

# Marshall

## CV350-10XB/10X Operation Manual

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Compact 10X Autofocus Camera (Full-HD)



Please read this guide carefully before installing and using the camera  
Please retain this guide for reference.

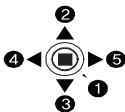
# MENU STRUCTURE

WB CONTROL	AWB	
	ATW	
	PUSH	
	INDOOR	
	OUTDOOR	
	MANUAL	BLUE: 0~31, RED:0~31
AE CONTROL (EXPOSURE)	INDOOR, OUTDOOR	
	Mode	AUTO
		MANUAL
		SHUTTER PRIORITY
		IRIS PRIORITY
		BRIGHT
	BRIGHTNESS	MANUAL, BRIGHT (0~31), 0~20
	IRIS	AUTO, MANUAL, 0~20
	AGC LIMIT	0~20
	SHUTTER	AUTO, MANUAL, 1/1~30K
DSS(SENS-UP)	MANUAL, OFF~1/1	
FLICKERLESS	OFF, ON	
FOCUS CONTROL	FOCUS MODE	AUTO
		MANUAL
		PUSH
	ZOOM SPEED	0~7
	TELE LIMIT	X3~X120
	WIDE LIMIT	X1~X9
	FAR END	INFINITY, 2, 3, 5, 10M
	NEAR END	30CM, 1, 1.5, 2, 3, 5, 10M
	LENS INITIAL	OFF, AUTO, ONE PUSH
USER PRESET		
BACK LIGHT	WDR/BLC	WDR
		BLC
		SPOT
	ACE	GAIN
	ECLIPSE	LEVEL
COLOR		

# MENU STRUCTURE

IMAGE CONTROL	AUTO	D/N LEVEL
		MARGIN
		DWELL TIME
		NIGHT BURST
	DAY	
	NIGHT	NIGHT BURST
	EXT	D/N LEVEL
		DWELL TIME
		NIGHT BURST
	COLOR LEVEL	0~20
	SHARPNESS	0~20
	IMAGE FLIP	
	DEFOG	AUTO, MANUAL
	3D-DNR	OFF, LOW, MIDDLE, HIGH
	MOTION	
SHADING		
GAMMA		
RESOLUTION		
DISPLAY CONTROL	USER TITLE	
	ZOOM MAGNIFICATION	
	PRIVACY	
	ADDRESS	01~255
	ADDRESS DISPLAY	OFF, ON
	BAUDRATE	
	LANGUAGE	
	DEFECT ADJ	
VER.		
RESET		
EXIT		

# Zoom/Focus & OSD Button



## ■ MENU On, One Push AF Key

Menu On: Press and hold menu key for 2 seconds to display menu.

Menu Mode: To select data or exit from menu, press menu key.

One Push AF: To adjust focus position, press and release menu key when One Push AF mode is enabled.

- ▶ Focus NEAR: Press and hold right key for continuous optical focus near.  
MENU: To change menu parameter, press right key while menu is displayed.
- ◀ Focus Far: Press and hold left key for continuous optical focus far.  
MENU: To change menu parameter, press left key while menu is displayed.
- ▲ Zoom TELE: Press and hold up key for continuous optical zoom in (Tele).  
MENU: To move up menu item, press up key while menu is displayed.
- ▼ Zoom WIDE: Press and hold down key for continuous optical zoom out (Wide).  
MENU: To move down menu item, press down key while menu is displayed.

**Press SET button to access the MAIN MENU.**

Use the UP & DOWN buttons to select the desired item.

MAIN MENU	
→ WB CONTROL	ATW
AE CONTROL	INDOOR ↵
FOCUS CONTROL	↵
BACK LIGHT	↵
IMAGE CONTROL	↵
DISPLAY CONTROL	↵
RESET	↵
EXIT	SAVE ↵

Use the LEFT & RIGHT buttons to change the sub-item.

↵ Icon indicates "Press OSD Button" or "Enter Sub Menu".

# WB CONTROL

AWB, ATW, PUSH,  
INDOOR, OUTDOOR, MANUAL

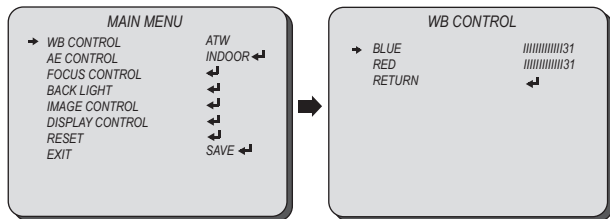
Select WB CONTROL using the UP or DOWN button.

You can change between AWB, ATW, PUSH, INDOOR, OUTDOOR, and MANUAL using the LEFT or RIGHT button.

- **AWB:** Controls the automatic adjustment of the light source's color temperature to 3,000°K ~ 8,000°K.
- **ATW:** Continuously adjusts camera color balance in accordance with any change in color temperature. Compensates for color temperature changes within the range of 1,900°K to 11,000°K.
- **PUSH:** Color temperature will be manually adjusted by pushing the OSD button. Place the white paper in front of the camera when OSD button is pressed to obtain the optimum result.
- **INDOOR:** Select this when the color temperature is between 4,500°K and 8,500°K.
- **OUTDOOR:** Select this when the color temperature is between 1,700°K and 11,000°K (Ex. Sodium light inclusion)
- **MANUAL:** Select this to fine-tune White Balance manually.

You can adjust the blue and red tone level manually.

- **BLUE:** Adjust the blue tone of the image. (0~31)
- **RED:** Adjust the red tone of the image. (0~31)

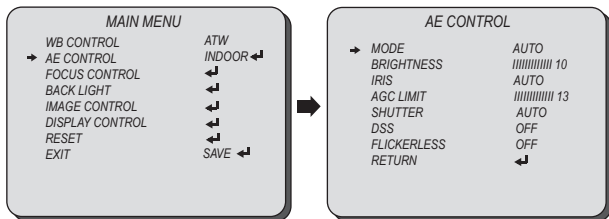


- Set White Balance first by using the ATW or AWB mode. After that switch to MANUAL mode.
- White Balance may not work properly under the following conditions. In this case, select the AWC mode.
  - When the ambient illumination of the subject is dim.
  - If the camera is directed towards a fluorescent light or is installed in place where illumination changes dramatically, the White Balance operation may become unstable.

Select AE CONTROL using the UP or DOWN button.

You can change between INDOOR and OUTDOOR using the LEFT or RIGHT button.

- **INDOOR:** Select this when the camera is installed indoor.  
You can select one sub-mode from AUTO, MANUAL, SHUTTER PRIORITY, IRIS PRIORITY, and BRIGHT. using the LEFT or RIGHT button.
- **OUTDOOR:** Select this when the camera is installed outdoor.  
You can select one sub-mode from AUTO, MANUAL, SHUTTER PRIORITY, IRIS PRIORITY, and BRIGHT. using the LEFT or RIGHT button.



You can change the AE CONTROL mode between AUTO, MANUAL, IRIS PRIORITY, SHUTTER PRIORITY, and BRIGHT using the LEFT or RIGHT button.

- **AUTO:** IRIS and SHUTTER are controlled automatically.
- **MANUAL:** IRIS, GAIN, and SHUTTER are controlled manually.
- **SHUTTER PRIORITY:** Manual SHUTTER and GAIN control with automatic IRIS control.
- **IRIS PRIORITY:** Manual IRIS and GAIN control with automatic SHUTTER control.
- **BRIGHT:** IRIS and GAIN can be controlled by control of BRIGHTNESS.

# AE CONTROL

BRIGHTNESS, IRIS, AGC LIMIT,  
SHUTTER, DSS, FLICKERNESS

You can change the AE CONTROL mode between AUTO, MANUAL, IRIS PRIORITY, SHUTTER PRIOROTY, and BRIGHT using the LEFT or RIGHT button.

Select a menu from BRIGHTNESS, IRIS, AGC GAIN LIMIT, SHUTTER, DSS, and FLICKERLESS using the UP or DOWN button.

## ■ BRIGHTNESS

- **0~31:** Adjust the screen brightness.
- **MANUAL:** BRIGHTNESS control is fixed, and give the AE control priority to others.

## ■ IRIS

- **AUTO:** IRIS controls exposure automatically but SHUTTER is fixed.
- **1~17:** Adjust the screen brightness.
- **MANUAL:** IRIS control is fixed, and give the AE control priority to others.

## ■ AGC LIMIT

- **0~20:** Adjust the gain level.

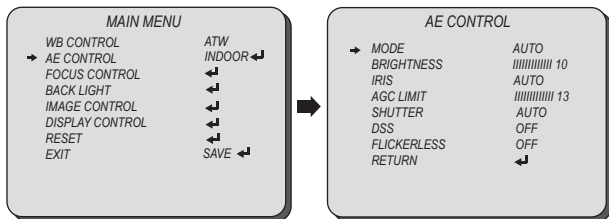
## ■ SHUTTER: Adjust the SHUTTER speed.

- **AUTO:** Shutter controls exposure automatically when iris is set to manual.
- **1/2~30K:** Set the shutter speed from 1/1, 2, 4, 8, 15, 30, 60, 90, 100, 125, 180, 250, 350, 500, 725, 1000, 1500, 2K, 3K, 4K, 6K, 10K, 20K, and 30K.
- **MANUAL:** Shutter is fixed, and give the AE control priority to others.

## ■ DSS (SENS-UP)

- **OFF~1/2:** Set the DSS level from OFF, 1/30, 1/15, 1/8, 1/4, and 1/1.
- **MANUAL:** DSS is fixed, and give the AE control priority to others.

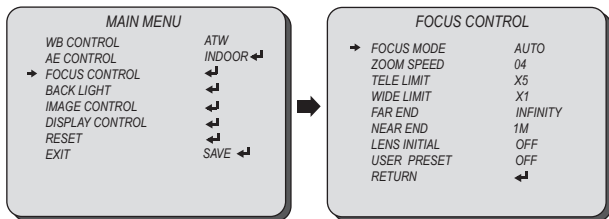
## ■ FLICKERLESS: Use this function when you experience picture flicker, this happens when there is a conflict with the installed lighting frequency.



Select FOCUS CONTROL using the UP or DOWN button.

You can select FOCUS MODE from AUTO, MANUAL and PUSH using the LEFT or RIGHT button.

- **AUTO:** Automatically adjusts the focus position.
- **MANUAL:** Manually adjusts the focus position when zoom is changed.
- **PUSH:** When this mode is enabled, it will automatically adjusts the focus position only when the zoom is changed.



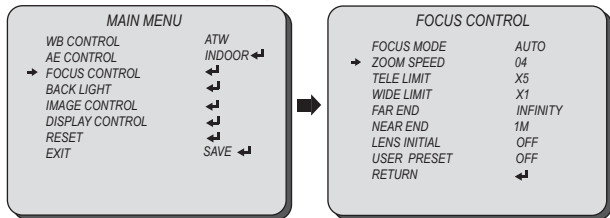


# FOCUS CONTROL

Select FOCUS CONTROL using the UP or DOWN button.

You can select ZOOM SPEED, TELE LIMIT, WIDE LIMIT, FAR END, NEAR END, LENS INITIAL and USER PRESET using the LEFT or RIGHT button.

- **ZOOM SPEED:** Set the zoom speed from 00~07.  
*00 is the slowest zoom speed set value. 07 is the fastest zoom speed set value.*
- **TELE LIMIT:** Set the limit of the tele control from X3, X4, X5, X6, X7, X8, X9, X10, X20, X30, X40, X50, X60, X70, X80, X90, X100, X110, and X120.
- **WIDE LIMIT:** Set the limit of the zoom control from X1, X2, X3, X4, X5, X6, X7, X8, and X9.
- **FAR END:** Set the limit for the far focusing from INFINITY, 2, 3, 5, and 10M.  
The lens moves to adjust the focus from the distance.
- **NEAR END:** Set the priority distance limit for near focusing from 30CM, 1, 1.5, 2, 3, 5, and 10M.
- **LENS INITIAL:** This function repeats adjustment of the focus level at the interval.
  - **ONE PUSH:** The focus setting is initialized when ONE PUSH is selected.
  - **AUTO:** The focus is initialized as DAY setting.
    - **DAY:** Select the interval DAY/DAYS from 01~07 using the LEFT or RIGHT button.
- **USER PRESET:** This function is used to set user defined zoom and focus position.  
Up to 32 preset position can be set.
  - **USER PRESET:** Select the preset ID from 00~31 using the LEFT or RIGHT button.
  - **ACTIVE:** Activate the focus preset setting of the USER PRESET.
  - **SAVE:** Save the preset setting.
  - **RESET:** Reset the preset setting.

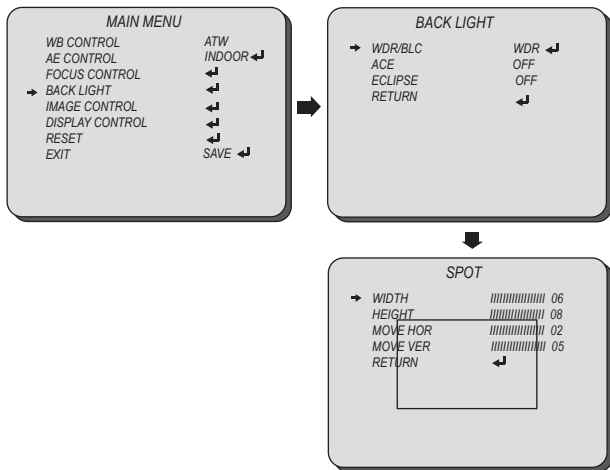


Select BACK LIGHT using the UP or DOWN button.

You can select WDR/BLC, ACE, and ECLIPSE using the LEFT or RIGHT button.

## ■ WDR/BLC

- **WDR:** Enable user to view both object and background more clearly when background is too bright.
  - **WDR-LEVEL:** Select the WDR level from 01~04 using the LEFT or RIGHT button.
- **BLC:** Enable a back light compensation feature.
- **SPOT:** Enables a user to select a desired area on a picture and view that area more clearly when background is too bright.
  - **WIDTH:** Change the width of SPOT area using the LEFT or RIGHT button.
  - **HEIGHT:** Change the height of SPOT area using the UP or DOWN button.
  - **MOVE HOR:** Move the SPOT area horizontally using the LEFT or RIGHT button.
  - **MOVE VER:** Move the SPOT area vertically using the UP or DOWN button.



Select BACK LIGHT using the UP or DOWN button.

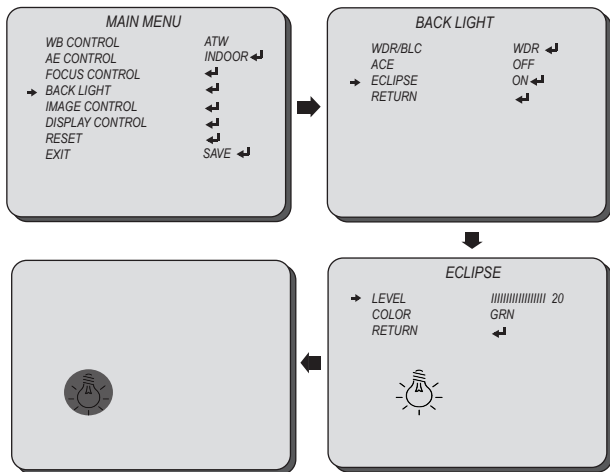
You can select WDR/BLC, ACE, and ECLIPSE using the LEFT or RIGHT button.

■ **ACE (D-WDR):** Brightness correction of the dark image area.

- **GAIN:** Select the GAIN level from LOW, MIDDLE, and HIGH using the LEFT or RIGHT button.

■ **ECLIPSE:** Highlight the bright area with a masking box with a selected color.

- **LEVEL:** Select the masking level from 0~20 using the LEFT or RIGHT button.
- **COLOR:** Select the color of masking from GRN, MAG, RED, BLUE, BLK, WHT, YEL, and CYN using the LEFT or RIGHT button.



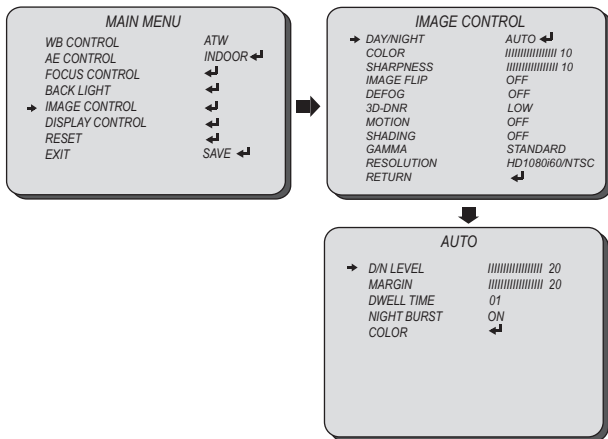
Select IMAGE CONTROL using the UP or DOWN button.

You can select DAY/NIGHT using the UP or DOWN button.

### ■ DAY/NIGHT

Select the DAY/NIGHT mode of the camera from AUTO, DAY, NIGHT, and EXT using the LEFT or RIGHT button.

- **AUTO:** The camera will stay in DAY in a normal environment, but switched to NIGHT mode when ambient illumination become this pre-set level.
- **D/N LEVEL:** This level is threshold for switching day to night. It is same as the exposure gain level.
- **MARGIN:** Set the margin between Day →Night switching level and Night →Day switching level. Different exposure gain level is needed to avoid malfunctions.
- **DWELL TIME:** Select the checking time of light condition to confirm to change from the day mode to the night mode.
- **NIGHT BURST:** Night burst OFF makes that the color burst is removed when ICR switches to black/white.

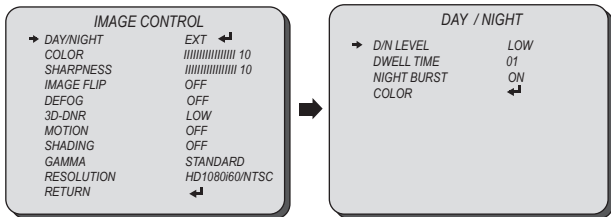


Select **IMAGE CONTROL** using the **UP** or **DOWN** button.  
 You can select **DAY/NIGHT** using the **UP** or **DOWN** button.

## ■ DAY/NIGHT

Select the **DAY/NIGHT** mode of the camera from **AUTO**, **DAY**, **NIGHT**, and **EXT** using the **LEFT** or **RIGHT** button.

- **DAY:** The picture is always displayed in color.
- **NIGHT:** The picture is always displayed in black/white.
  - **NIGHT BURST:** Night burst OFF makes that the color burst is removed when ICR switches to black/white
- **EXT:** Control the image modes of color and B/W when an external controller is synchronized via the EXT D/N port.
  - **D/N LEVEL:** This level is threshold for switching day to night. It is same as the exposure gain level.
  - **DWELL TIME:** Select the checking time of light condition to confirm to change from the day mode to the night mode.
  - **NIGHT BURST:** Night burst OFF makes that the color burst is removed when ICR switches to black/white.



Select **IMAGE CONTROL** using the **UP** or **DOWN** button.

You can select **COLOR LEVEL**, **SHARPNESS**, **IMAGE FLIP**, and **DEFOG** using the **UP** or **DOWN** button.

- **COLOR LEVEL:** Adjust the color level value for a fine color tune.

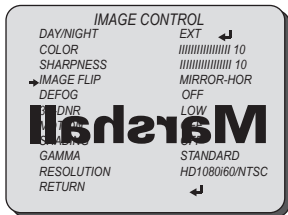
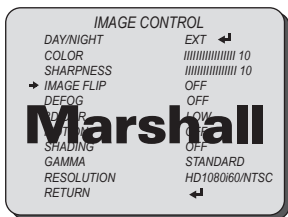
Adjust the color level from 00~20 using the **LEFT** or **RIGHT** button.

- **SHARPNESS:** Increasing this value, the picture outline becomes stronger and clearer.

Adjust the sharpness level from 00~20 using the **LEFT** or **RIGHT** button.

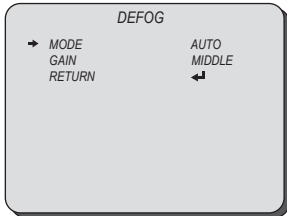
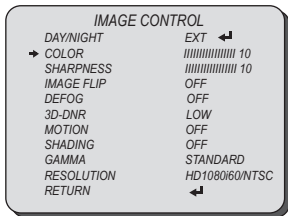
- **IMAGE FLIP:** Video output will be flipped.

Select the image flip mode from **MIRROR-HORIZONTALLY**, **FLIP-VERTICALLY**, or **ROTATION** using the **LEFT** or **RIGHT** button.



- **DEFOG:** This feature will help increase visibility in extreme weather conditions, such as fog, rain or in a very strong luminous intensity.

Select the **DEFOG** mode from **AUTO** or **MANUAL** using the **LEFT** or **RIGHT** button.



Select **IMAGE CONTROL** using the UP or DOWN button.

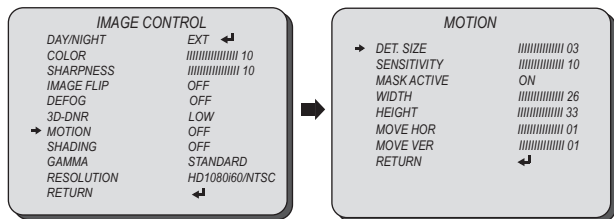
You can select **3D-DNR**, **MOTION**, **SHADING**, and **GAMMA** using the UP or DOWN button.

- **3D-DNR:** This feature will reduce the video noise caused by movement at low ambient light.

Select the **3D-DNR** level from **OFF**, **LOW**, **MIDDLE**, and **HIGH** using the **LEFT** or **RIGHT** button.

- **MOTION:** This feature will observe the object movement by motion zone and sensitivity that are pre-set with sub menu. The motion detection signal can be relayed out with MD OUT port.

- **DET. SIZE:** Select the size of the object that is motion detected from 00 ~ 04.
- **SENSITIVITY:** Select the motion detection size from 00 ~ 20.
- **MASK ACTIVE:** Enable/disable the motion detection mask display.
- **WIDTH:** Change the width of motion detection mask using the **LEFT** or **RIGHT** button.
- **HEIGHT:** Change the height of motion detection mask using the **UP** or **DOWN** button.
- **MOVE HOR:** Move the motion detection mask area horizontally using the **LEFT** or **RIGHT** button.
- **MOVE VER:** Move the motion detection mask area vertically using the **UP** or **DOWN** button.



- **SHADING:** This feature will correct the inconsistent brightness level in the image.

- **GAMMA:** This feature will adjust video output brightness.

Select the **GAMMA** level from **STANDARD**, **STRAIGHT**, **LOW**, **MIDDLE**, and **HIGH** using the **LEFT** or **RIGHT** button.

Select **IMAGE CONTROL** using the **UP** or **DOWN** button.  
You can select **RESOLUTION** using the **UP** or **DOWN** button.

### ■ **RESOLUTION:** Change video output specification.

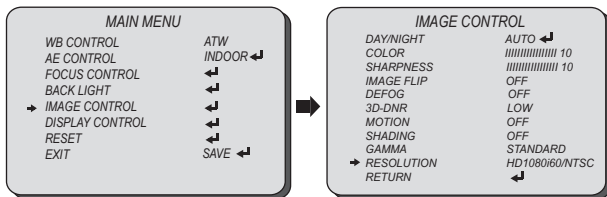
Select the **RESOLUTION** using the **LEFT** or **RIGHT** button.

#### ■ **CV350-10X Model**

Select the **RESOLUTION** from 1080P25/30, 1080i50/60, 720P50/60, and 1080P50/60 using the **LEFT** or **RIGHT** button.

#### ■ **CV350-10XB Model**

Select the **RESOLUTION** from 1080P29.97, 1080i59.94, 1080P59.94, 720P59.94 using the **LEFT** or **RIGHT** button.

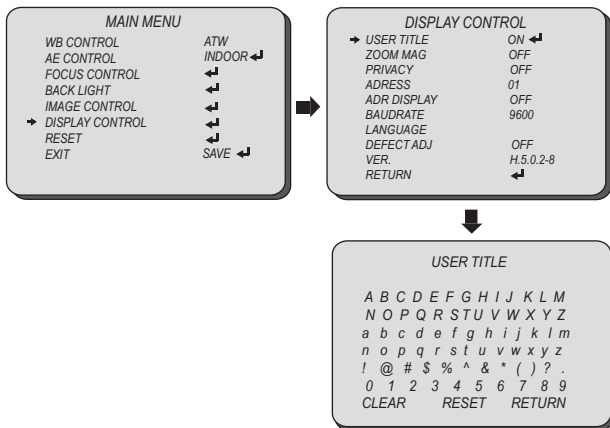




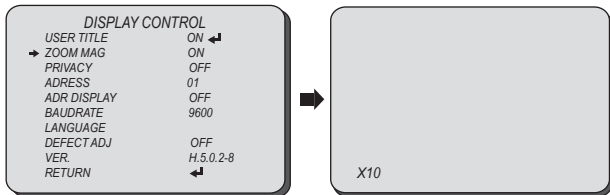
Select **DISPLAY CONTROL** using the UP or DOWN button.

You can select **USER TITLE, ZOOM MAGNIFICATION, PRIVACY, ADDRESS, ADDRESSS DISPLAY, BAUDRATE, LANGUAGE, DEFECT ADJ, and VER.** using the UP or DOWN button.

- USER TITLE:** The camera title can be entered and it will appear over the video output. You can input the camera title from the virtual keyboard using the LEFT, RIGHT, UP, DOWN, and SET button.



- ZOOM MAGNIFICATION:** Turn On or off of the zoom scale display from X01~X10.

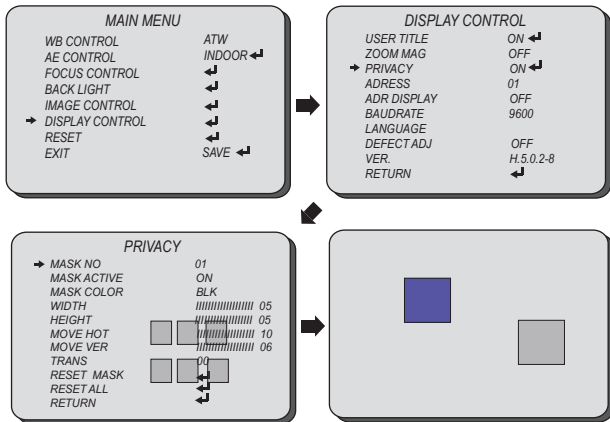


Select DISPLAY CONTROL using the UP or DOWN button.

You can select PRIVACY using the UP or DOWN button.

■ **PRIVACY:** Mask an area you want to hide on the screen.

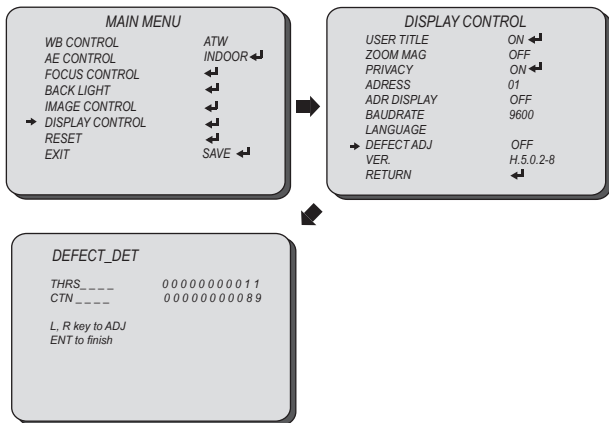
- **MASK NO:** Select the mask number to modify using the LEFT or RIGHT button.
- **MASK ACTIVE:** Enable/Disable the mask display using the LEFT or RIGHT button.
- **MASK COLOR:** Select the mask color using the LEFT or RIGHT button.
- **WIDTH:** Change the width of SPOT area using the LEFT or RIGHT button.
- **HEIGHT:** Change the height of SPOT area using the UP or DOWN button.
- **MOVE HOR:** Move the SPOT area horizontally using the LEFT or RIGHT button.
- **MOVE VER:** Move the SPOT area vertically using the UP or DOWN button.
- **TRANS:** Select the mask transparency using the LEFT or RIGHT button.
- **RESET MASK:** Reset the setting values of the selected MASK NO.
- **RESET ALL:** Reset the setting values of the all MASK.



Select **DISPLAY CONTROL** using the **UP** or **DOWN** button.

You can select **ADDRESS**, **ADD DISPLAY**, **BAUDRATE**, **LANGUAGE**, **DEFECT ADJ**, and **VER.** using the **UP** or **DOWN** button.

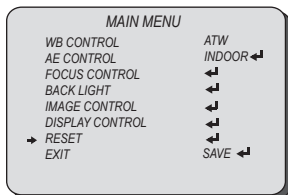
- **ADDRESS:** Select the camera ID number from 01~255.
- **ADD DISPLAY:** Enable/Disable the display of the camera address ID.
- **BAUDRATE:** Set the baudrate of RS-485 communication (2400, 4800, 9600, 19200, 38400, 57600, 115200).
- **LANGUAGE:** You can select the menu language according to your requirements.  
Select the OSD language from **ENGLISH**, 简体, **FRANÇAIS**, **DEUTSCH**, **ESPAÑOL**, **PORTUGUÊS**, and **РУССКИЙ** using the **LEFT** or **RIGHT** button.
- **DEFECT ADJ.:** Defective pixels can be corrected.



- **VER.:** Display the firmware version of the camera.

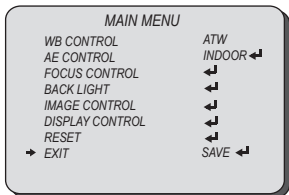
Select **RESET** using the **UP** or **DOWN** button.

- **RESET:** Reset the camera settings to the factory defaults.



Select EXIT using the UP or DOWN button.

- **SAVE:** Exit the setup after saving the setting value changes.



# TROUBLESHOOTING

Before sending the camera for repair, please check below to make sure that the camera is installed correctly. If it still does not perform adequately, please consult with your supplier.

Problem	Solutions
Nothing appears on the screen.	<ol style="list-style-type: none"><li>Check that all connected devices are powered on.</li><li>Confirm that the voltage is correct.</li><li>Confirm that the power supply provides enough current to power the camera.</li><li>Check that all video cables are correctly connected.</li></ol>
The picture is not clear.	<ol style="list-style-type: none"><li>Check that your monitor is correctly adjusted.</li><li>Confirm that the glass in front of the lens is clean. If there is dust, dirt or fingerprints on the glass, the image quality will be affected. To clean the glass use a soft, dry and non-abrasive cloth or a commercially available lens cleaning set.</li><li>Correctly adjust the focus.</li></ol>
The picture has interference.	<ol style="list-style-type: none"><li>The camera may be close to a high voltage source, such as a power generator.</li><li>The BNC cable is not terminated properly.</li><li>The video cables are not connected properly.</li></ol>
The picture is flickering continually.	<ol style="list-style-type: none"><li>Check the termination and set the impedance at <math>75\Omega</math> properly.</li><li>Ensure that the camera is not pointing towards the Sun or any light source.</li><li>Check if there is any intermediate device.</li><li>Check if the distance of the video cable exceeds the maximum transferable limitation.</li></ol>



# **Marshall Electronics**

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