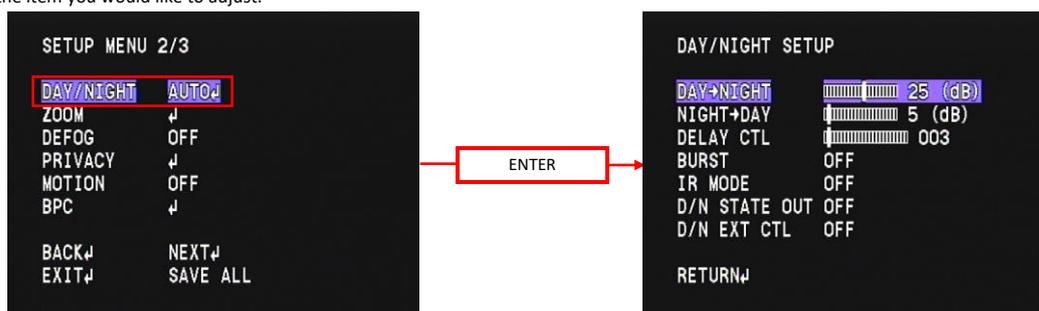


LEVEL	OPERATION
000—063	<p>Set the correction level for 3D noise reduction.</p> <p>The greater the set value, the stronger the effect of noise reduction.</p> <p>*Increasing the set value reduces random noise, but it also tends to cause image quality degradation such as lower dynamic resolution.</p>

3.8.3 Automatic Switching Mode (AUTO)

Set automatic switching mode (AUTO). You can switch between Day mode and Night mode automatically according to the ambient brightness.

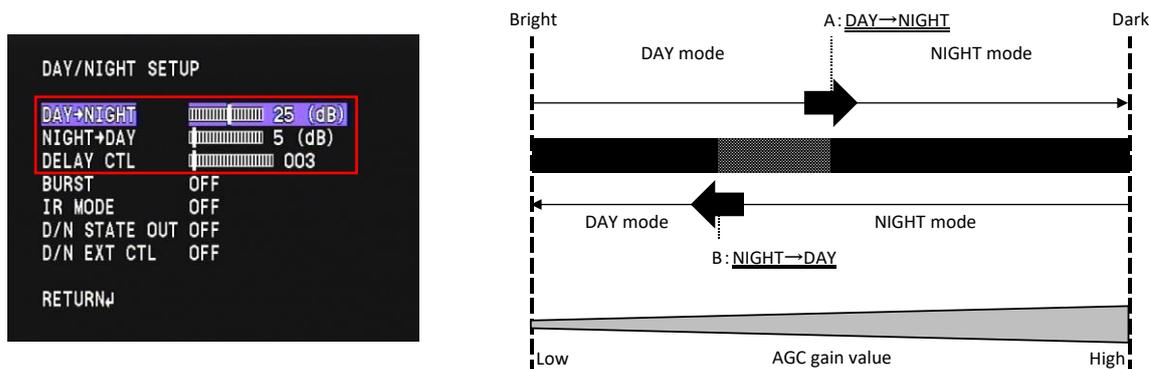
When AUTO is selected, pressing the ENTER key displays the DAY/NIGHT SETUP menu. Move the cursor up or down and adjust with the LEFT /RIGHT key in the item you would like to adjust.



3.8.3.1 Day↔Night Switching Control (DAY→NIGHT/NIGHT→DAY/DELAY CTL)

Set the threshold for transition control of day / night and transition determination judgement time. Use the AGC gain value to determine the brightness.

Use the LEFT / RIGHT keys to move the cursor to adjust the day and night thresholds and the transition judgement time.

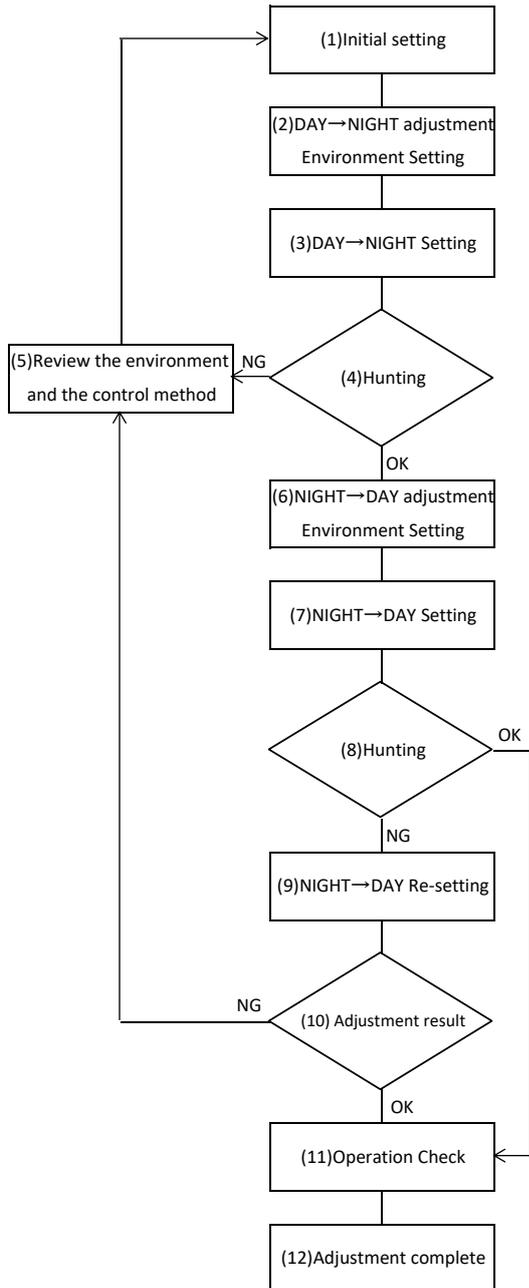


DAY/NIGHT	(DAY/NIGHT SETUP Menu)	OPERATION
AUTO	DAY→NIGHT	Set the gain value to switch from Day mode to Night mode. When ambient illuminance decrease and the gain value exceeds the set value, it switches to Night mode. DAY→NIGHT can be set within the range of 2-42dB. Please set it to be DAY→NIGHT > NIGHT→DAY. <u>*Default : 25dB</u>
	NIGHT→DAY	Set the gain value to switch from Night mode to Day mode. When ambient illuminance increase and the gain value falls the set value, it switches to Day mode. NIGHT→DAY can be set within the range of 2-42dB. Please set it to be DAY→NIGHT > NIGHT→DAY. <u>*Default : 5dB</u>
	DELAY CTL	Set the transition judgement time between Day mode and Night mode. DELAY Day/Night Transition is performed when the state of day mode or night mode is continuously maintained for the period set by CTL. DELAY CTL can be set in the range of 000 - 255. The unit is "seconds". <u>*Default : 003</u>

*Since AGC gain value is used for brightness determination, select "3.3.1.3 Low Brightness Side Exposure Control (MODE)" as AGC, AGC→SLOW, SLOW→AGC either when switching using threshold value. In other modes, switching using the threshold value cannot be performed as the gain value is fixed at 2 dB. In that case, switch by external input.

○Day⇌Night switching threshold adjustment method

The procedure for adjustment DAY→NIGHT and NIGHT→DAY is as follows.

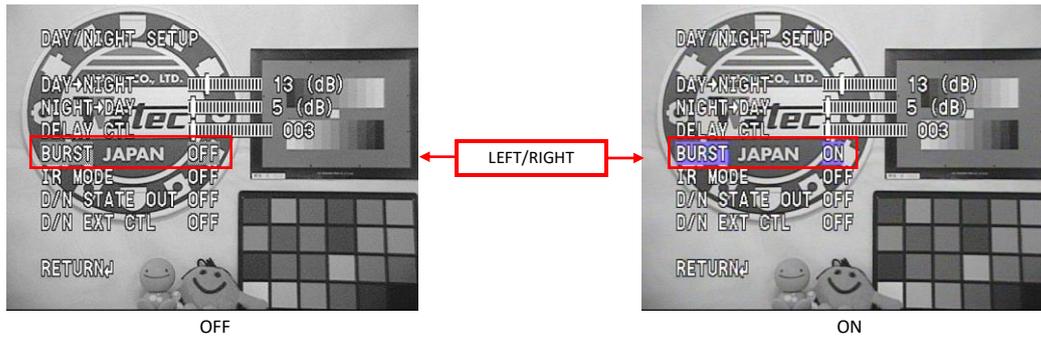


- (1) Set to DAY→NIGHT=42dB(maximum), NIGHT→DAY=2dB(minimum) and DELAY CTL=001.
- (2) Adjust the diaphragm and lighting of the lens, and reproduce the brightness which you would like to switch to night mode while watching the monitor.
- (3) Make lower the setting value of DAY→NIGHT slowly by 1 dB at a time until switching from the day mode state to the night mode.
- (4) After switching to the night mode, when hunting, in which day mode and night mode are switched continuously, does not occur, proceed to step (6). When hunting occurs, proceed to step (5).
- (5) It may not be possible to respond by switching using the threshold of DAY→NIGHT and NIGHT→DAY. Please change the subject, lighting / illuminance, or switch by external input. In that case, readjust from step (1).
- (6) Adjust the diaphragm and lighting of the lens, and reproduce the brightness which you would like to switch to day mode while watching the monitor.
- (7) Make lower the setting value of NIGHT→DAY slowly by 1 dB at a time until switching from the day mode state to the night mode.
- (8) When hunting does not occur, proceed to step (11). When hunting occurs, proceed to step (9).
- (9) Make lower the setting value of NIGHT→DAY until hunting stops.
- (10) Proceed to step (5) when you are not satisfied with the adjustment result of NIGHT→DAY.
- (11) Change the diaphragm and lighting of the lens and check that the switching of Day / Night is done without problems.
- (12) When there is no problem with the above setting, the adjustment process is completed. Please save the setting.

3.8.3.2 Burst Setting (BURST)

Set the burst (BURST) setting. Use the LEFT / RIGHT key to select ON / OFF of the burst in the NIGHT mode.

*Default : OFF

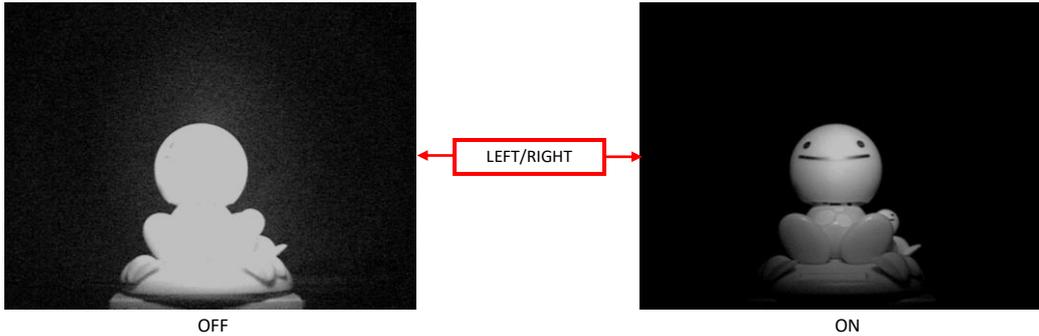


DAY/NIGHT	BURST	OPERATION
AUTO	OFF	No burst signal is added.
	ON	Add a burst signal. On some monitors and image capture boards, video signals without color bursts may not be accepted. In that case, turn on BURST. *When using a displayable device even if there is not color burst, we recommend turning off BURST.

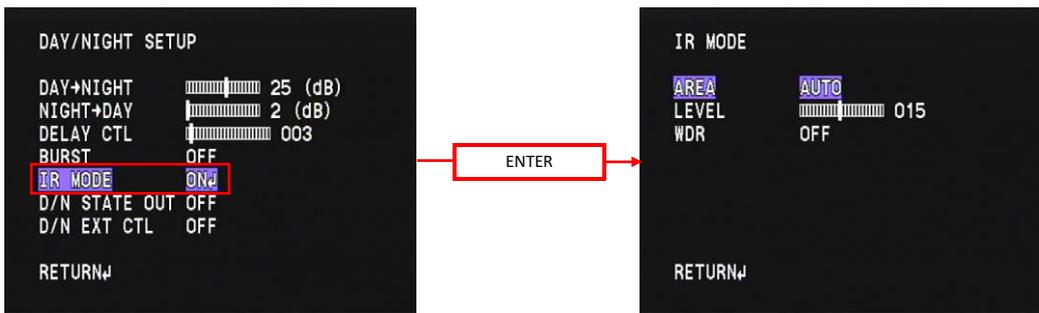
3.8.3.3 IR Mode (IR MODE)

Set IR mode (IR MODE). In the night mode of the Day / Night function, the subject may become overly light and overexposure may occur when an infrared light projector is used together. In IR mode, it is possible to suppress overexposure by optimizing exposure control in night mode. Use the LEFT / RIGHT key to select ON or OFF.

*Default : OFF



When ON is selected, pressing ENTER key will display the IR MODE menu. Use the LEFT / RIGHT keys to set each item.

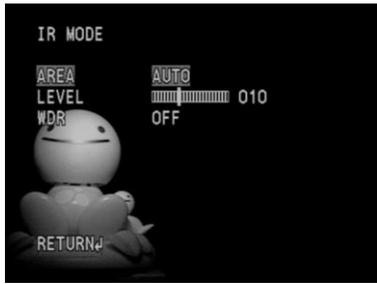


DAY/NIGHT	IR MODE	(IR MODE MENU)	OPERATION
AUTO	OFF	—	IR mode control is not performed.
	ON	AREA	Set the effective area for exposure control. For setting the effective area, select either AUTO or CENTER. AUTO: (Histogram integration mode) Perform exposure control that does not depend on the position of the subject. CENTER: (Fixed frame emphasis mode) The effective area can be set arbitrarily. In order to suppress overexposure in the set effective area, exposure control that is not easily influenced is performed even when there is a high-brightness subject other than the effective area. *Default : AUTO
		LEVEL	Adjust the brightness during IR mode control. Brightness can be set in the range of 000 (dark) - 031 (bright). *Default : 015
ON	WDR	Set the wide dynamic range function. OFF: Disables the wide dynamic range function. ON: Links to IR mode and automatically activates the wide dynamic range function in night mode. By using the wide dynamic range function together, visibility can be further improved. *Default : OFF	

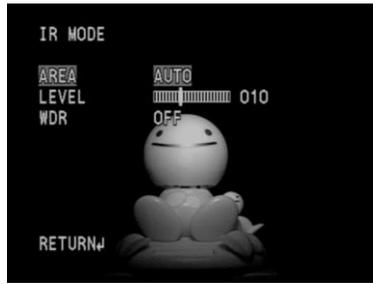
*This function can not be used with WDR of "3.6.1 Wide Dynamic Range (WDR)". When WDR is ON, the following settings are made.

(WDR/BLC)	IR MODE	OPERATION
WDR		
OFF	ON/OFF	Normal setting is possible.
ON	—	Regardless of the set value, IR MODE is invalid and the set value can not be changed. The notation on OSD is "-".

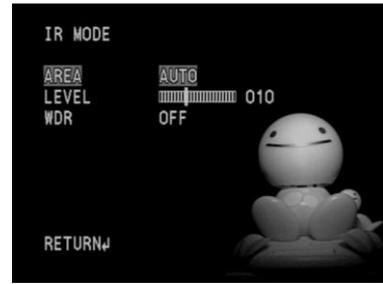
○Histogram Integration Mode (AUTO)



Left side of screen (proper exposure)



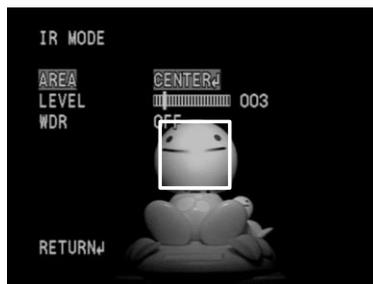
Center of screen (proper exposure)



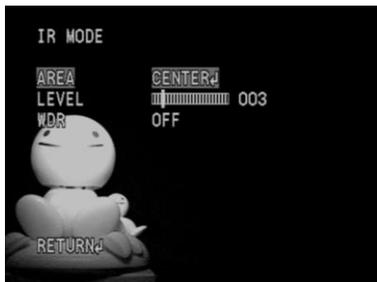
Right side of screen (proper exposure)

○Fixed frame emphasis mode(CENTER)

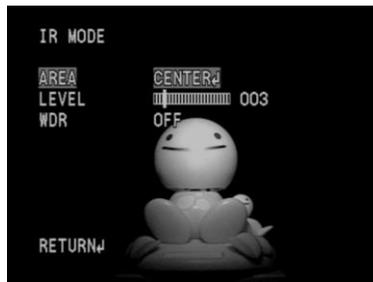
In order to suppress the overexposure in the set area, even if a subject with high brightness exists outside the area, it is hard to be affected, keeping the area properly exposed.



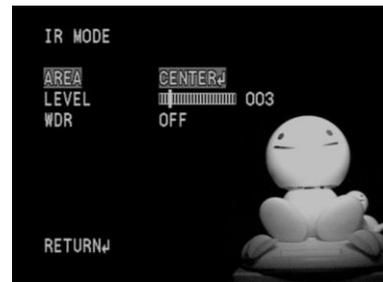
Effective area



Left side of screen (overexposure)



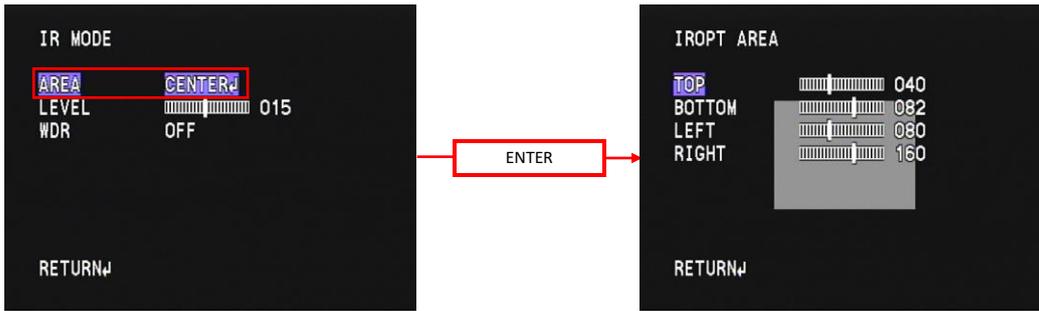
Center of screen (proper exposure)



Right side of screen (overexposure)

○Fixed frame emphasis mode area setting

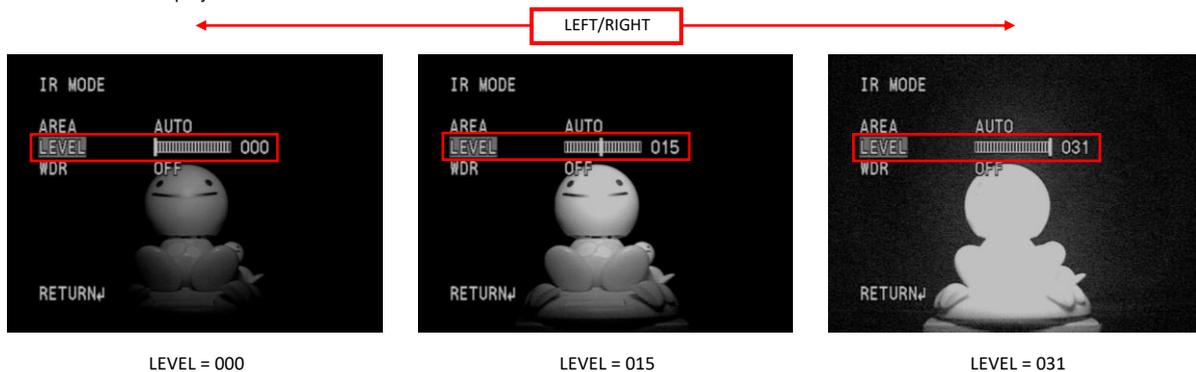
When CENTER is selected, pressing the ENTER key displays the IROPT AREA menu. Use the UP / DOWN keys to move the cursor up or down and select the item you want to adjust. Use the LEFT / RIGHT/key to make the adjustment.



AREA	(IROPT AREA MENU)	OPERATION
CENTER	TOP	Sets the upper position of the area. TOP can be set within the range of 001-114(136). *Default : 040(048) *(): the setting values of PAL
	BOTTOM	Sets the lower position of the area. BOTTOM can be set within the range of 009-122 (144). *Default : 082(096) *(): the setting values of PAL
	LEFT	Sets the left position of the area. BOTTOM can be set within the range of 001-223. *Default : 080(082) *(): the setting values of PAL
	RIGHT	Sets the right position of the area. BOTTOM can be set within the range of 017-239. *Default : 160(156) *(): the setting values of PAL

○LEVEL Settings

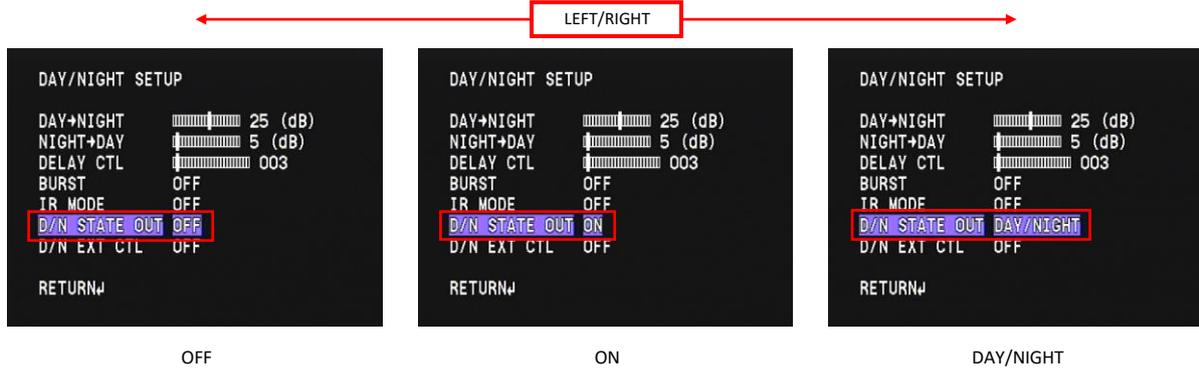
If the setting value is decreased too much, the gain value will fall below the set value of from NIGHT to DAY. Therefore, there is a possibility that hunting may occur, so please make through evaluation in the use environment. In case of hunting, increase the set value of LEVEL, or lower the illuminance of the infrared projector.



3.8.3.4 Day/Night State Output Mode (D/N STATE OUT)

Set the day/night status output mode (D/N STATE OUT). In the day/night status output mode, it is possible to conduct between the A2 and B2 terminals of the I/O connector in conjunction with the change of day/night mode. By connecting an infrared emitter etc. between the terminals, it is possible to turn on the infrared emitter in the night mode with the day/night function, and turn off the infrared emitter in the day mode. Use the LEFT / RIGHT keys to select OFF, ON, DAY / NIGHT.

*Default : OFF



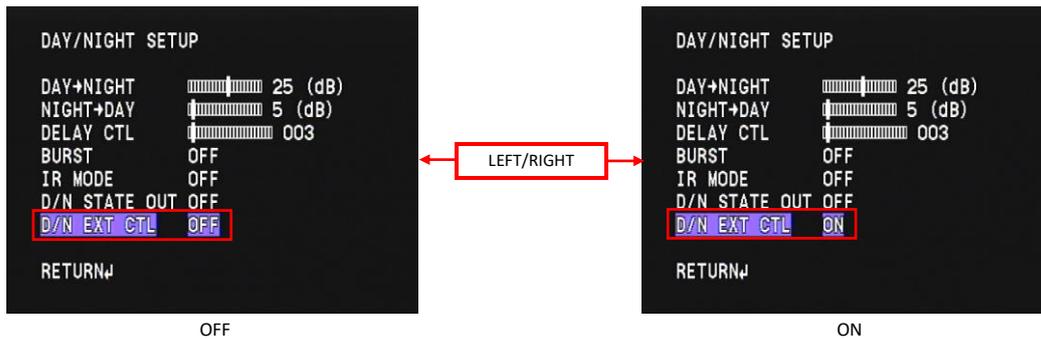
DAY/NIGHT	D/N STATE OUT	OPERATION
AUTO	OFF	Between A2 and B2 terminals is open.
	ON	Between A2 and B2 pins is always on.
	DAY/NIGHT	Between 2 and B2 pins, it conducts in night mode and opens in day mode.

*Refer to the H/W manual for details about voltage / output current between the A2 and B2 terminals of the I/O connector and connection of the infrared emitter.

3.8.3.5 Day/Night function External Control Mode (D/N EXT CTL)

Sets the Day/Night function external control mode (D/N EXT CTL). Day/Night function external control mode can switch from Day mode to Night mode by applying voltage between A1 - B1 terminals of the I/O connector, independent of ambient illuminance. Use the LEFT / RIGHT key to select ON / OFF.

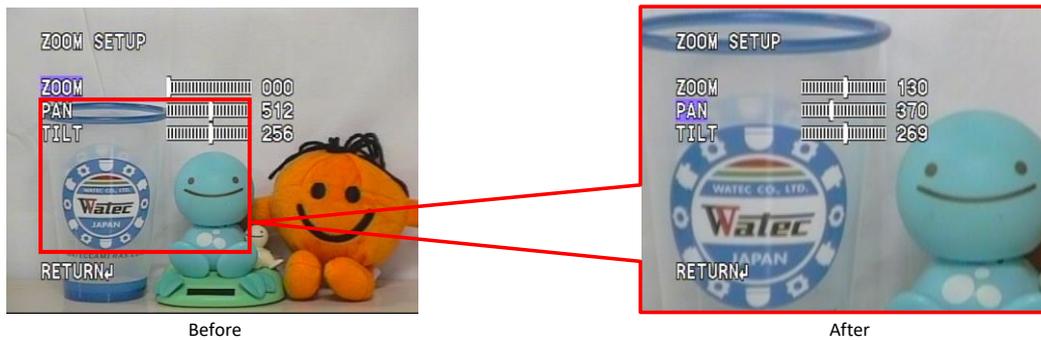
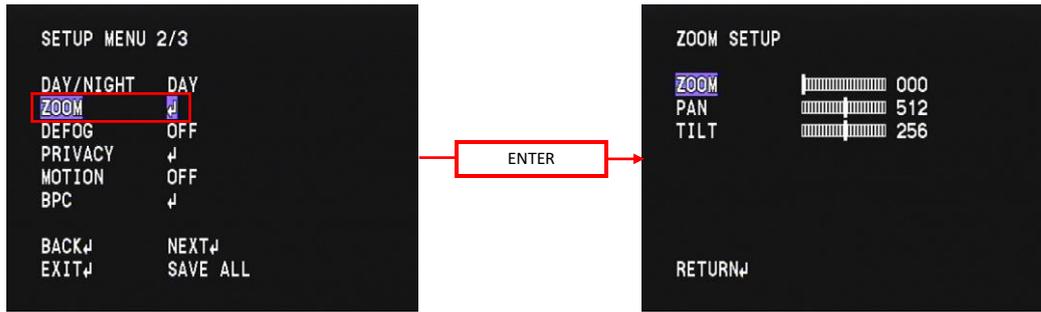
*Default : OFF



DAY/NIGHT	D/N EXT CTL	OPERATION
AUTO	OFF	It does not switch between day mode and night mode by external control.
	ON	Applying voltage between A1 and B1 terminals switches from day mode to night mode. *Refer to the H/W manual for details about the voltage, current and connection etc. applied between terminals A1 and B1.

3.9 Digital Zoom (ZOOM)

Set the digital zoom function (ZOOM). The function allows you to magnify and display a part of the screen. Place the cursor on ZOOM and press the ENTER key to display the ZOOM SETUP menu. Move the cursor up and down and use the LEFT / RIGHT key to adjust the item you want to.



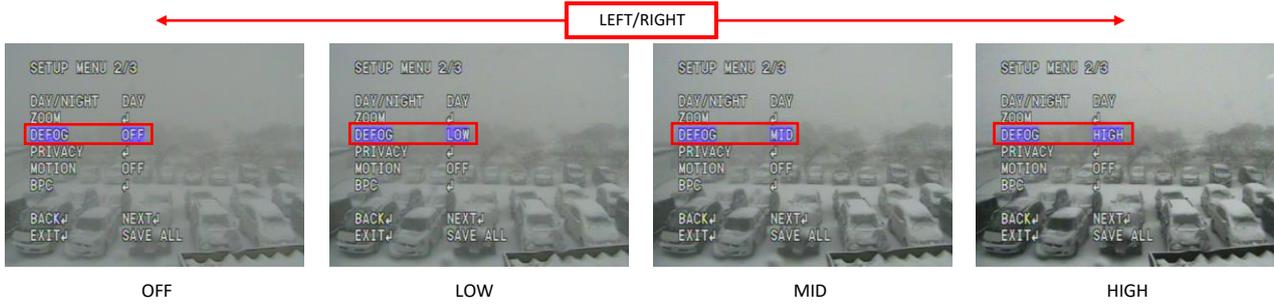
(ZOOM SETUP MENU)	OPERATION
ZOOM	Set the magnification of the digital zoom. Set the magnification within the range from x1 to x256. Use the LEFT / RIGHT keys to set the magnification. <u>*Default: 000</u>
PAN	Specify the image position in the horizontal direction (invalid when the magnification 1.0 is selected). Set the imaging position within the range from 000 (left end) to 512 (middle) to 1023 (right end). Use the LEFT / RIGHT keys to set the imaging position. *PAN is a function that uses the surplus of the area enlarged with ZOOM, therefore the operation range may vary depending on the magnification. <u>*Default: 512</u>
TILT	Specify the image position in the vertical direction (invalid when the magnification 1.0 is selected). Set the imaging position within the range from 000 (upper end) to 256 (middle) to 511 (lower end). Use the LEFT / RIGHT keys to set the imaging position. *TILT is a function that uses the surplus of the area enlarged with zoom, therefore the operation range may vary depending on the magnification. <u>*Default: 256</u>

3.10 Defog (DEFOG)

Set the defog (DEFOG) settings. When fog or smoke occurs, the contrast of the screen decreases and the visibility deteriorates. The defog function can improve the contrast. The defog function can improve the contrast of visually impaired images with fog and or smoke and improve visibility.

Selectable from OFF, LOW, MID or HIGH. Use the LEFT/RIGHT Key to select the DEFOG setting.

*Default : OFF



DEFOG	OPERATION
OFF	No operations
LOW	Set the correction amount of the DEFOG.
MID	The larger that set value, the higher the constact. It improves the visibility.
HIGH	

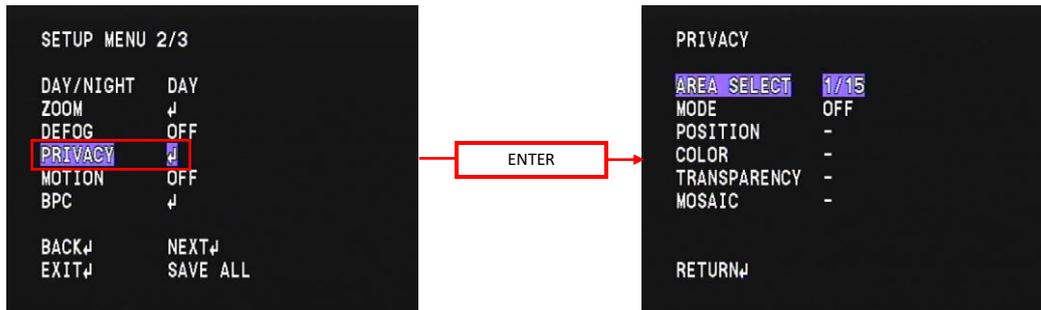
3.11 Privacy Masking (PRIVACY)

Set privacy masking (PRIVACY). The privacy masking can hide areas that you do not want to display on the screen. Up to 15 masks can be displayed on the screen. You can set the display area, color, darkness and mosaic processing for each mask independently.

Move the cursor to PRIVACY and select ON or OFF with LEFT / RIGHT key. Pressing the ENTER key when ON is selected displays the PRIVACY menu.

Move the cursor up and down and adjustment the item you want to adjust while using the LEFT / RIGHT keys.

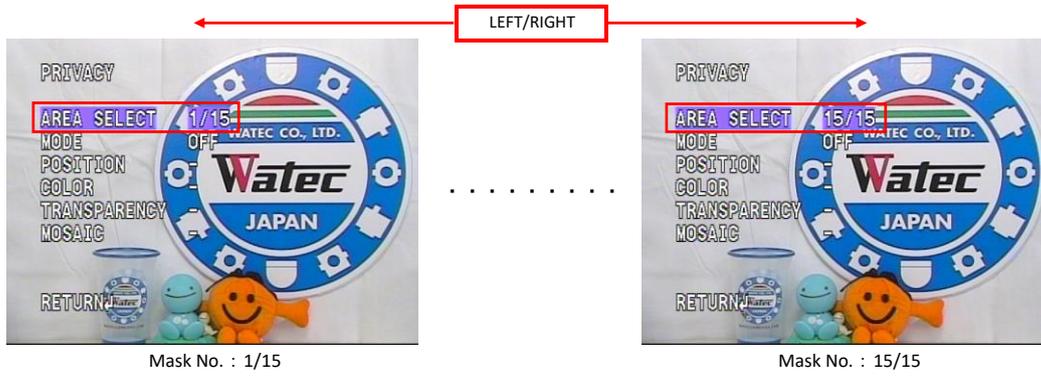
*Default : OFF



(PRIVACY MENU)	OPERATION
AREA SELECT	Select the mask number to be set. The masking number is selected from 1/15 - 15/15. *Default : <u>1/15</u>
MODE	Set display / non-display of each mask. Select ON to display the mask, OFF to hide the mask. *Default : <u>OFF</u>
POSITION	Set the area to be masked. Move the cursor on POSITION and press the ENTER key to display the window for setting the mask area. *Default: <u>the center of the screen</u>
COLOR	Set the masking color. You can select the color from the following 8 colors; WHITE, BLACK, RED, GREEN, BLUE, YELLOW, CYAN or MAGENTA. *Default : <u>WHITE</u>
TRANSPARENCY	Set the transparency of the masking. The masking transparency can be selected from 0.00, 0.50, 0.75 and 1.00. The higher the set value, the lower the transparency of the masking, 1.00 will completely mask the masking area. *Default : <u>1.00</u>
MOSAIC	Set ON/OFF of mosaic processing. Mosaic processing on the masking area available when ON is selected. *When TRANSPARENCY is set to 1.00, mosaic processing is not available. *Default : <u>OFF</u>

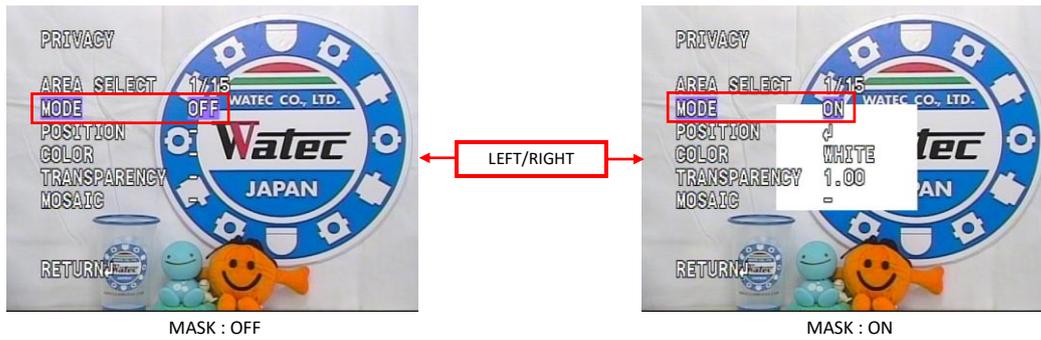
○AREA SELECT Settings

Select the mask number to be set.



○MODE Settings

Set mask display or non-display. When MODE is ON, a mask is displayed in the center of the screen.



○POSITION Settings

Use the UP/DOWN/LEFT/RIGHT key to set the masking position.

(6) Move the cursor to POSITION and press the ENTER key to display the mask area setting again.



(1) Select POSITION and press the ENTER key

ENTER



(2) The mask area setting is displayed.
Use the UP / DOWN / LEFT / RIGHT keys to set the upper left position of the mask area and press the ENTER key.

ENTER



(3) Use the UP / DOWN / LEFT / RIGHT keys to set the upper right position of the mask area and press the ENTER key.

ENTER

ENTER



(4) Use the UP / DOWN / LEFT / RIGHT keys to set the lower right position of the mask area and press the ENTER key.

ENTER



(5) Use the UP / DOWN / LEFT / RIGHT keys to set the lower left position of the mask area and press the ENTER key.
Press the ENTER key to return to the PRIVACY menu.

OCOLOR Settings

Set the color of masking.



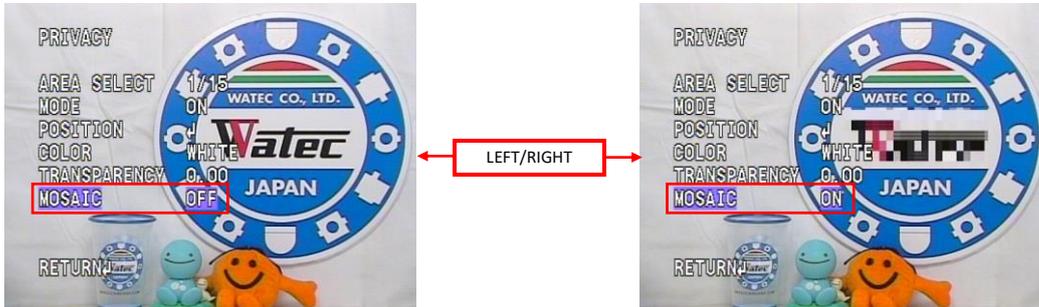
OTRANSparency Settings

Set the transparency of the masking.



OMOSAIC Settings

Set ON/OFF of mosaic processing.



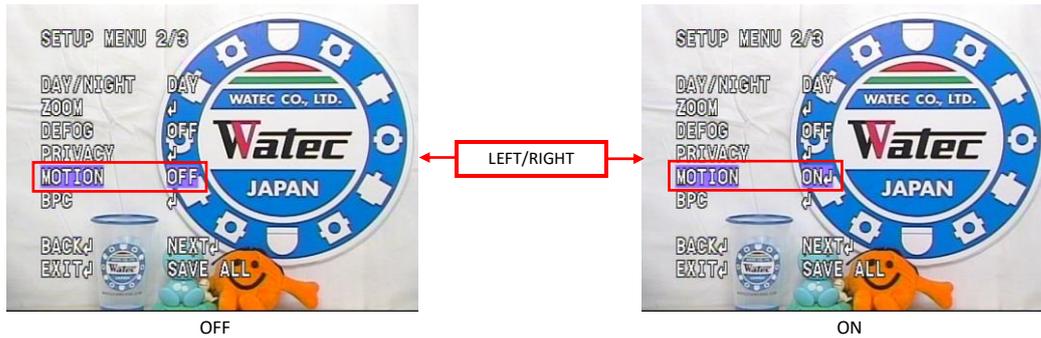
3.12 Motion Detection (MOTION)

Set motion detection (MOTION). The function allows conduction between A3 and B3 terminals of the I / O connector when a change on the screen is detected.

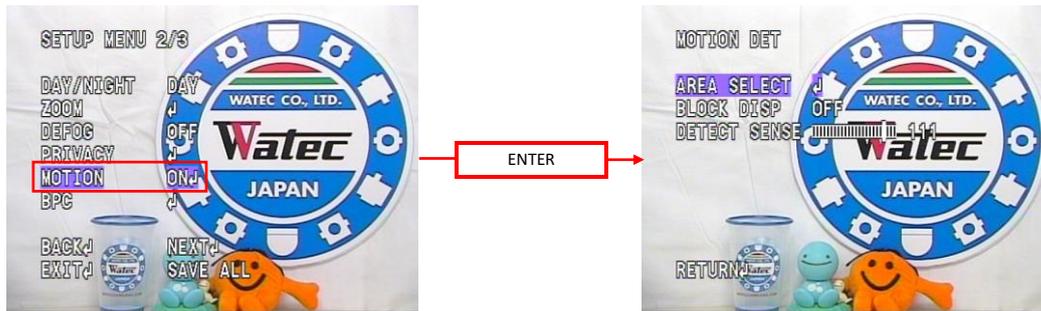
By connecting an alarm device and others between terminals, alarm output by sound or light available.

Use the UP / DOWN keys to move the cursor to MOTION and use the LEFT / RIGHT key to select ON or OFF.

*Default: OFF



When ON is selected, pressing the ENTER key will display the MOTION DET menu. Use the UP / DOWN key to move the cursor up or down and adjust with the LEFT / RIGHT key for the item you want to adjust.



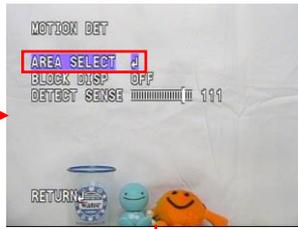
MOTION	(MOTION DET MENU)	OPERATION
OFF	—	No operations
ON	AREA SELECT	Set the motion detection area. Use the UP / DOWN / LEFT / RIGHT / ENTER key to set the area. *Default : the center in the screen
	BLOCK DISP	Set display/non-display of motion detection result. When ON is set, the detection result of the block where movement is detected can be output on the screen. By outputting on the screen you can visually check the function. *Default : OFF
	DETECT SENSE	Set the sensitivity. Sensitivity is set in the range of 000 - 127. Increasing the set value will detect even slight changes and decreasing the set value makes difficult to detect the change. *Default : 111

*Refer to the H/W manual for details about voltage, output current, connection of alarm devices and other between A3 and B3 terminals of the I / O connector.

○ AREA SELECT Settings

Use the UP/DOWN/LEFT/RIGHT/ENTER to set the area to be detected.

(6) Move the cursor to AREA SELECT and press the ENTER key, the detection area setting screen will be displayed again.



(1) Select AREA SELECT and press the ENTER key.

ENTER



(2) The area setting screen as shown on the left

A LONG PRESS OF ENTER KEY



(3) Use the UP / DOWN / LEFT / RIGHT keys to move the light blue cursor to the desired position and press the ENTER key.

ENTER



(4) Four blocks in the cursor light up and set as the detection area. To set the detection area as a dead zone, move the cursor to the detection area you want to set as a dead zone and press the ENTER key. The 4 blocks in the cursor will go out and the dead zone will be set.

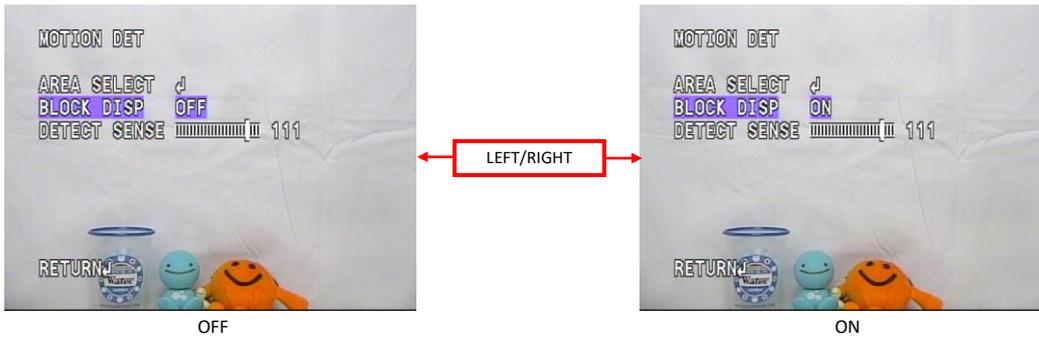
*You can set the four blocks at once.



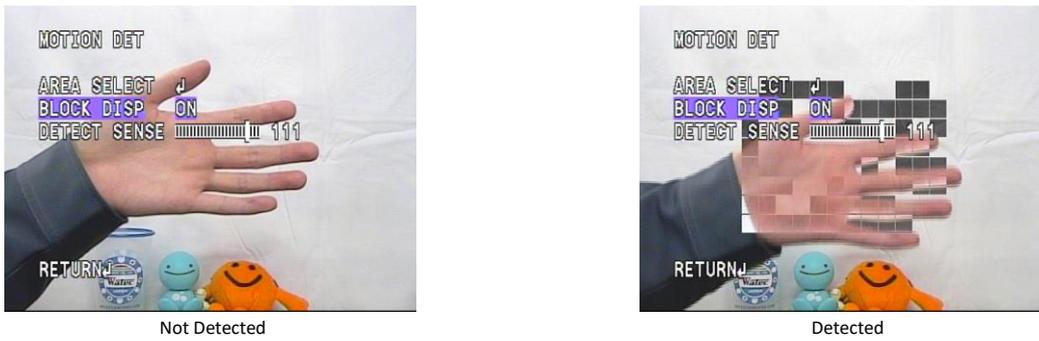
(5) After setting the detection area, press and hold the ENTER key and release to return to the MOTION DET menu screen.

○BLOCK DISP Settings

Use the LEFT/RIGHG key to set display/non-display of motion detection result.



When motion is detected, the block will flash within the area set by AREA SELECT. When motion is not detected, nothing will be displayed



○DETECT SENSE settings

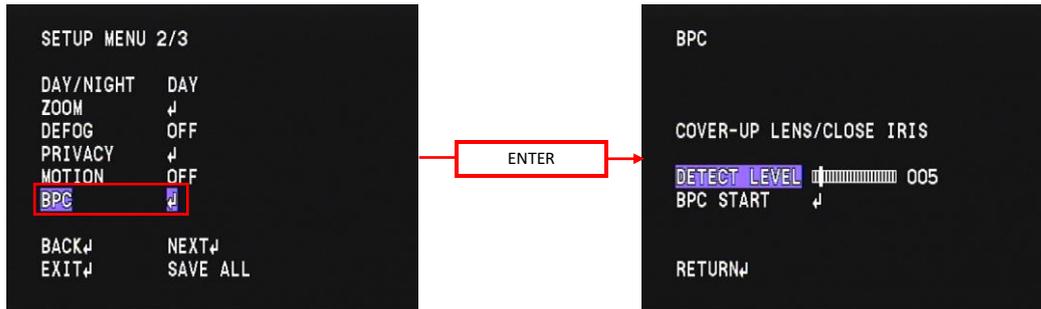
Use the LEFT/RIGHT key to set the sensitivity.



3.13 Blemish Pixel Compensation (BPC)

Set the BPC. WAT-233 is manufactured using high-quality CCD devices selected according to strict shipping standards of CCD manufacturer though it is inevitable that blemish pixels occur after shipment. This function automatically detects and corrects the subsequent blemish pixel and keeps the image quality. Move the cursor to BPC with the UP / DOWN key and press the ENTER key, the BPC menu will be displayed.

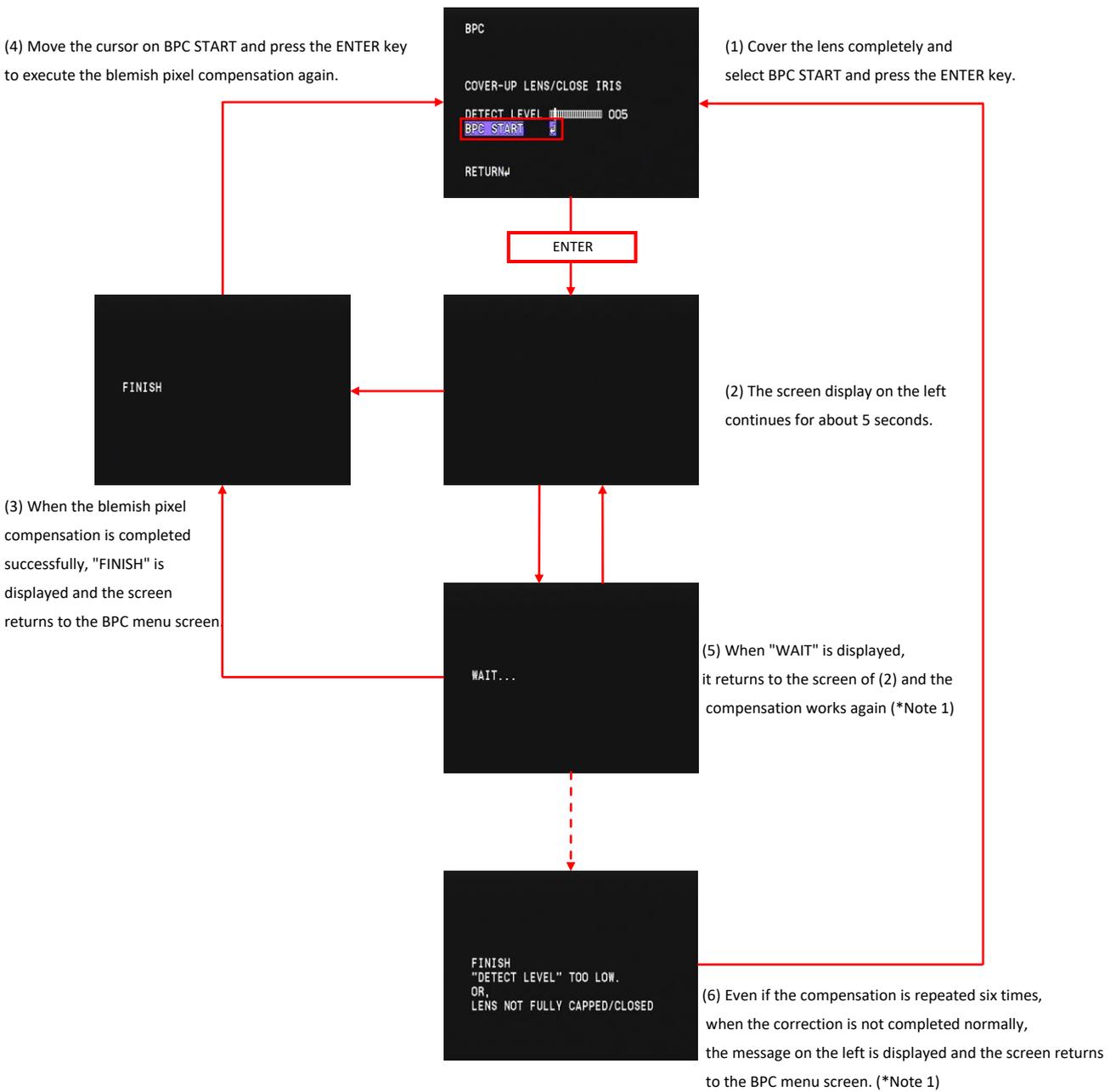
*Default : 005



(BPC MENU)	OPERATION
DETECT LEVEL	Set the detection level. Set the level within the range of 000 - 064. The smaller the set value, the easier to detect small blemish pixels. *Default : 005
BPC START	Press the ENTER key to detect and correct blemish pixels.

○Blemish pixel compensation process flow

(4) Move the cursor on BPC START and press the ENTER key to execute the blemish pixel compensation again.



* When saving the correction result after completing the compensation, save the set value according to 『3.18 Save Setting (SAVE ALL)』.

When you do not save the setting value and turn off the power supply, it will return to the setting value before executing the compensation.

*(Note 1): The followings are the factors that cause the message of (4) and (5) to be displayed.

- 1) The setting value of "DETECT LEVEL" is low and the number of blemish pixel detected during the compensation exceeds the correctable number (64 points).
- 2)When the lens is not fully closed. (in this case where the lens is open, the bright part on the screen is recognized as blemish pixels, as a result the number of detections exceeds the correctable number and the message screen of (4) appears as same as in(1)).

When (4) screen is displayed and the compensation is executed again, the camera automatically increases the set value of DETECT LEVEL and operates the compensation again. Increase amount of DETECT LEVEL increases from 1, 2, 4, 8, 16 from the initial setting value at the time of the compensation execution.

(Ex.) Initial setting value : "0"

First time: 0 → 2nd: 1 (+1) → 3rd: 3 (+2) → 4th: 7 (+4) → 5th: 15 (+8) → 6th: 31 (+16)

When the compensation is not completed normally even after six repetition, the (5) message is displayed. In that case, make sure that the lens is fully closed and when the lens is fully closed, increase the set value of DETECT LEVEL and execute the compensation again.

3.14 Synchronization Method Display (SYNC)

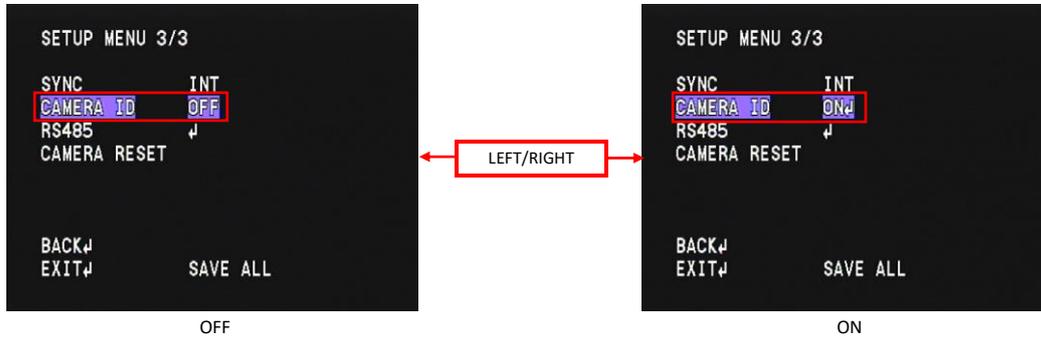
Displays the synchronization method (SYNC) of the camera. This item is a menu displaying the current camera synchronization method, so you can not change the settings.

As the synchronization method of WAT-233 is only the internal synchronization method, it is always displayed as "INT".

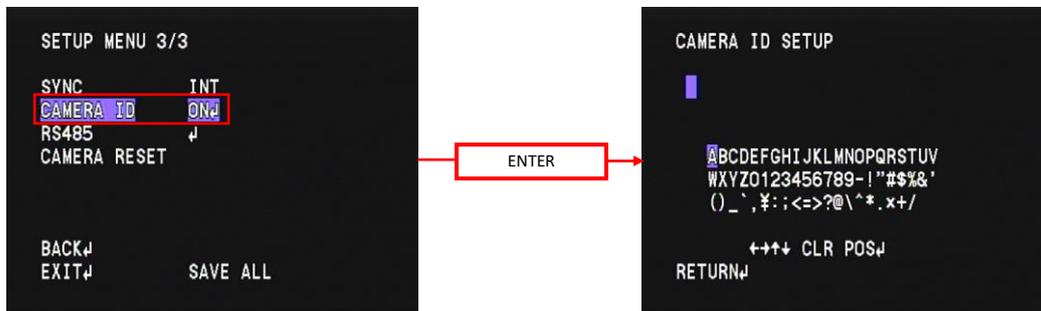
3.15 Camera ID Setting (CAMERA ID)

Set camera ID (CAMERA ID). The function displays arbitrary characters on the screen. It is effective for identifying the camera on the screen when using multiple cameras. Move the cursor to CAMERA ID with UP / DOWN key and use the LEFT / RIGHT key to select ON / OFF.

*Default : OFF



Pressing ENTER key when ON is selected displays CAMERA ID menu. Use the UP/DOWN/LEFT/RIGHT keys to select the character you want to display and use the ENTER key to enter the characters.

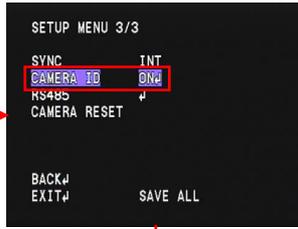


CAMERA ID	(CAMERA ID SETUP MENU)	OPERATION
OFF	—	CAMERA ID not display
ON	(INPUT)	The characters that can be entered are displayed in the CAMERA ID SETUP menu. Up to 52 characters can be entered for characters, and characters that can be used are alphabet (capital), numbers, and symbols. *Default : blank
	←→ ↑ ↓	Set the position of the cursor when entering characters. After entering a character, you can change the character by moving the cursor to the character you want to change and entering another character.
	CLR	Delete the entered characters.
	POS	Set the display position of the input character. Move the cursor to POS and pressing the ENTER key displays a window for setting the display position of the character. *Default position : Upper left of the screen.

○Character Entering Settings

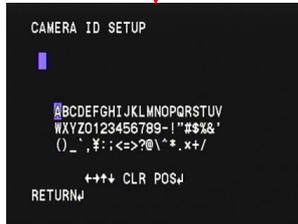
Use the UP/DOWN/LEFT/RIGHT/ENTER key to set the CAMERA ID.

(4) Move the cursor to CAMERA ID and press the ENTER key, the CAMERA ID menu will be displayed again.



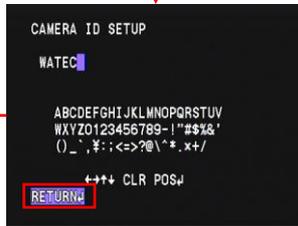
(1) Move the cursor to CAMERA ID and press the ENTER key

ENTER



(2) Use the UP/DOWN/LEFT/RIGHT key to select the character you want to display and use the ENTER key to enter the characters.

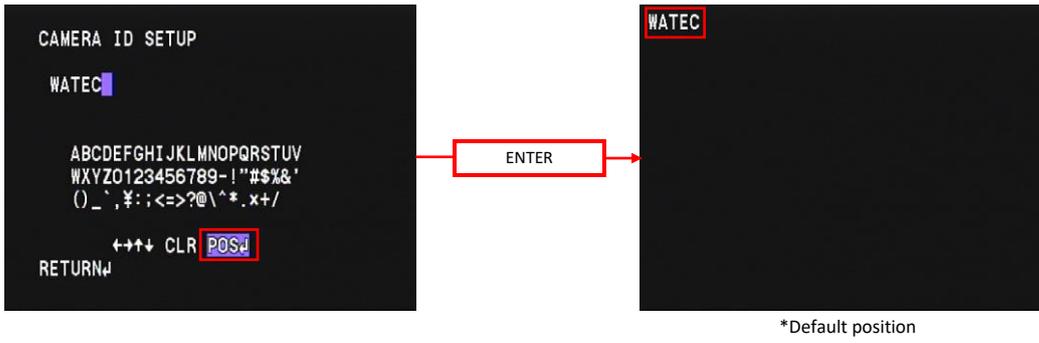
ENTER



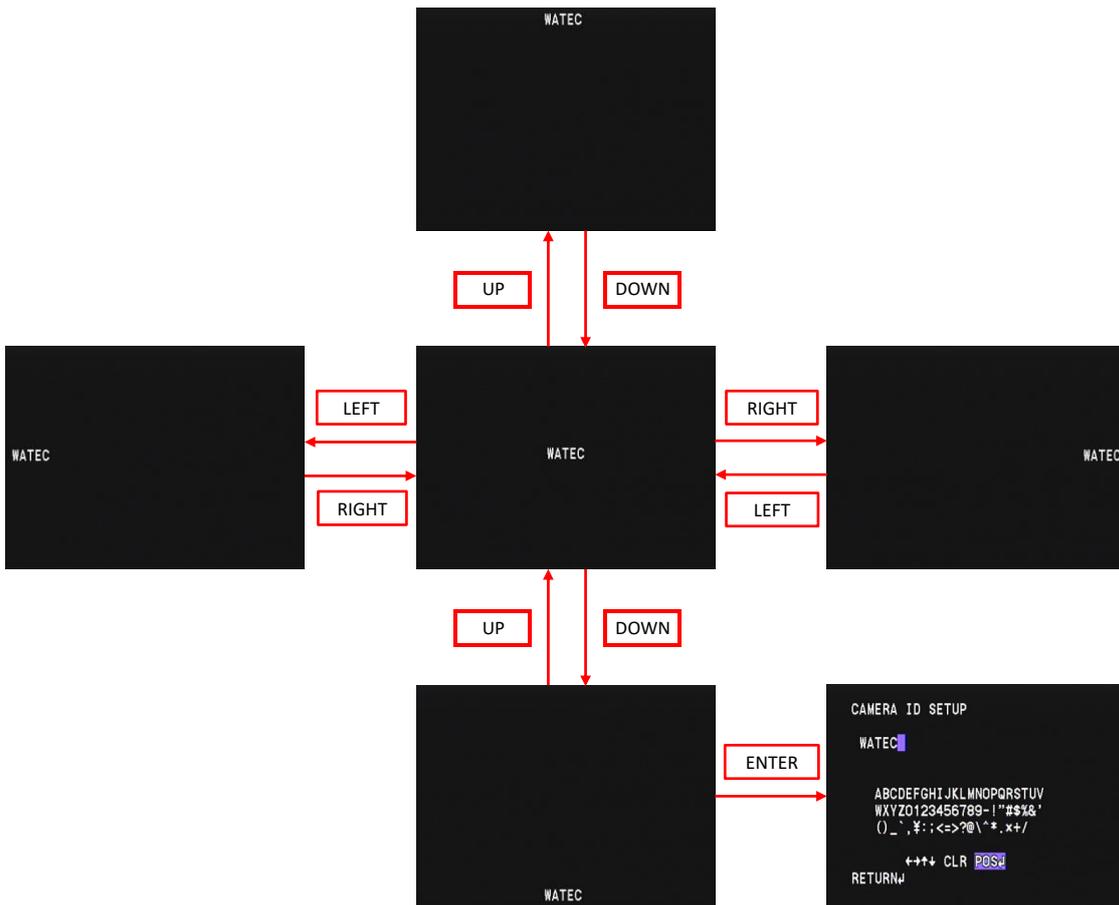
(3) After entering characters, move the cursor to "RETURN" and press the ENTER key to return to SETUP MENU 3/3.

○ Display position setting

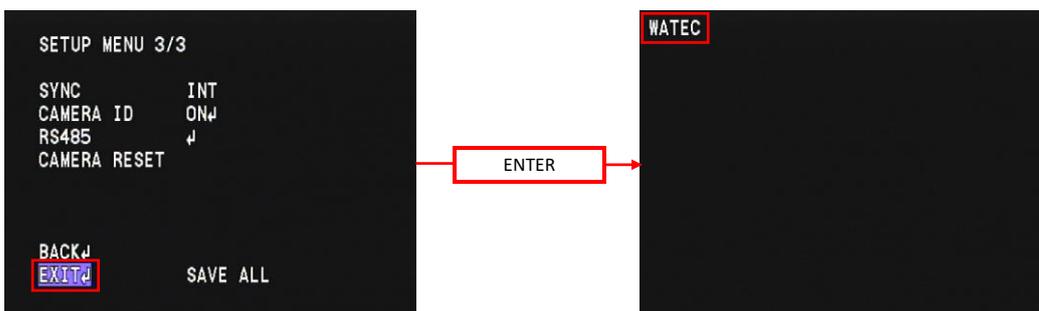
Move the cursor to POS and pressing the ENTER key displays the display position setting menu.



Use the UP/DOWN/LEFT/RIGHT key to set the display position. After setting, press the ENTER key to return to the CAMERA ID menu.

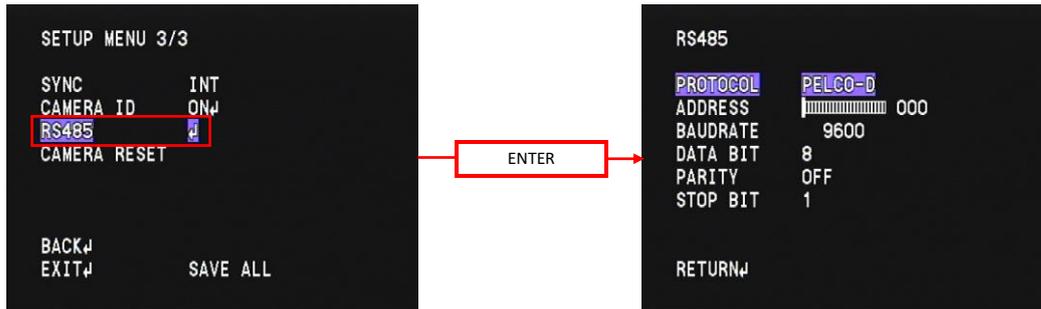


*CAMERA ID is displayed when the OSD menu screen is turned off. While the OSD menu is displayed, CAMERA ID does not show up. To turn off the OSD menu, move the cursor to EXIT with UP/ DOWN key and press the ENTER key to display the EXIT menu.



3.16 RS485 Communication (RS485)

Set the RS485 communication. WAT-233 can be controlled through OSD operation by RS485 communication. Connect a communication cable between the A5 and B5 terminals of the I/O connector and control the OSD menu by sending commands from PC or Pelco-D protocol compatible DVR / controller etc. Move the cursor to RS485 with the UP / DOWN key and press the ENTER key, the RS485 menu will be displayed. Use the UP / DOWN key to move the cursor up and down and use the the LEFT / RIGHT key to set the item you want to.



(RS485 Menu)	OPERATION
PROTOCOL	Display supported protocols. The protocol used for RS485 communication is Pelco-D. Since the item simply displays supported protocols, you can not change settings.
ADDRESS	Set the camera address. The address can be set in the range of 000 - 255. <u>*Default : 000</u>
BAUDRATE	Set the baud rate. The baud rate can be set from 2400, 4800, 9600, 19200, 38400, 57600 and 115200. <u>*Default : 9600</u>
DATA BIT	Data bits are fixed to 8 bits. Since the item simply displays data bits, you can not change settings
PARITY	Set the parity bit. The parity bit can be set from OFF, ODD and EVEN. <u>*Default : OFF</u>
STOP BIT	Set the stop bit. Stop bits can be set to 1 or 2. <u>*Default : 1</u>

*For details about the voltage applied to the A5 to B5 terminals of the I/O connector and connection of the communication cable, refer to the H / W manual.

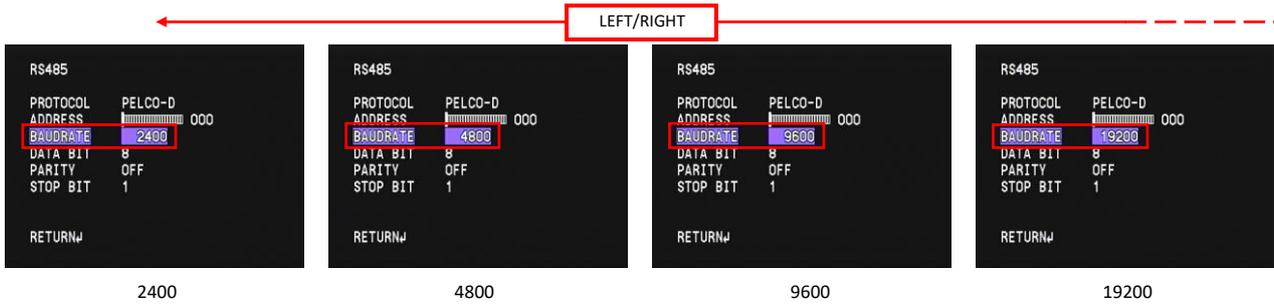
○ADDRESS Settings

Use the LEFT/RIGHT key to set the camera ADDRESS.



○BAUDRATE Settings

Use the LEFT/RIGHT key to set the BAUDRATE.



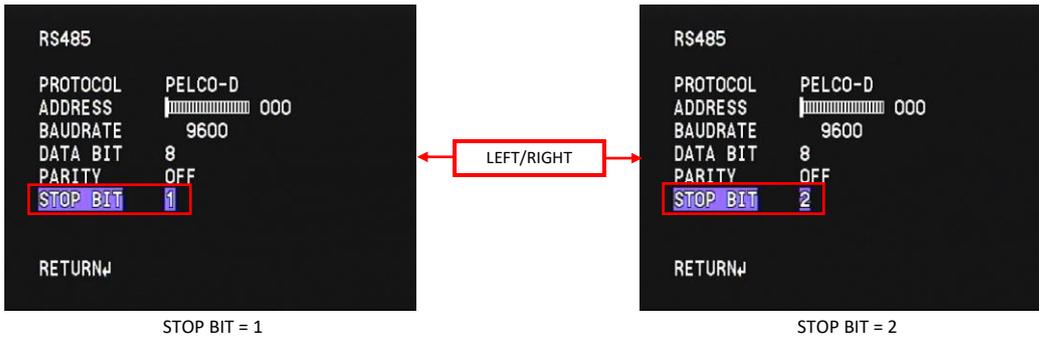
○PARITY Settings

Use the LEFT/RIGHT key to set the PARITY.



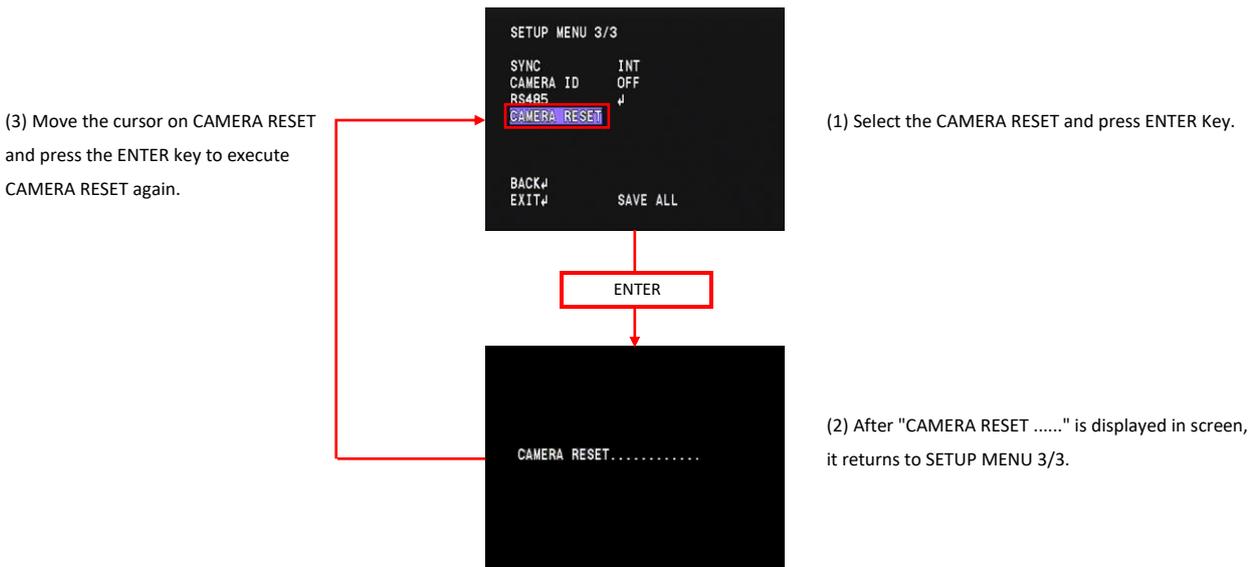
○STOP BIT Settings

Use the LEFT/RIGHT key to set the STOP BIT.



3.17 Factory Reset (CAMERA RESET)

This function returns the camera setting to factory default (CAMERA RESET) state. Even after changing camera settings, you can return the camera to the factory default state by executing camera reset. Move the cursor to CAMERA RESET with UP/DOWN key and press the ENTER to execute the camera reset.

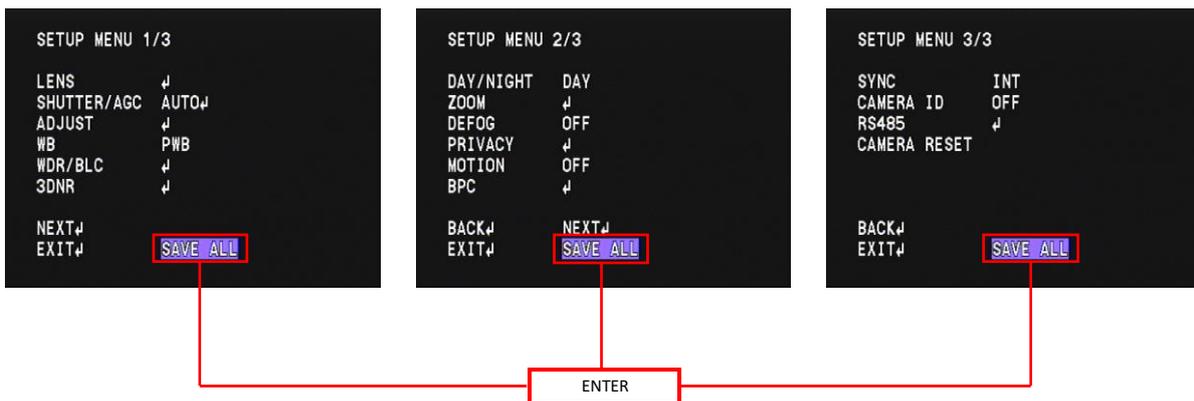


*When saving the setting value of the factory setting after executing camera reset function, save the value according to 『3.18 Save Settings (SAVE ALL)』. When the power is turned off without saving the setting value, it returns to the setting value before executing the camera reset.

3.18 Save Settings (SAVE ALL)

Saving (SAVE ALL) the changed camera settings. After changing camera settings, you can save the changed settings by executing SAVE ALL on the EXIT page. Move the cursor to SAVE ALL with UP / DOWN / LEFT / RIGHT and press ENTER to save the setting

*When you turn off the power or execute the LOAD operation without saving the setting value after changing, it will return to the state before the setting change.



3.19 EXIT Menu (EXIT)

Exit the OSD menu. Move the cursor to EXIT with UP / DOWN key and press the ENTER key.

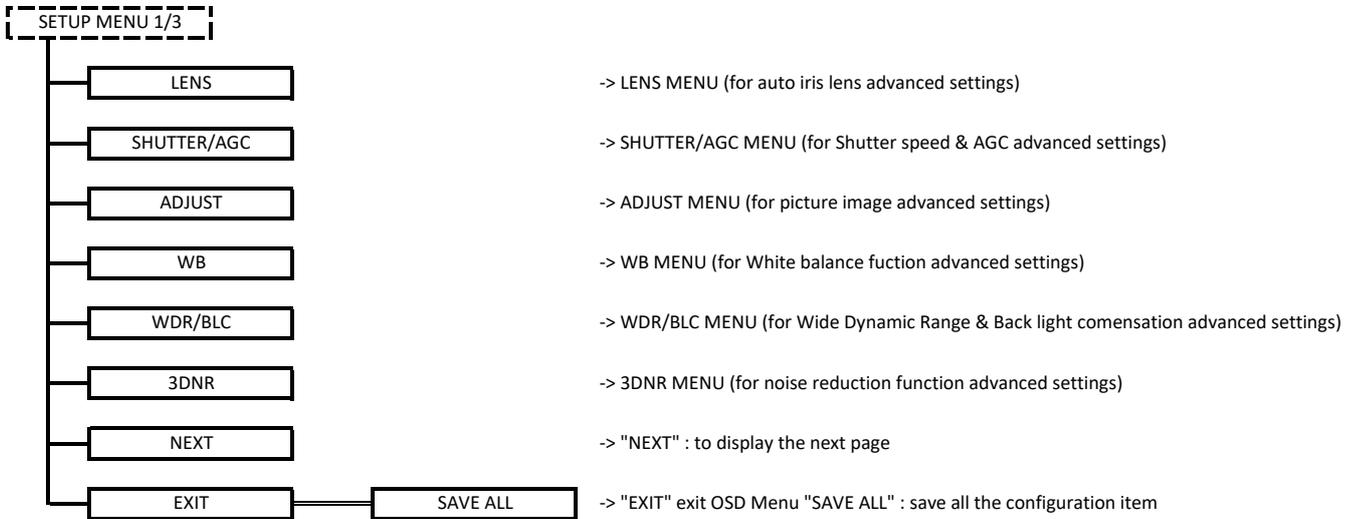


4. OSD Menu Tree

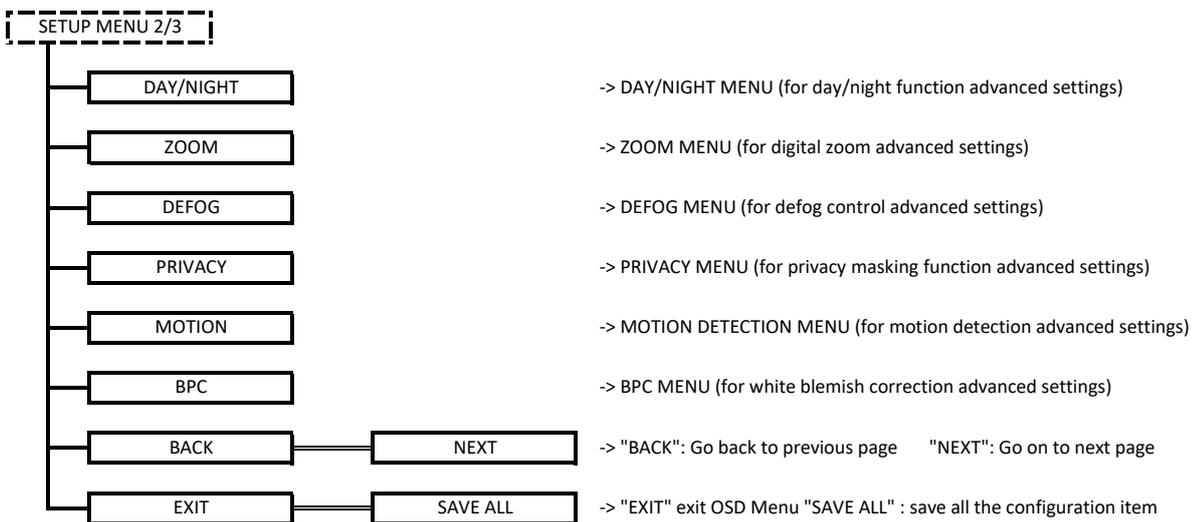
- Legend:
- Represents OSD menu item
 - Represents the operation by UP, DOWN and ENTER key of the remote control
 - Represents the operation by RIGHT, LEFT and ENTER key of the remote control
 - Represents a selectable mode and setting value of each menu item
 - Represents the title on the OSD and not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

The red letter represents the initial setting of each function.

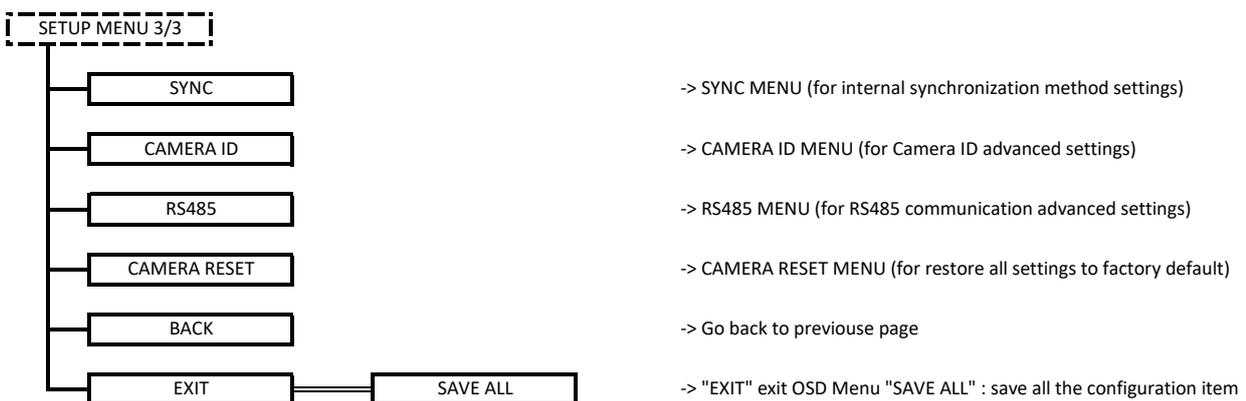
OS SETUP MENU 1/3



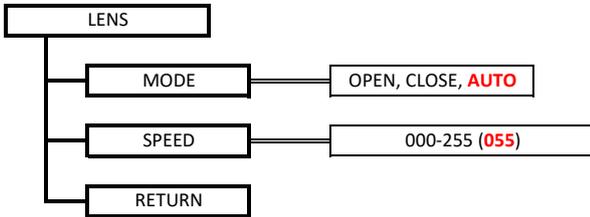
OS SETUP MENU 2/3



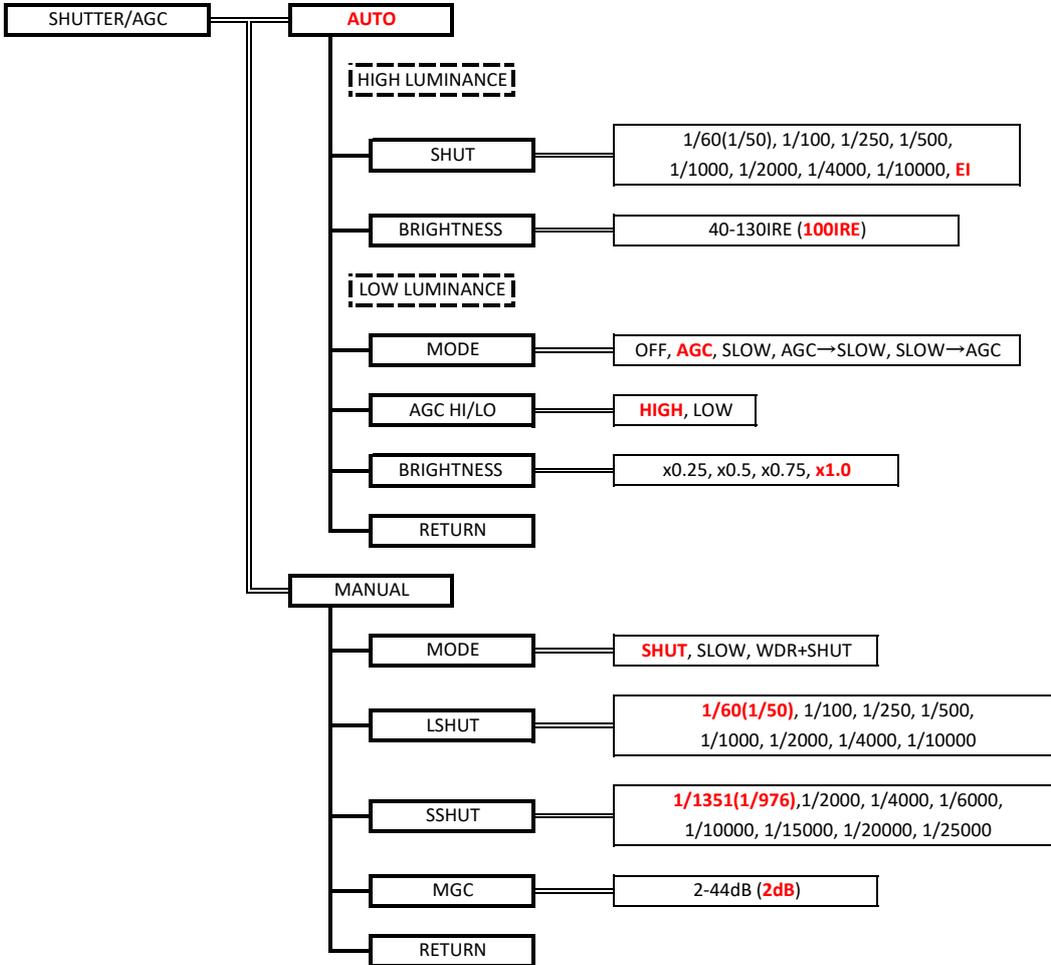
OS SETUP MENU 3/3



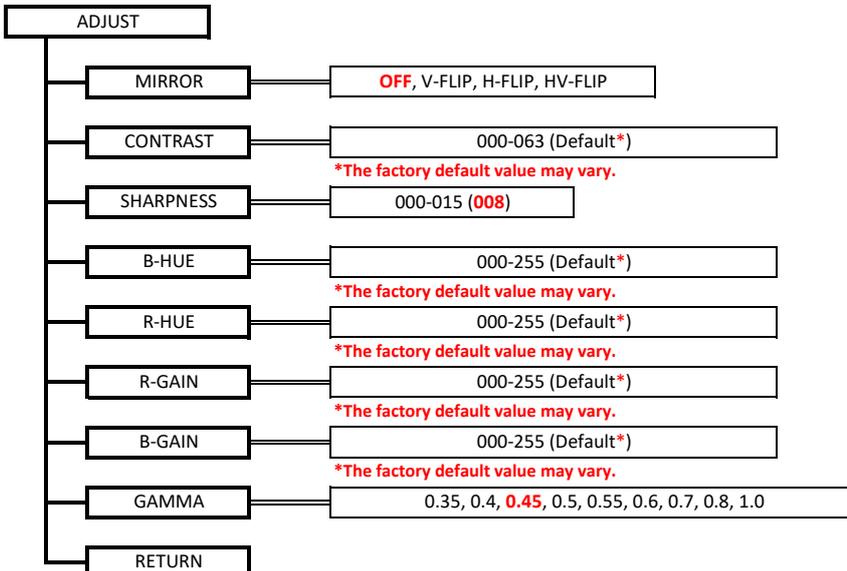
OLENS(SETUP MENU 1/3)



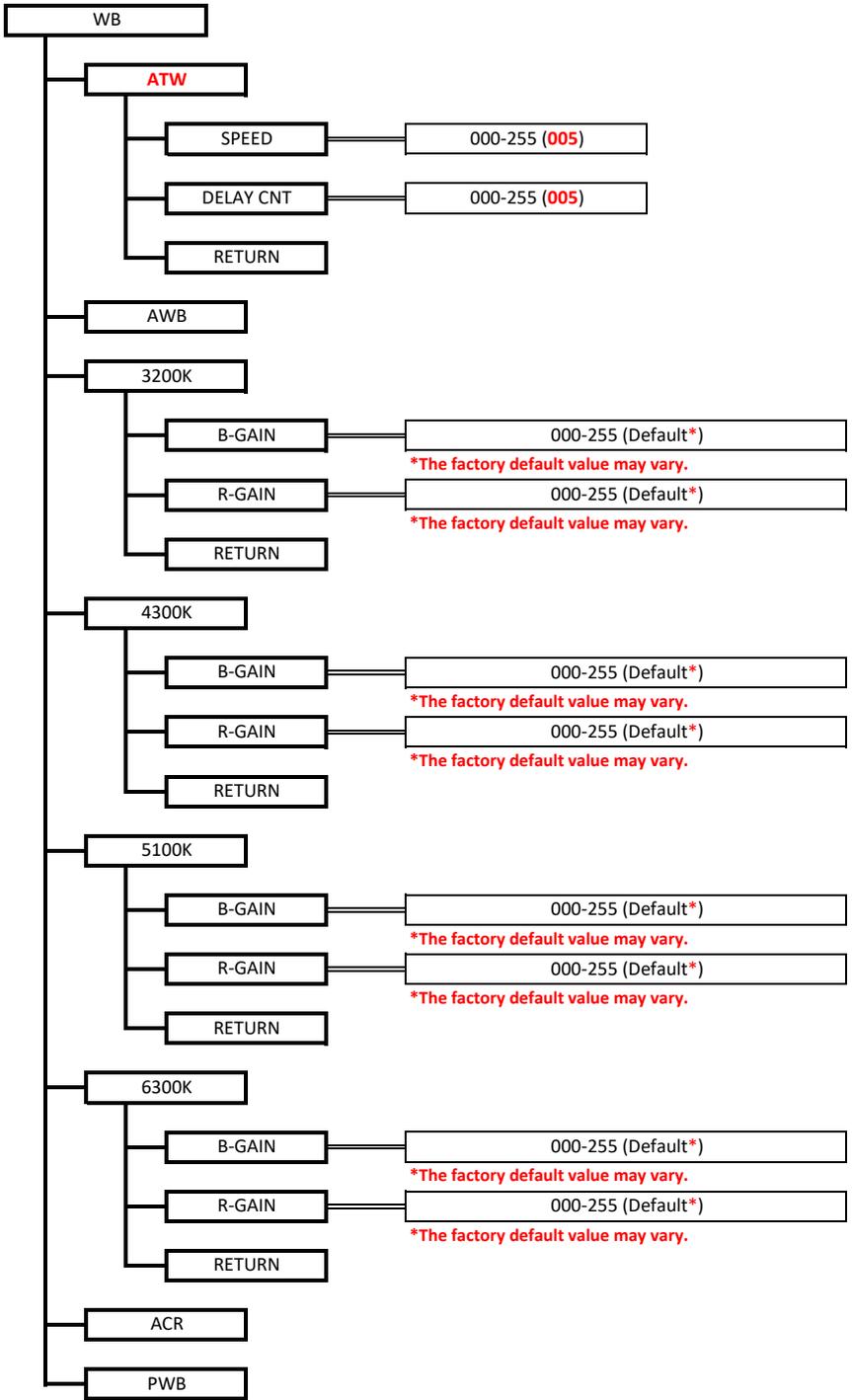
OSHUTTER/AGC(SETUP MENU 1/3)



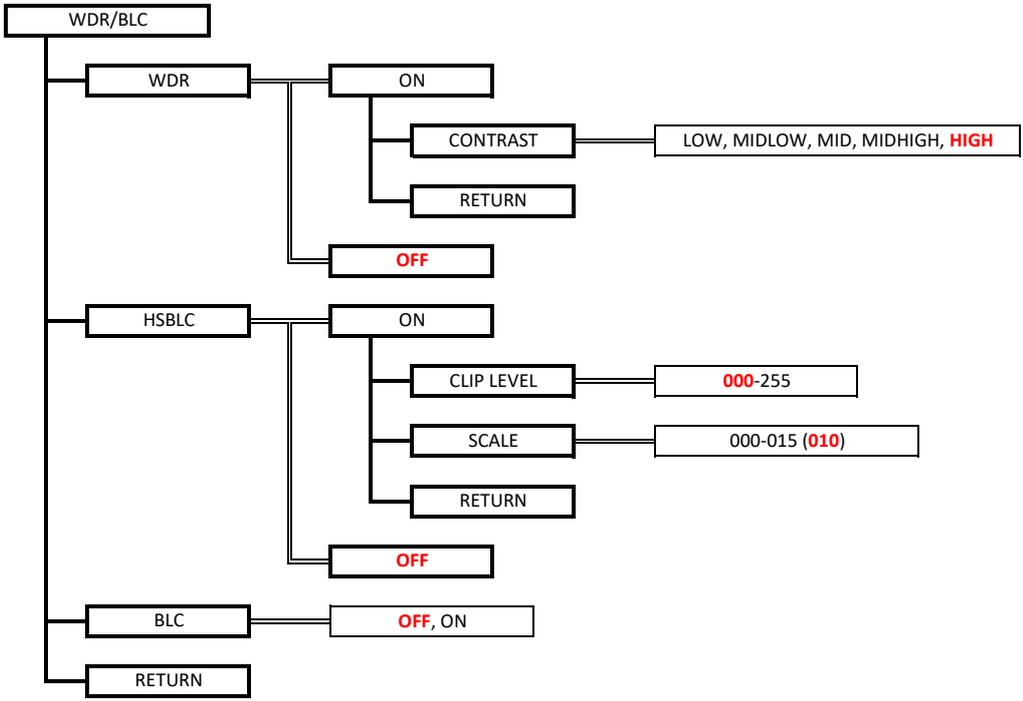
OADJUST(SETUP MENU 1/3)



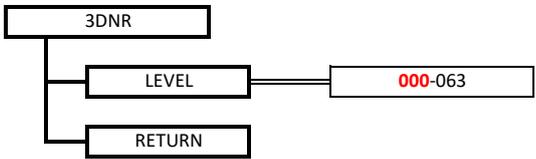
OWB(SETUP MENU 1/3)



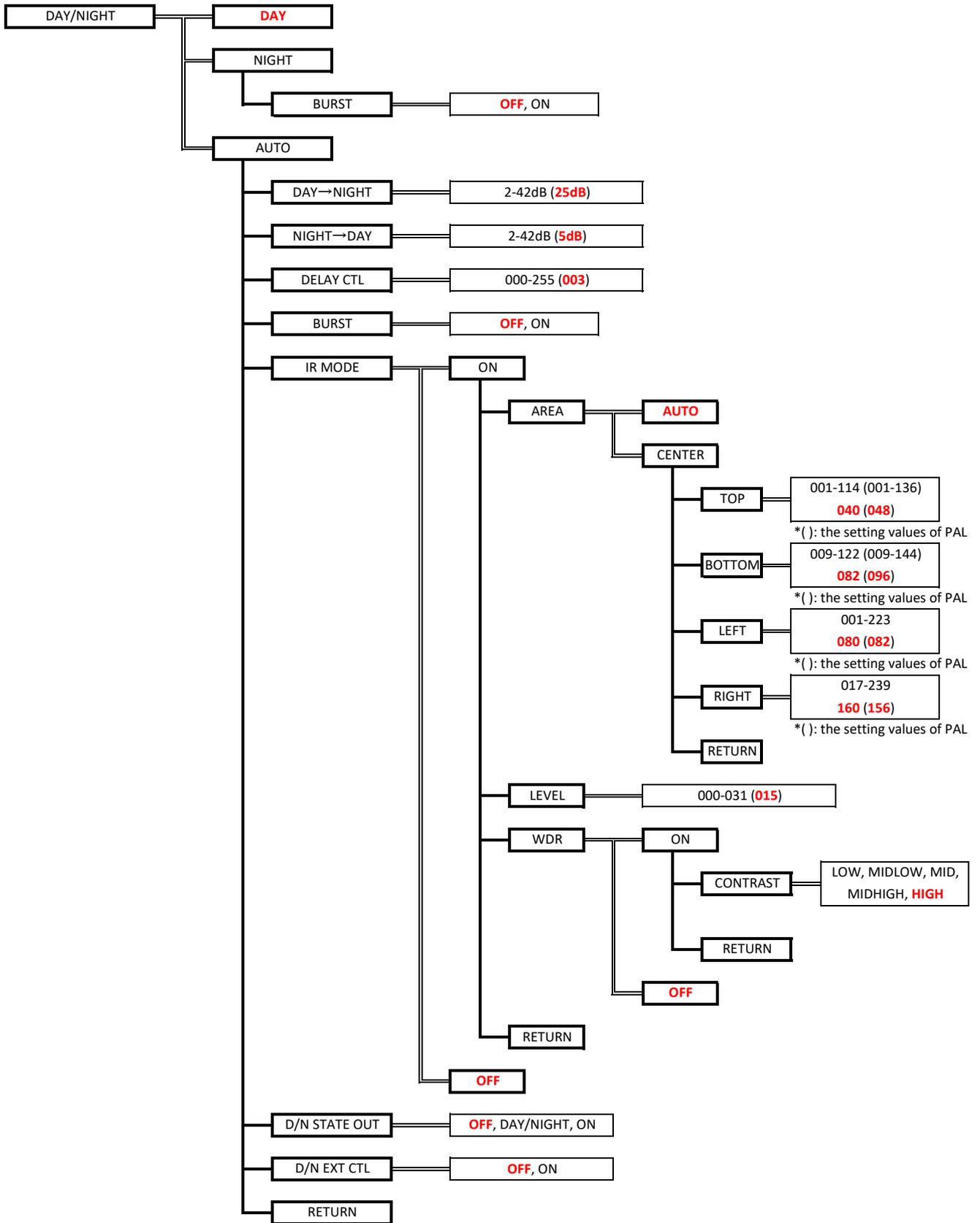
OWDR/BLC(SETUP MENU 1/3)



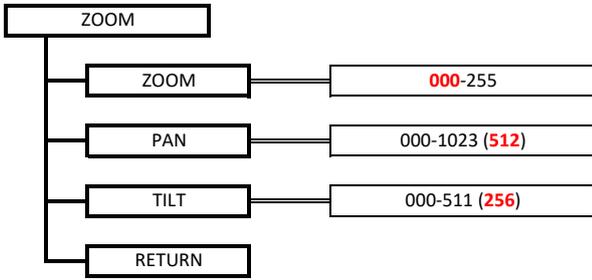
O3DNR(SETUP MENU 1/3)



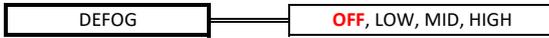
ODAY/NIGHT(SETUP MENU 2/3)



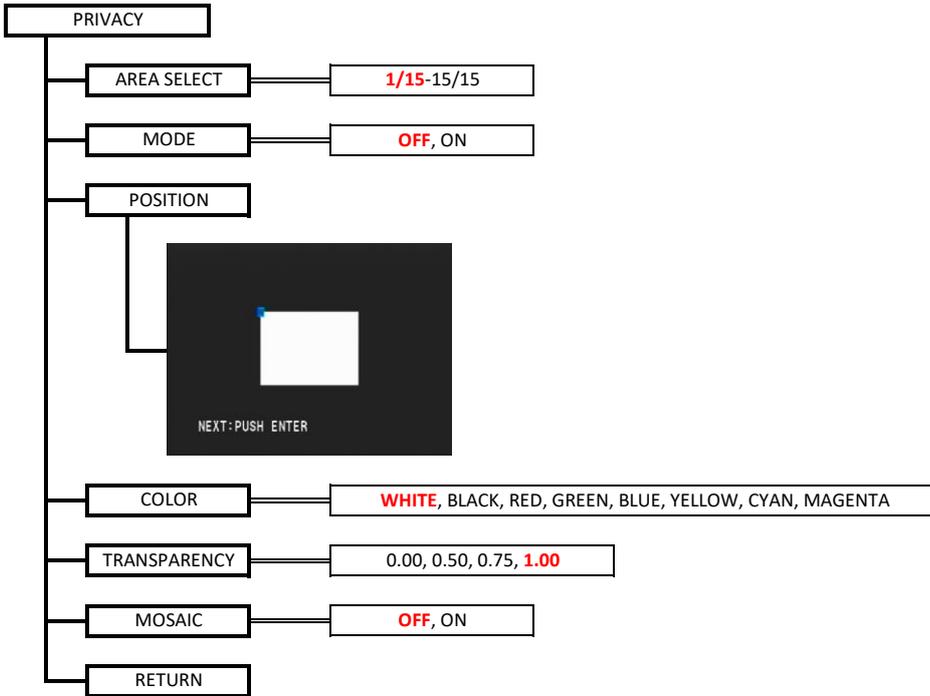
OZOOM(SETUP MENU 2/3)



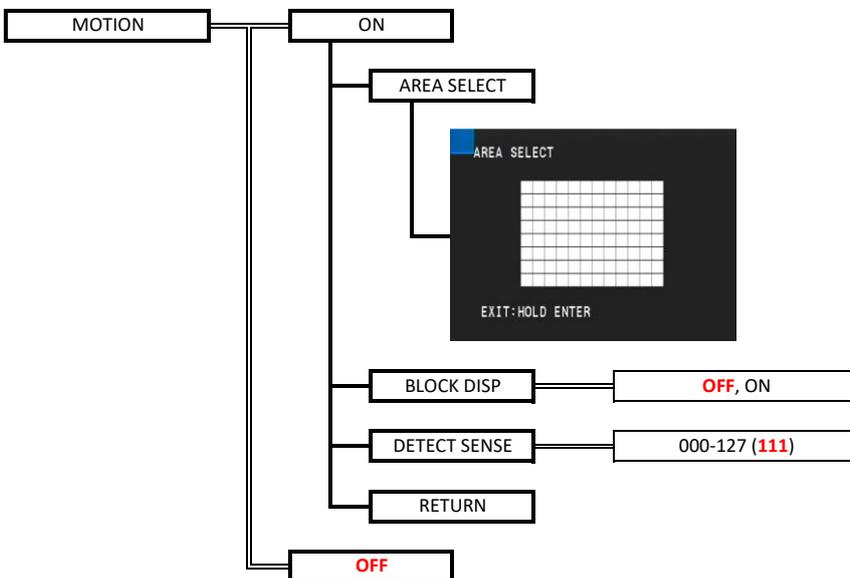
ODEFOG(SETUP MENU 2/3)



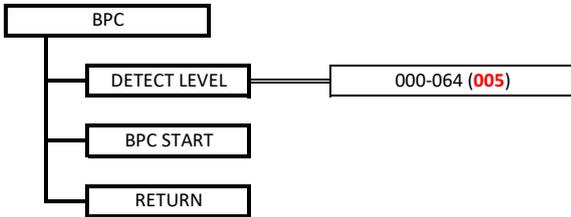
OPRIVACY(SETUP MENU 2/3)



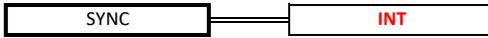
OMOTION(SETUP MENU 2/3)



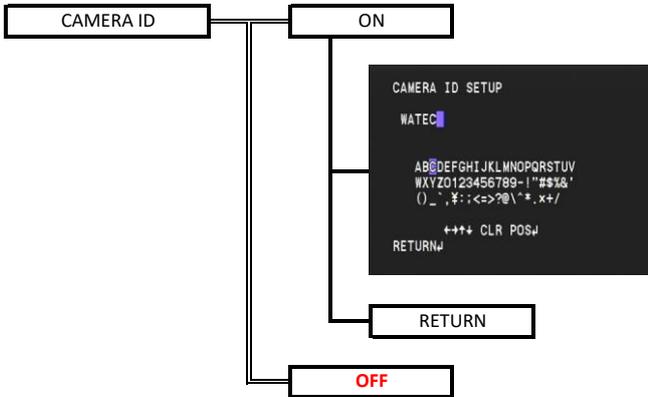
OBPC(SETUP MENU 2/3)



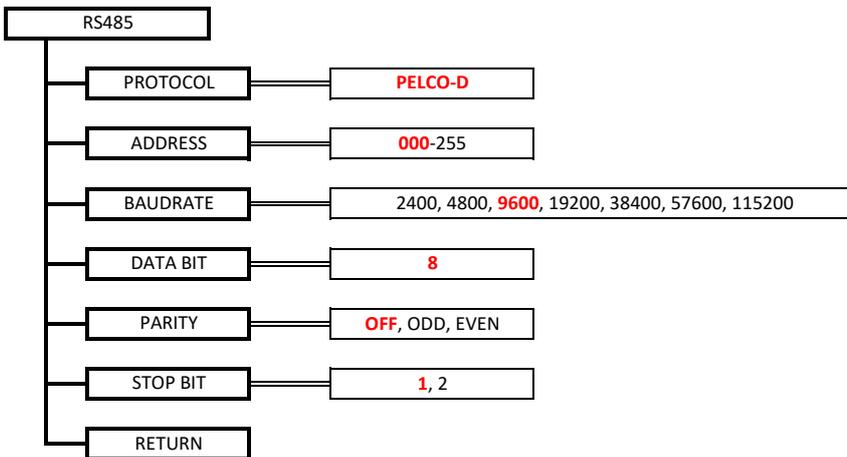
OSYNC(SETUP MENU 3/3)



OCAMERA ID(SETUP MENU 3/3)



ORS485(SETUP MENU 3/3)



OCAMERA RESET(SETUP MENU 3/3)



■ LENS

Name	Default setting
MODE	AUTO
SPEED	55

■ SHUTTER/AGC

Name	Default setting
SHUTTER/AGC	AUTO
SHUT	EI
BRIGHTNESS (HIGH LUMINANCE)	100IRE
MODE	AGC
AGC HI/LO	HIGH
BRIGHTNESS (LOW LUMINANCE)	x1.0

■ ADJUST

Name	Default setting
MIRROR	OFF
CONTRAST	*The factory default value may vary.
SHARPNESS	8
B-HUE	*The factory default value may vary.
R-HUE	*The factory default value may vary.
R-GAIN	*The factory default value may vary.
B-GAIN	*The factory default value may vary.
GAMMA	0.45

■ WB

Name	Default setting
WB	ATW
SPEED	5
DELAY CTL	5

■ WDR/BLC

Name	Default setting
WDR	OFF
HSBLC	OFF
BLC	OFF

■ 3DNR

Name	Default setting
LEVEL	0

■ DAY/NIGHT

Name	Default setting
DAY/NIGHT	DAY

■ ZOOM

Name	Default setting
ZOOM	0
PAN	512
TILT	256

■ DEFOG

Name	Default setting
DEFOG	OFF

■ PRIVACY

Name	Default setting
AREA SELECT	1/15
MODE	OFF
POSITION	Center of the screen
COLOR	WHITE
TRANSPARENCY	1.00
MOSAIC	OFF

■ MOTION

Name	Default setting
MOTION	OFF

■ BPC

Name	Default setting
DETECT LEVEL	5

■ SYNC

Name	Default setting
SYNC	INT

■ CAMERA ID

Name	Default setting
CAMERA ID	OFF

■ RS485

Name	Default setting
PROTOCOL	PELCO-D
ADDRESS	0
BAUDRATE	9600
DATA BIT	8
PARITY	OFF
STOP BIT	1