

Marshall

Broadcast A/V Division

CV420-CS

True 4K 60 Compact Camera



User Manual

Table of Contents

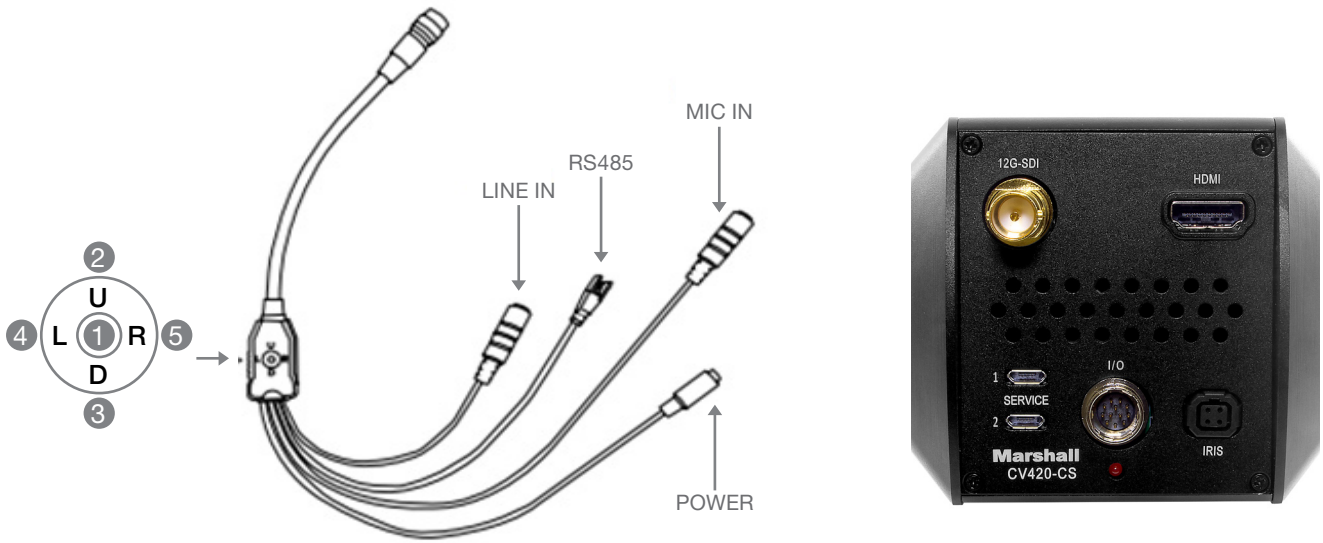
- 1. Menu Structure 02
- 2. OSD Joystick and Button 04
- 3. WB CONTROL 05
- 4. AE CONTROL 06
- 5. DAY / NIGHT 07
- 6. AUDIO 08
- 7. IMAGE CONTROL 09
- 8. SPECIAL 10
- 9. SETUP 11
- 10. RESET 12
- 11. EXIT 13
- 12. TROUBLESHOOTING 14
- Warranty 15

1. Menu Structure

Setup	Sub Menu	Sub Menu
WB CONTROL	ATW	
	ONE PUSH	
	INDOOR	
	OUTDOOR	
	MANUAL	BLUE
AE CONTROL	AUTO	RED
		AGC MAX
		SENS UP
		AE BRIGHT
		FLK CONTROL
		LENS MODE
	SHUT FIX	SHUTTER
		AGC MAX
		SENS UP
		AE BRIGHT
	AGC FIX	AGC
		AE BRIGHT
		FLK CONTROL
		LENS MODE
		SHUTTER
	MANUAL	AGC
		SENS UP
DAY/NIGHT	DAY	
	NIGHT	NIGHT COLOR
	AUTO	

Setup	Sub Menu	Sub Menu
AUDIO	MIC/LINE	AUDIO LEVEL
		MIC ATTENUATOR
		SAMPLE BITS
IMAGE CONTROL	CONTRAST	
	BRIGHTNESS	
	SATURATION	
	HUE	
	EDGE ENHANCE	
	AUTO SATURATE	
	AUTO EDGE	
	BLACK WHITE LV	BLACK LEVEL
		WHITE LEVEL
	GAMMA CORRECT	
	DNR	DNR MODE
	DNR LEVEL	
SPECIAL	DZOOM	
	DEFOG	
	BINNING	
	DEFECT PIXEL	
	DISP. FUNCTION	
	HDR	
	FLICKER DETECT	
	PRIVACY	
SETUP	CAM TITLE	
	COMMUNICATION	CAM ID
		ID DISPLAY
		BAUD RATE
	MODEL	
	S/W Ver	
OUTPUT FORMAT		
RESET	USER/FACTORY	
EXIT		

2. OSD Joystick and Button



I/O Cable (included in box)

- 1. SET Used to access the menu and confirm selection.
- 2. UP Used to move the cursor up.
- 3. DOWN Used to move the cursor down.
- 4. LEFT Used to move the cursor left and change the value
- 5. RIGHT Used to move the cursor to the right and change the value.

Press SET button to access the **Main Menu**

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

MENU

WB CONTROL >

AE CONTROL >

DAY/NIGHT >

AUDIO >

IMAGE CONTROL >

SPECIAL >

SETUP >

RESET >

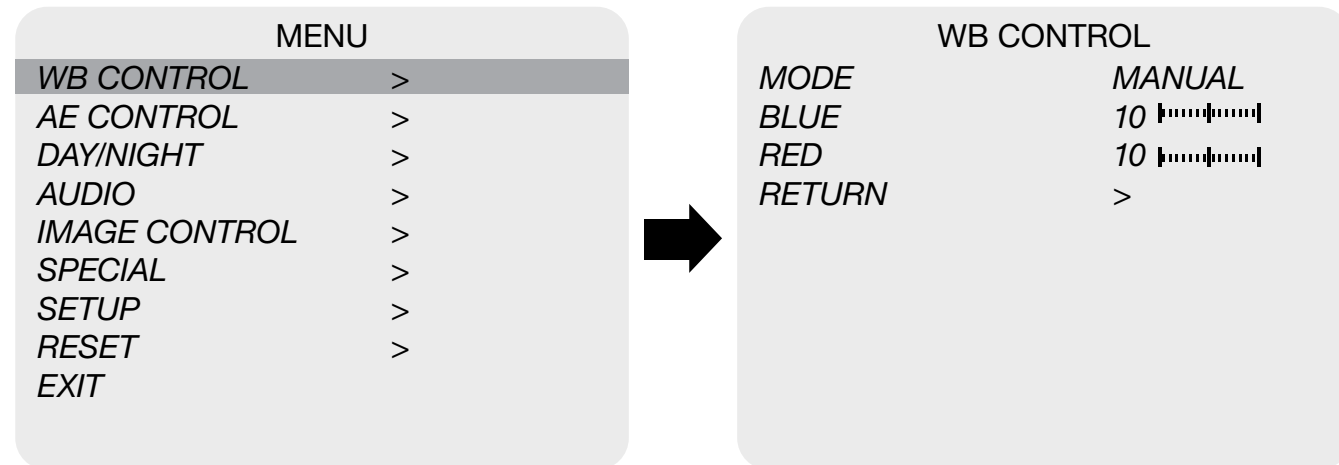
EXIT >

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

> Icon indicates "Press OSD button" or "Enter Sub Menu"

3. WB CONTROL

Select WB CONTROL using the UP or DOWN button. You can change between AWB, ATW, PUSH, and MANUAL using the LEFT or RIGHT buttons.



- **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
- **ONE 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
- **MANUAL:** Select this to fine-tune White Balance manually

You can adjust the blue and red tone level manually.

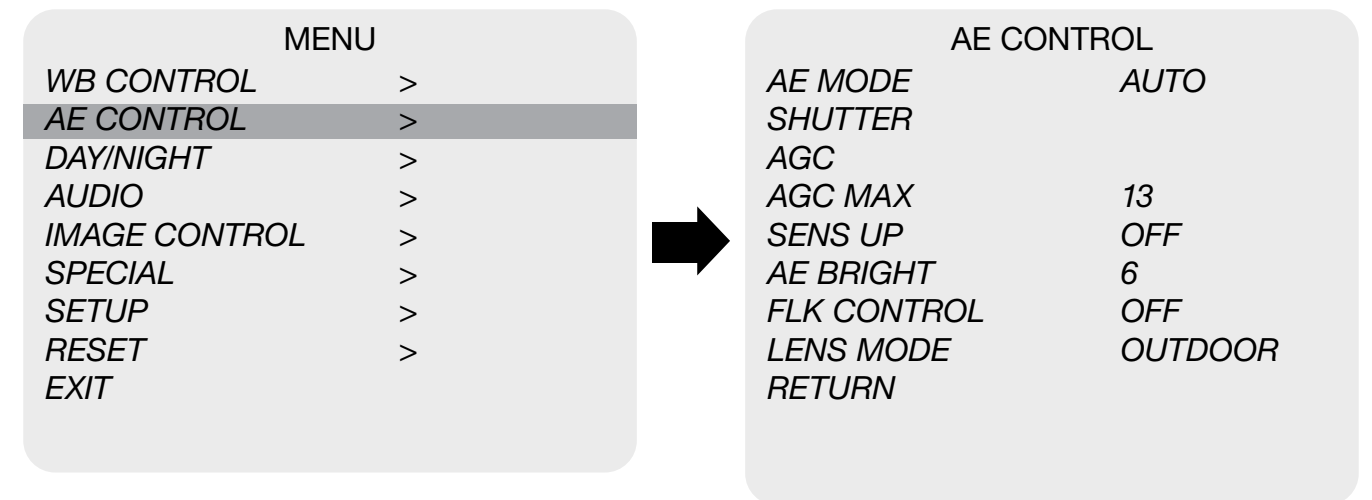
1. **BLUE:** Adjust the Blue tone of the image. (0~255)
2. **RED:** Adjust the Red tone of the image. (0~255)

- **INDOOR:** Select this to adjust white balance to indoor lighting condition
- **OUTDOOR:** Select this to adjust white balance to outdoor lighting condition

1. Adjust White Balance first by using the ATW mode before switching to MANUAL mode.
2. White Balance may not work properly under the following conditions. In this case, select the ATW 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.

4. AE CONTROL

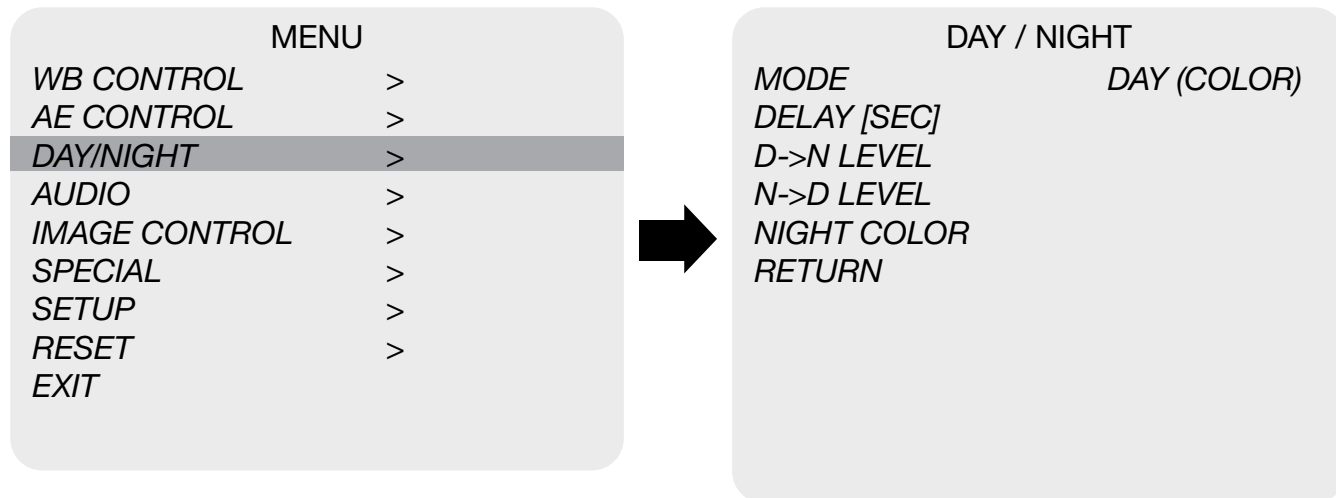
Select AE CONTROL using the UP or DOWN button. You can select one sub-mode using the UP or DOWN buttons.



- **AUTO:** Adjusts the exposure level automatically. Detailed fine tuning options are available under this menu.
- **SHUT FIX:** Provides more detailed shutter speed options. All other controls are tuned for the selected shutter speed.
- **AGC FIX:** Provides more detailed gain option. All other controls are tuned for the selected gain value.
- **MANUAL:** Adjusts all values manually.
 - **SHUTTER:** Speed can be set at auto or manual. (NTSC:1/60~1/10,000, PAL: 1/50~1/10,000)
 - **AGC:** Adjust gain value from 0 ~ 27dB
 - **AGC MAX:** Used to set maximum gain value to control the video noise caused by Auto Gain Control. (0~15)
 - **SENS UP:** Controls the digital slow shutter to allow extra light into the camera and adjust the picture quality. (Off, x2~x15)
 - **AE BRIGHT:** Select this to adjust auto exposure brightness levels. (0~24)
 - **FLK CONTROL:** Provides a proper image sensor frequency to match the power frequency in order to minimize video flicker
 - **LENS MODE:** Lens setting will be optimized for selected environment, for DC Iris lens only

5. DAY / NIGHT

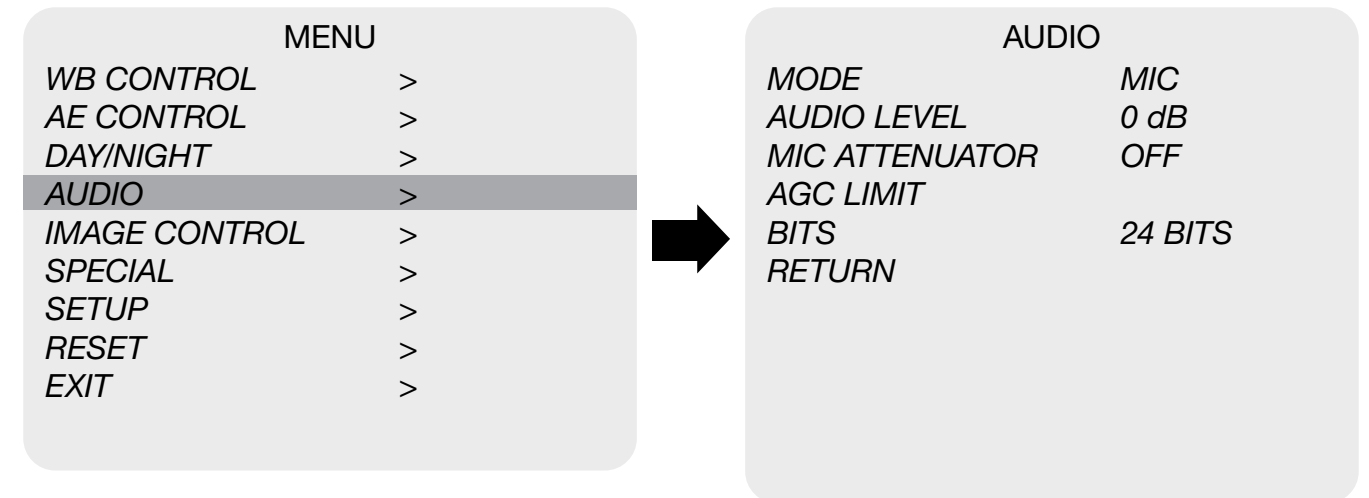
Select DAY / NIGHT using the UP or DOWN button. You can select one sub-mode from AUTO, COLOR, and NIGHT using the UP or DOWN buttons.



- **MODE:** Set camera to either color mode or B&W mode. (Auto, Day, Night)
- **DAY:** Set camera to Day mode (Color)
- **NIGHT:** Set Camera to Night mode (B&W)
- **NIGHT COLOR:** When on, camera stays on color mode. Night (B&W) can be selected from this mode. (On, Off)
- **Auto:** When set to AUTO mode, camera changes DAY and NIGHT mode automatically
- **DELAY [SEC]:** Adjusts time delay between Day to Night or Night to Day change
- **D->N LEVEL:** Adjusts sensitivity level of when camera changes from Day to Night
- **N->D LEVEL:** Adjusts sensitivity level of when camera changes from Night to Day

6. AUDIO

Select AUDIO using the UP or DOWN button and enter ON using SEL button. You can select one sub-mode using the UP or DOWN buttons.

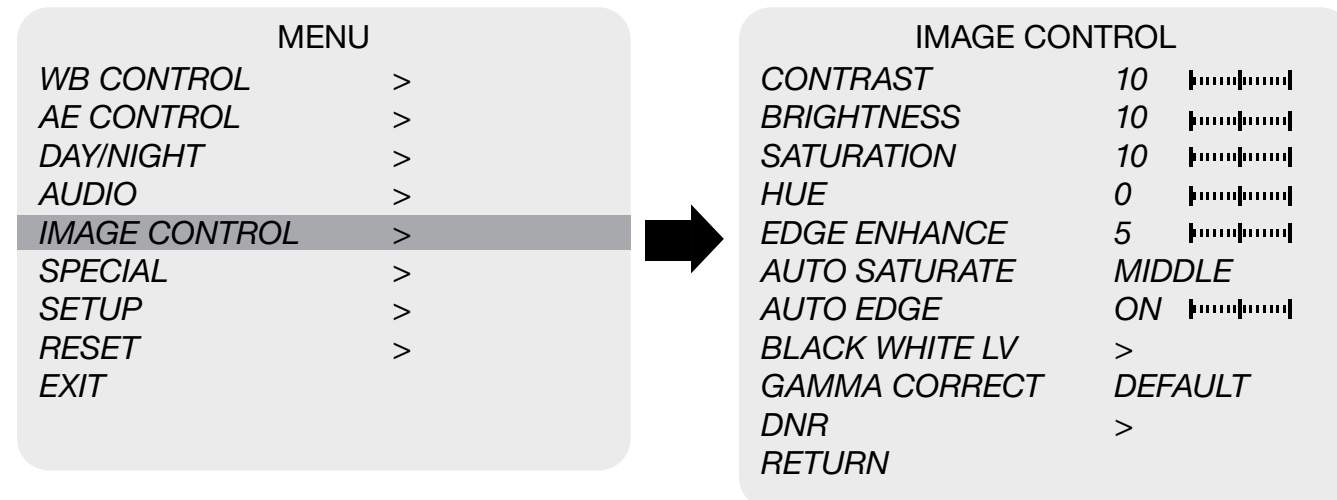


- **MODE:** Select MIC or LINE for audio input source
- **AUDIO LEVEL:** Select this to adjust audio levels manually
- **MIC ATTENUATOR:** Audio attenuation can be controlled from this menu to minimize the audio noise level
 - **AGC LIMIT:** Audio gain limit can be controlled while MIC ATTENUATOR is in used.
- **SAMPLE BITS:** Select the bit depth of audio

7. IMAGE CONTROL

Select IMAGE CONTROL using the UP or DOWN button.

You can select CONTRAST, HUE, and image related menu using the UP or DOWN buttons.



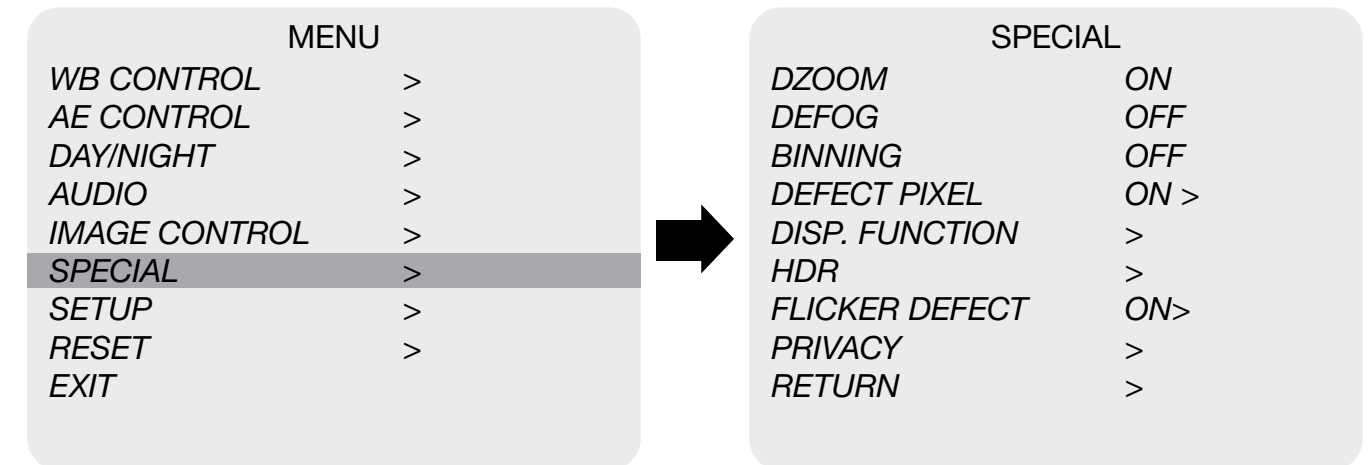
- **CONTRAST:** Adjust the image contrast level value
- **BRIGHTNESS:** Adjust the image brightness level value
- **SATURATION:** Adjust the image saturation level value
- **HUE:** Adjust the image hue level value
- **EDGE ENHANCE:** Adjust the image sharpness level
- **AUTO SATURATE:** Decrease saturation automatically when noise scene is detected
- **AUTO EDGE:** Enable or disable auto sharpness control
- **BLACK WHITE LV:** Adjust the image black & white level value
- **GAMMA CORRECT:** Adjust the image output gamma level
- **DNR:** Reduces the video noise at low ambient light

Select the DNR level from Auto, LOW, MIDDLE, and HIGH using the LEFT or RIGHT button.

8. SPECIAL

Select SPECIAL using the UP or DOWN button.

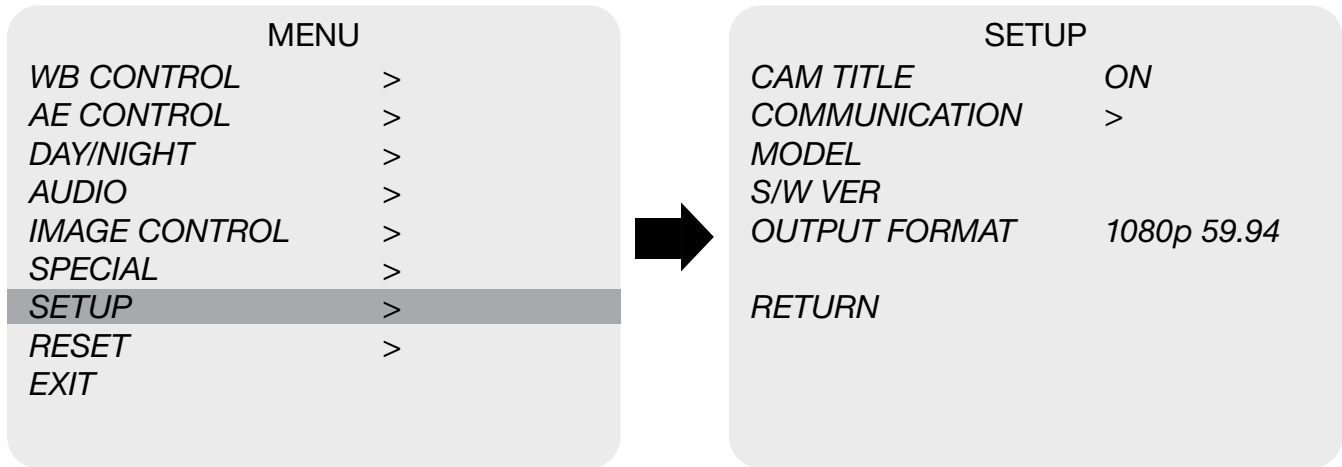
You can select BINNING, FREEZE, and HDR using the UP or DOWN buttons.



- **DZOOM:** Digitally zoom the video by the desired ratio
- **DEFOG:** This feature will help increase visibility in extreme weather conditions, such as fog, rain or in a very strong luminous intensity
- **BINNING:** Enable or disable pixel binning
- **DEFECT PIXEL:** Advanced defective pixel correction menu. Power cycle the camera after running DPC
- **DISP. FUNCTION:** Display effect such as freeze mirror, rotation, and style can be applied from this menu
- **HDR:** Enable HDR mode (SDR, PQ, HLG)
 1. **SDR:** Apply Standard Dynamic Range
 2. **PQ:** Apply Perceptual Quantizer
 3. **HLG:** Apply Hybrid Log Gamma
- **FLICKER DETECT:** Adjust the image sensor frequency to match the power frequency
- **PRIVACY:** Mask an area you want to hide on the screen by applying the privacy zones

9. SETUP

CAMERA setup can be adjusted from this menu. You can select CAMERA ID, Communication, System Info, and Output Format using the UP or DOWN buttons.

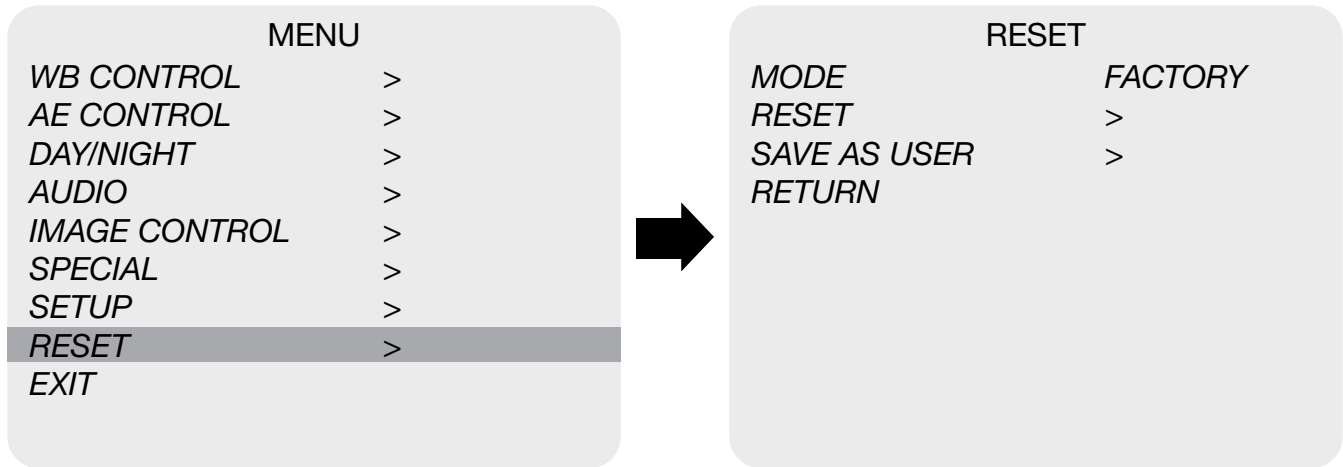


- **CAM TITLE:** Camera title can be turned ON or OFF
- **COMMUNICATION:** VISCA communication can be adjusted
- **CAM ID:** Camera ID can be setup. (0~254)
- **ID DISPLAY:** Camera ID display can be displayed
- **BAUDRATE:** Camera baud rate can be set. (2400, 4800, 9600, 19200, 38400, 115200)
- **MODEL:** Display product model number
- **S/W VER:** Display software version number
- **OUTPUT FORMAT:** Camera resolution and frame rate can be set

(1080 by default)
 Select the FRAME RATE using the LEFT or RIGHT buttons.
 Available Frame Rates are:
 4096 x 2160p 60, 59.94, 50, 30, 29.97, 25, 24, 23.98
 3840 x 2160p 60, 59.94, 50, 30, 29.97, 25, 24, 23.98
 1920 x 1080p 60, 59.94, 50, 30, 29.97, 25, 24, 23.98
 1920 x 1080i 60, 59.94, 50
 1280 x 720p 60, 59.94, 50

10. RESET

Select RESET using the UP or DOWN button.

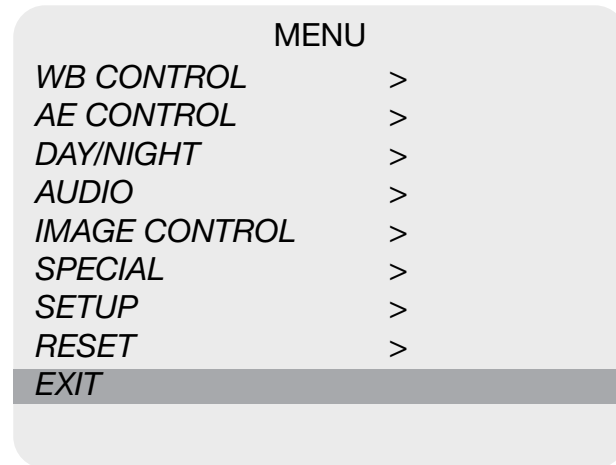


- **RESET:** Reset the camera settings to the factory defaults or user setting value. RESET
- **MODE:** Set the camera setting to either “FACTORY” or “USER”.
 1. **USER:** Select “USER” if user saved setting value is needed.
 2. **FACTORY:** Select “FACTORY” if factory default setting is needed.
- **RESET:** Reset the camera to the mode set on RESET MODE.
- **SAVE AS USER:** Save the current camera settings as “USER”.

To RESET Camera to default settings (1920x1080p30fps) power-cycle the camera then use the following combo on OSD Joystick: UP, DOWN, UP, DOWN, then push and HOLD joystick in for 5 seconds then release.

11. EXIT

Select EXIT using the UP or DOWN button.



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

12. TROUBLESHOOTING

Problem	Solutions
Nothing appears on the screen.	<ul style="list-style-type: none"> a. Check that all connected devices are powered on. b. Confirm that the voltage is correct. c. Confirm that the power supply provides enough current to power the camera. d. Check that all video cables are correctly connected.
The picture is not clear.	<ul style="list-style-type: none"> a. Check that your monitor is correctly adjusted. b. 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. c. Correctly adjust the focus.
The picture has interference.	<ul style="list-style-type: none"> a. The camera may be close to a high voltage source, such as a power generator. b. The BNC cable is not terminated properly. c. The video cables are not connected properly.
The picture is flickering continually.	<ul style="list-style-type: none"> a. Check the termination and set the impedance at 75Ω properly. b. Ensure that the camera is not pointing towards the Sun or any light source. c. Check if there is any intermediate device. d. Check if the distance of the video cable exceeds the maximum transferable limitation.
The camera is not synchronizing with the reference signal.	<ul style="list-style-type: none"> a. Make sure Tri-Level reference signal is used. b. Locking takes up to 1 minute depending on the signal strength. Make sure the sync LED is solidly lit. c. Check if the cable and connectors used in reference sync are in good condition. d. Make sure the cable length used in reference sync does not exceed 100 ft. e. Make sure OUTPUT EN is on when using the genlock output.

Warranty

Marshall Electronics warrants to the first consumer that this device will, under normal use, be free from defects in workmanship and materials, when received in its original container, for a period of two years from the purchase date. This warranty is extended to the first consumer only, and proof of purchase is necessary to honor the warranty. If there is no proof of purchase provided with a warranty claim, Marshall Electronics reserves the right not to honor the warranty set forth above. Therefore, labor and parts may be charged to the consumer. This warranty does not apply to the product exterior or cosmetics. Misuse, abnormal handling, alterations or modifications in design or construction void this warranty. No sales personnel of the seller or any other person is authorized to make any warranties other than those described above, or to extend the duration of any warranties on behalf of Marshall Electronics, beyond the time period described above.

Due to constant effort to improve products and product features, specifications may change without notice.

Marshall

20608 Madrona Avenue, Torrance, CA 90503

Tel: (800) 800-6608 / (310) 333-0606 • Fax: 310-333-0688

www.marshall-usa.com

support@marshall-usa.com