



CV566, CV568, CV366, CV368

Compact & Miniature HD Genlock Cameras

User Manual

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1. General Information

Thank you for your purchase of a Marshall Miniature or Compact Genlock Camera.

The Marshall Camera team recommends thoroughly reading this guide for a deep understanding of on-screen-display (OSD) menus, breakout cable operation, settings adjustment explanation, troubleshooting, and other critical information.

Please carefully remove all contents of box, which should include the following components:

CV566/568 includes:

- CV566 camera with 3.6mm lens(interchangeable), CV568 camera with 4.4mm lens(interchangeable)
- Camera Breakout Cable (Power/RS485/Audio)
- 12V Power Supply

CV366/368 includes:

- Camera with CS/C mount (lens sold separately)
- C-Mount Lens Adaptor (only used when using C-mount lens)
- Camera Breakout Cable (Power/RS485/Audio)
- 12V Power Supply

The CV566 ships with a 3.6mm lens installed and is interchangeable to any number of Marshall M12 lenses.

The CV568 ships with a 4.4mm lens installed and is interchangeable to 1/1.8" M12 lenses.

Each camera comes set to default at 1920x1080i @ 59.94fps out of the box; which can be changed in the OSD Menu to a variety of resolutions and framerates.

If the camera is accidentally changed to a resolution or framerate that your monitor or equipment doesn't accept, please follow the instructions below to reset camera to factory default:

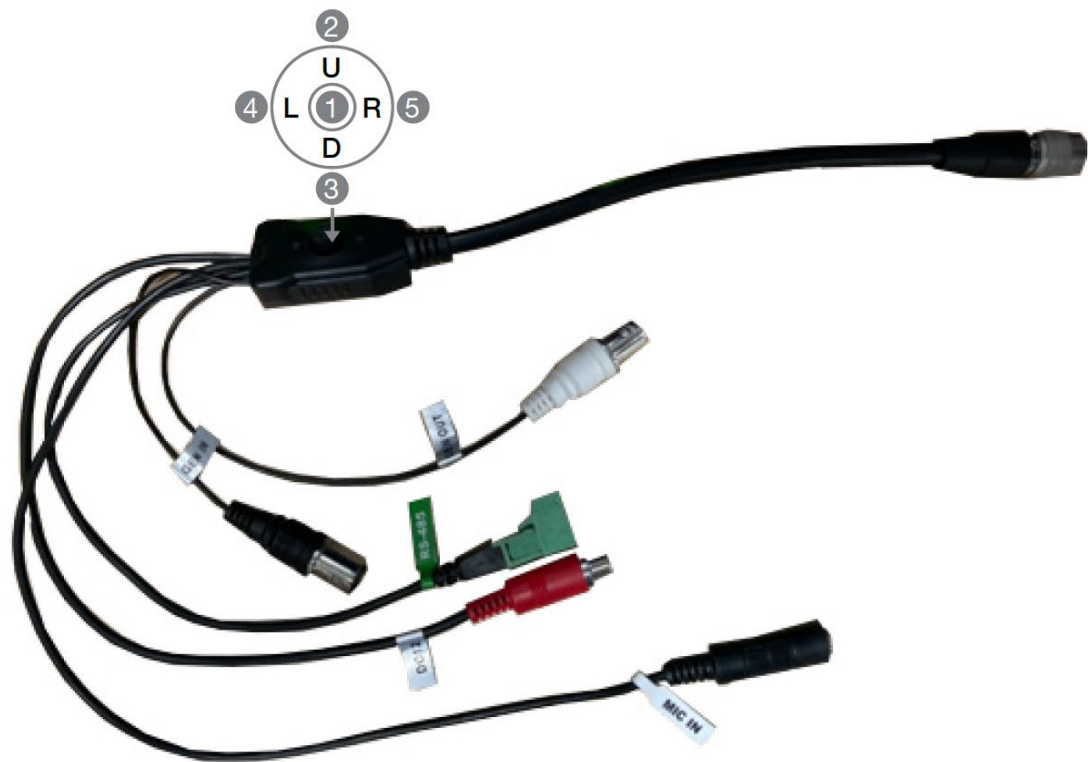
1. Plug the camera into power source and connect breakout cable to rear camera panel (locking connection), Power LED should illuminate.
2. Push OSD joystick button UP, DOWN, UP, DOWN and PUSH and HOLD for five seconds.
3. Camera should reset to 1920x1080i @ 59.94fps.
4. If camera does not reset, repeat steps after a power-cycle.

2. Menu Structure

SETUP	SUB MENU	SUB MENU
WB CONTROL	AWB	
	ATW	
	ONE PUSH	
	INDOOR	
	OUTDOOR	
	MANUAL	BLUE
		RED
	BLACK BALANCE	AUTO
		MANUAL
AE CONTROL	AUTO	AGC MAX
		AE BRIGHT
		LENS MODE
	SHUT FIX	SHUTTER
		AGC MAX
		AE BRIGHT
	AGC FIX	AGC
		AE BRIGHT
		LENS MODE
	MANUAL	SHUTTER
		AGC
	DAY / NIGHT	DAY
NIGHT		
AUDIO	MIC/LINE	
	AUDIO LEVEL	
	MIC ATTENUATOR	
	SAMPLE BITS	
GENLOCK	MODE	
	SYNC OUTPUT	
	H-SYNC PHASE	
	V-SYNC PHASE	
	PHASE SET	

SETUP	SUB MENU	SUB MENU	
IMAGE CONTROL	LENS SHADING		
	CONTRAST		
	BRIGHTNESS		
	SATURATION		
	HUE		
	EDGE ENHANCE		
	AUTO SATURATE		
	AUTO EDGE		
	BLACK WHITE LV		BLACK LEVEL
			WHITE LEVEL
GAMMA CORRECT			
DNR		DNR MODE	
		DNR LEVEL	
PICTURE STYLE	MATRIX		
	WHITE BALANCE		
	GAMMA		
	DETAIL		
	DZOOM		
SPECIAL	DEFOG		
	DIS		
	BACKLIGHT		
	BINNING		
	DEFECT PIXEL		
	DISP FUNCTION		
	WDR		
	PRIVACY		
	CAM TITLE		
	SETUP	COMMUNICATION	CAM ID
ID DISPLAY			
BAUD RATE			
MODEL			
S/W VER			
RESET	OUTPUT FORMAT		
EXIT	USER/FACTORY		

3. 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

MAIN MENU	
WB CONTROL	>
AE CONTROL	>
DAY/NIGHT	>
AUDIO	>
GENLOCK	>
IMAGE CONTROL	>
SPECIAL	>
PICTURE STYLE	>
SETUP	>
RESET	>
EXIT	>

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

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

4. 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.

- **AWB:** Controls the automatic adjustment of the light source's color temperature from 3000°K ~ 8000°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.
 - **BLUE OFFSET:** Adjust the Blue tone within the ATW mode. (0~100)
 - **RED OFFSET:** Adjust the Red tone within the ATW mode. (0~100)
- **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 optimum result.
- **MANUAL:** Select this to fine-tune White Balance manually.
 - **BLUE:** Adjust the Blue tone of the image. (0~255)
 - **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.
- **BLACK BALANCE (AUTO and MANUAL)**
 - **MANUAL:** Adjust the Blue, Red and Green components of black.

MAIN MENU	
WB CONTROL	>>>
AE CONTROL	>
DAY/NIGHT	>
AUDIO	>
GENLOCK	>
IMAGE CONTROL	>
SPECIAL	>
PICTURE STYLE	>
SETUP	>
RESET	>
EXIT	>

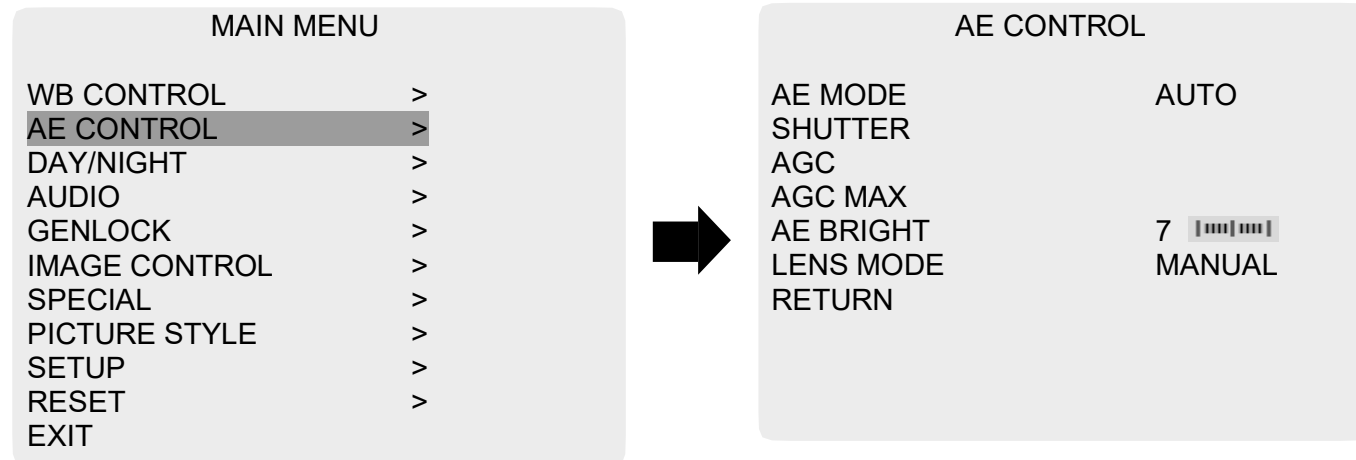
➔

MODE	WB CONTROL
	MANUAL
PUSH	
BLUE	50
RED	50
BLUE OFFSET	50
RED OFFSET	50
RETURN	>

1. Adjust White Balance first by using the AWB or 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.

5. AE Control

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



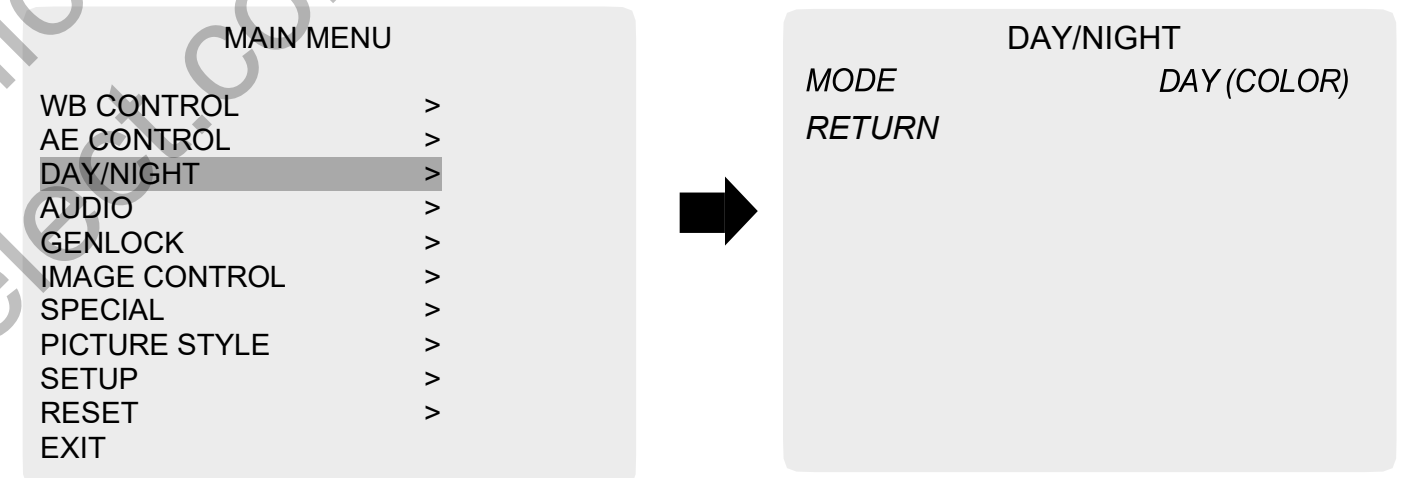
- **AUTO:** Adjusts the exposure level automatically. Detailed fine-tuning options are available under this menu.
- **SHUT FIX:** Provides more detailed shutter speed options. All other controls are tuned for the selected shutter speed.
- **AGC FIX:** Provides more detailed gain option. All other controls are tuned for the selected gain.
- **MANUAL:** Adjusts the exposure level manually.
 1. **SHUTTER:** Speed can be set at auto or manual. (NTSC: 1/30~1/10,000, PAL: 1/25~1/10,000)
 2. **AGC:** Electronic gain level can be controlled. (0dB~48dB)
 3. **AGC MAX:** Used to set maximum gain value to control the video noise caused by Auto Gain Control. (0~15)
 4. **AE BRIGHT:** Select this to adjust auto exposure brightness levels. (0~24)
- **LENS MODE:** Adjusts lens mode for the installed lens. (This option is for DC IRIS lens only, available on CV366 and CV368)

Note: DC Iris is automatically set by camera ISP. It's not manually adjustable.

6. DAY / NIGHT

Select DAY, NIGHT or AUTO using the Right or Left button

- **MODE:** DAY, NIGHT, AUTO
- **DAY:** When set to DAY mode, camera stays in color (and IR cut filter is engaged for CV366 and CV566).
- **NIGHT:** When set to NIGHT mode, camera stays in B&W (and IR cut filter is removed for CV366 and CV566).
- **AUTO:** When set to AUTO mode, camera changes between DAY and NIGHT mode when the light condition changes. (This mode is only available on CV366 and CV566).

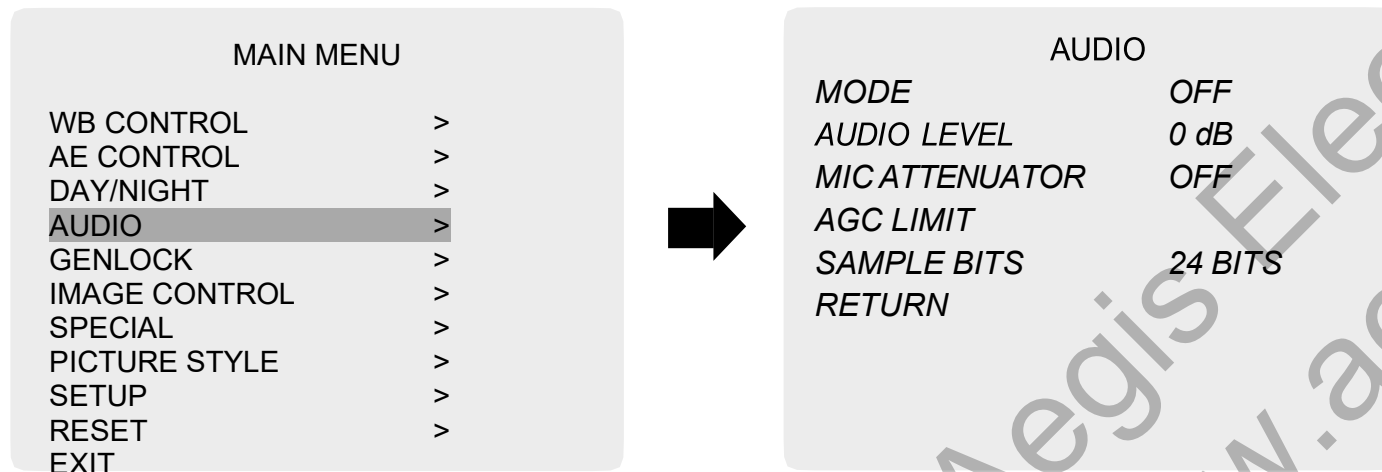


7. AUDIO

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.

- **MIC / LINE:** Select MIC or LINE for the 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.
 1. **SAMPLE BITS:** Select the bit depth of audio

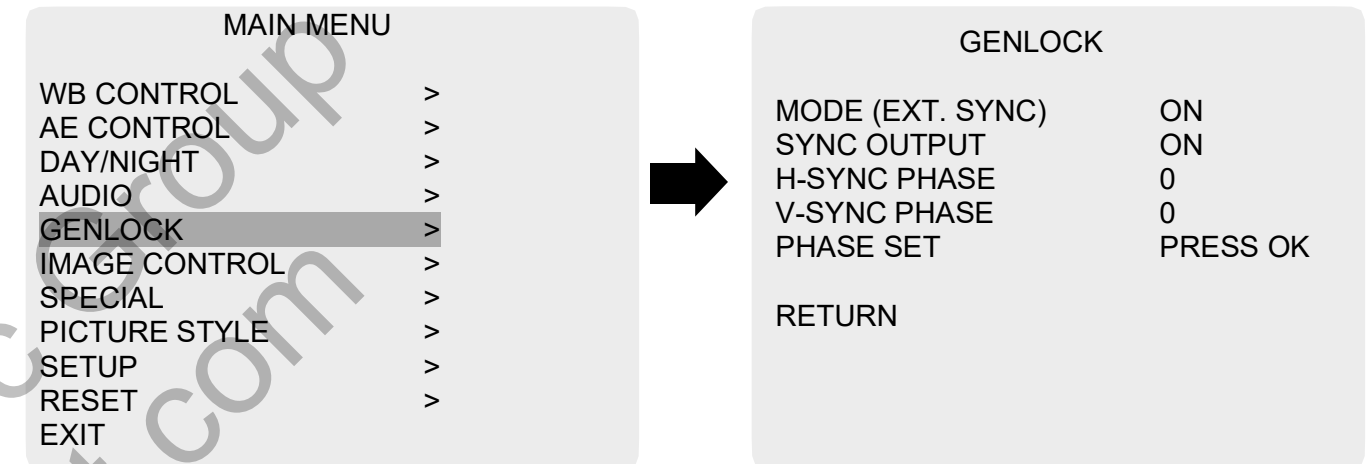
Line input does not provide power to the audio device. Mic will use Mic Bias 1.7V and up to 3mA max current.



8. GENLOCK

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

You can enable/disable **GENLOCK** and phase adjustment using the **RIGHT** or **LEFT** buttons.

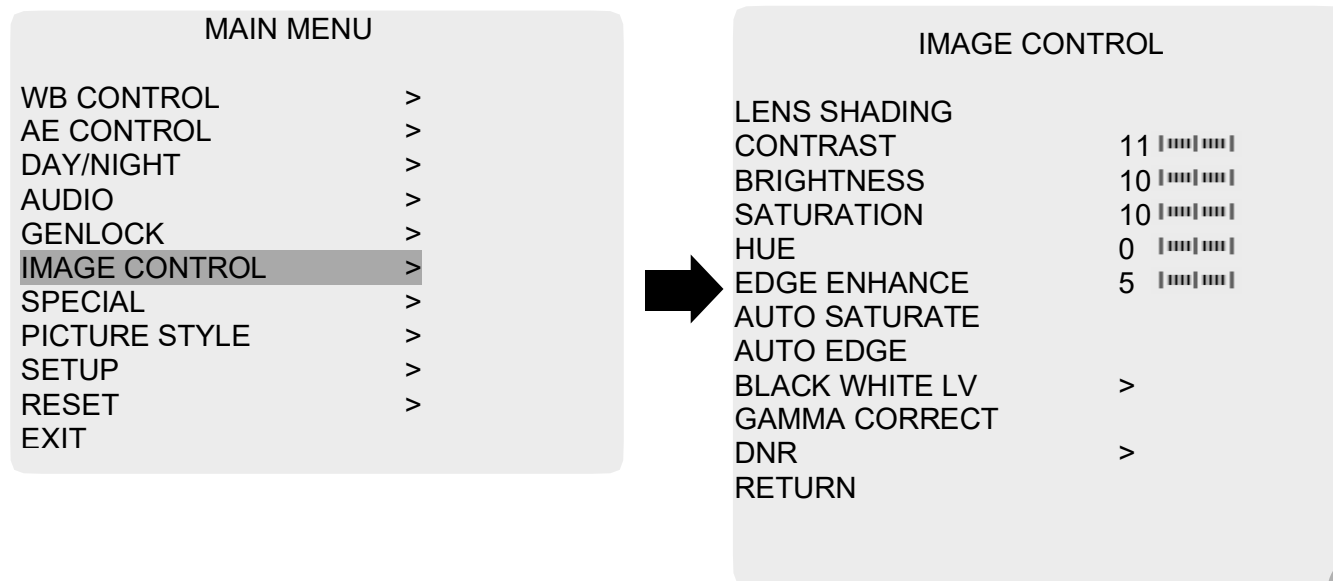


- **MODE(EXT. SYNC):** Turn ON of OFF the tri-level genlock sync feature. When the camera is properly synchronized the blue LED from the back of the camera will light up.
- **SYNC OUTPUT:** Turn ON the SYNC OUTPUT to enable genlock daisy chain feature.
- **H-SYNC PHASE:** Adjust the pixel shifting from this menu.
- **V-SYNC PHASE:** Adjust the line shifting from this menu.
- **PHASE SET:** When H-sync and/or V-sync is adjusted, press OK from this menu to apply the changes.

9. IMAGE CONTROL

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

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

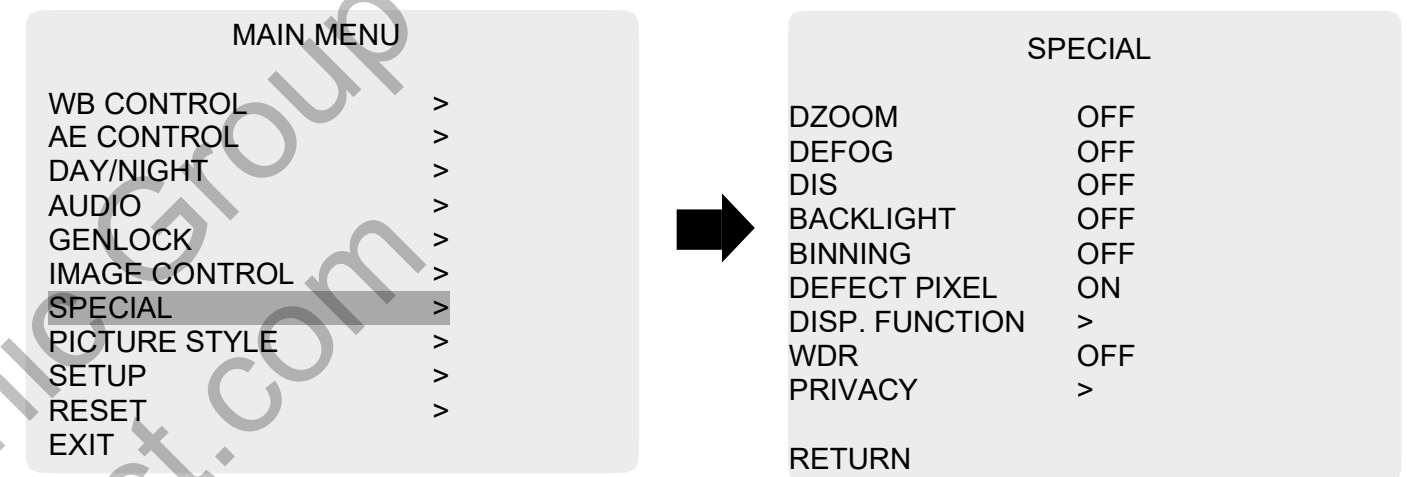


- **LENS SHADING:** Corrects inconsistent brightness level in the image.
- **CONTRAST:** Adjust the image contrast level.
- **BRIGHTNESS:** Adjust the image brightness level.
- **SATURATION:** Adjust the image saturation level.
- **HUE:** Adjust the image hue level.
- **EDGE ENHANCE:** Adjust the image sharpness level.
- **AUTO SATURATE:** Decrease saturation automatically when noise scene is detected.
- **AUTO EDGE:** Adjust sharpness level automatically.
- **BLACK WHITE LEVEL:** Adjust the image black level and white level value.
- **GAMMA CORRECT:** Adjust the image output gamma level.
- **DNR:** Reduces video noise at low ambient light
Select the **DNR** level from **Auto**, **LOW**, **MIDDLE**, and **HIGH** using the **LEFT** or **RIGHT** button.

10. SPECIAL

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

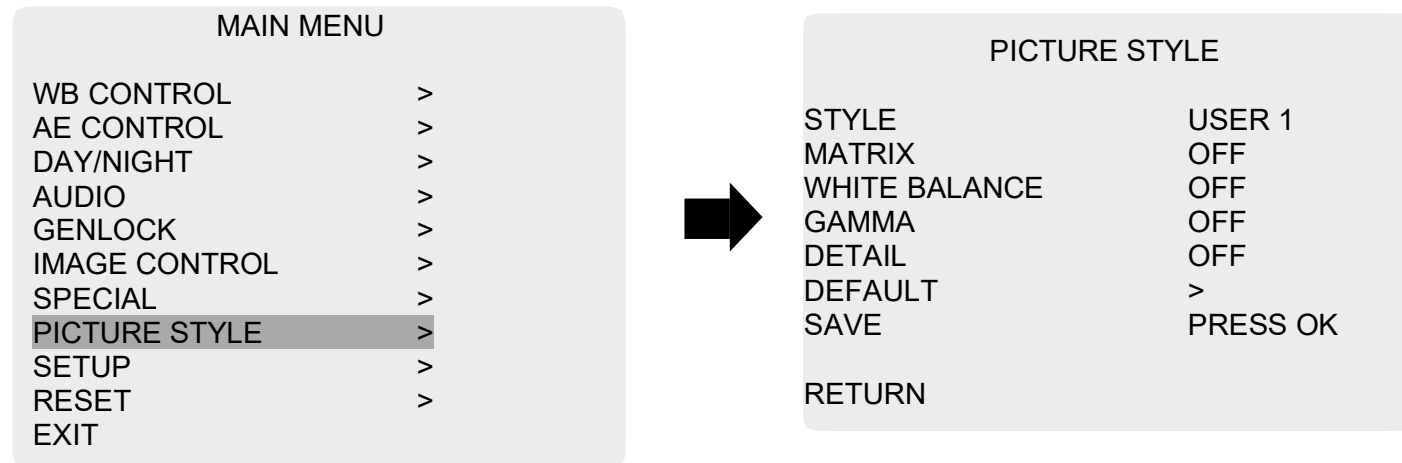
You can select **DEFOG**, **MOTION DETECT**, **BACKLIGHT**, **DEFECT PIXEL**, and **FLICKER DETECT** using the **UP** or **DOWN** buttons.



- **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.
- **DIS:** This feature enables digital image stabilization.
- **BACKLIGHT:** Adjust backlight compensation by choosing either **BLC** **HLM** from this menu.
- **BINNING:** Enable or disable pixel binning.
- **DEFECT PIXEL:** Advanced defective pixel correction menu.
- **DISP FUNCTION:** Display effect such as freeze, mirror, flip, and picture style can be applied from this menu.
- **WDR:** This feature enables user to view both object and background more clearly when background is too bright.
- **PRIVACY:** Mask areas you want to hide on the screen by applying the privacy zones.

11. PICTURE STYLE

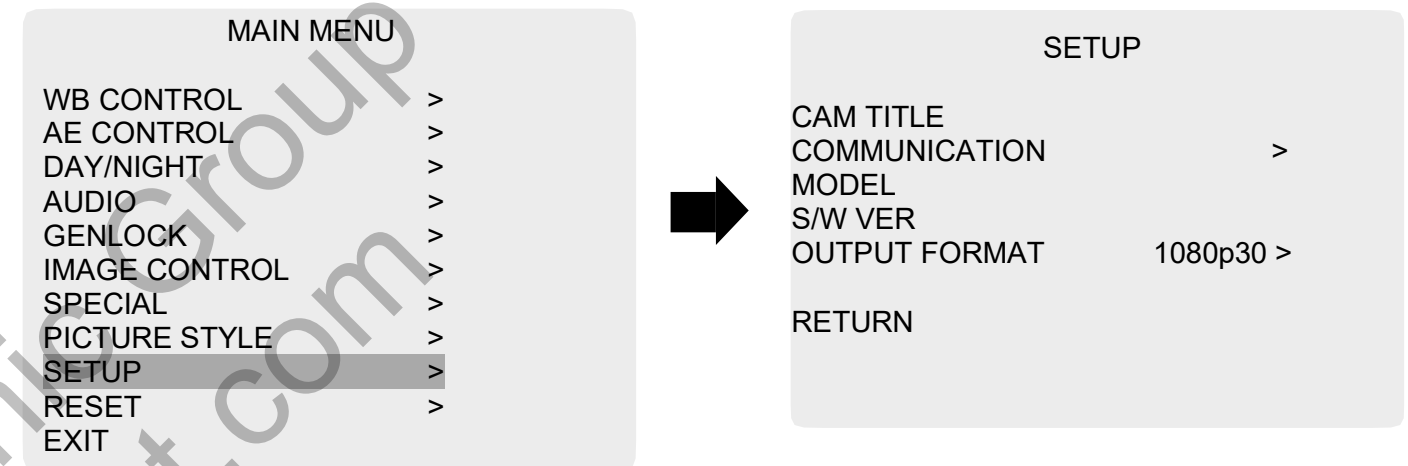
Select **PICTURE STYLE** menu for color matrix tuning.
You can adjust settings using the **UP** or **DOWN** buttons.



- **STYLE:** 6 different settings can be assigned.
- **MATRIX:** Matrix feature can be configured.
 1. **STYLE:** 4 predefined color matrix styles are available to choose from.
 2. **MASTER LEVEL:** Fine adjustment of master color gain(saturation).
 3. **MASTER PHASE:** Fine adjustment of master color hue.
 4. **COLOR SEL:** Select color to be adjusted. 6 colors to choose from.
 5. **COLOR LEVEL:** Fine level adjustment of selected color.
 6. **COLOR PHASE:** Fine phase adjustment of selected color.
- **WB:** Adjust camera white balance within the selected picture style.
WB feature is identical as the one from the main menu. When Picture Style WB is enabled, main menu WB will be disabled.
- **GAMMA:** Adjust camera gamma value within the selected picture style.
Gamma feature is identical as the one from the main menu. When Picture Style Gamma is enabled, main menu Gamma will be disabled.
- **DETAIL:** Adjust camera peak levels(sharpness) balance within the selected picture style.
 1. **H-PEAK LEVEL:** Adjust horizontal peak level.
 2. **V-PEAK LEVEL:** Adjust vertical peak level.
 3. **VIDEO DEPENDANT:** Adjust image crispening.
 4. **CLIP & CLIP LEVEL:** Adjust sharpness peak clip.
- **DEFAULT:** Reset the selected user number to the default value.
- **SAVE:** Save the selected user settings.

12. 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

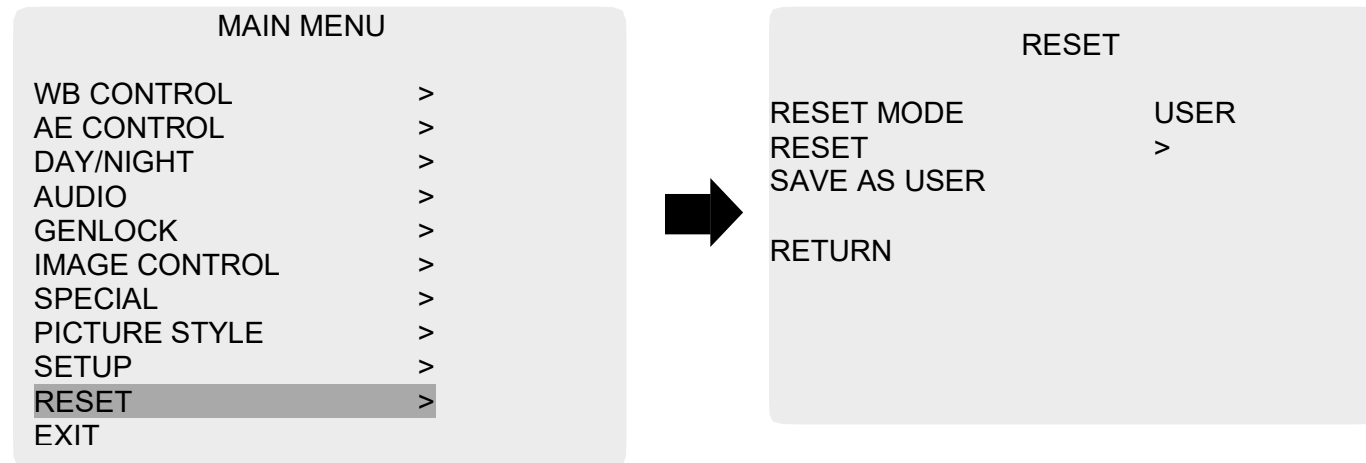


- **CAM TITLE:** Camera title can be turned ON or OFF.
- **COMMUNICATION:** VISCA communication can be adjusted.
 1. **CAM ID:** Camera ID can be setup. (0~254)
 2. **ID DISPLAY:** Camera ID display can be displayed.
 3. **BAUDRATE:** Camera baudrate can be set. (2400, 4800, 9600, 19200, 38400, 115200)
- **MODEL:** Displays product module number.
- **S/W VER:** Displays 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:
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

13. RESET

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

- **RESET**: Reset the camera settings 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 perform a blind resolution & framerate RESET using OSD Menu joystick use below button combinations:

1. To reset camera to 1920 x 1080i 59.94fps use this joystick sequence:
UP, DOWN, UP, DOWN, ENTER (push and hold)
2. To reset camera to 1280 x 720p 59.94fps use this joystick sequence: UP, DOWN, LEFT, RIGHT, ENTER (push and hold)

14. EXIT

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



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

15. TROUBLESHOOTING

WARRANTY

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.	<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 75 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.