HDOB-EL2MPIR50-W

User’s Manual

Version 1.0.0

Welcome

Thank you for purchasing our digital camera!
This user's manual is designed to be a reference tool for your system.
Please read the following safeguard and warnings carefully before you use this series product!
Please keep this user's manual well for future reference!

Important Safeguards and Warnings

1．Electrical safety

All installation and operation here should conform to your local electrical safety codes.
The power shall conform to the requirement in the SELV (Safety Extra Low Voltage) and the Limited power source is rated 12V DC in the IEC60950-1. (Refer to general introduction) **Please note: Do not connect two power supplying sources to the device at the same time; it may result in device damage!**
We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.
We are not liable for any problems caused by unauthorized modification or attempted repair.

2．Transportation security

Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.

3．Installation

Do not apply power to the camera before completing installation.
Please install the proper power cut-off device during the installation connection.
Always follow the instruction guide the manufacturer recommended.

4．Qualified engineers needed

All the examination and repair work should be done by the qualified service engineers.
We are not liable for any problems caused by unauthorized modifications or attempted repair.

5．Environment

This series digital camera should be installed in a cool, dry place away from direct sunlight, inflammable, explosive substances and etc.
Please keep it away from the electromagnetic radiation object and environment.
Please make sure the CCD (CMOS) component is out of the radiation of the laser beam device. Otherwise it may result in CCD (CMOS) optical component damage.
Please keep the sound ventilation.
Do not allow the water and other liquid falling into the camera.
Thunder-proof device is recommended to be adopted to better prevent thunder.
The grounding studs of the product are recommended to be grounded to further enhance the reliability of the camera.

6. Daily Maintenance

Please shut down the device and then unplug the power cable before you begin daily maintenance work.

Do not touch the CCD (CMOS) optic component. You can use the blower to clean the dust on the lens surface.
Always use the dry soft cloth to clean the device. If there is too much dust, please use the water to dilute the mild detergent first and then use it to clean the device. Finally use the dry cloth to clean the device.
Please put the dustproof cap to protect the CCD (CMOS) component when you do not use the camera.
Dome enclosure is the optical component, do not touch the enclosure when you are installing the device or clean the enclosure when you are doing maintenance work. Please use professional optical clean method to clean the enclosure. Improper enclosure clean method (such as use cloth) may result in poor IR effect of camera with IR function.

7. Accessories

Be sure to use all the accessories recommended by manufacturer.
Before installation, please open the package and check all the components are included.
Contact your local retailer ASAP if something is broken in your package.

Accessory Name	Amount
Camera Unit	1
Quick Start Guide	1
CD	1
Installation Accessories Bag	1

Table of Contents

1 General Introduction

1.1 Overview

This series camera conforms to the HD-SDI specifications. It supports high speed video signal, almost no delaying in the transmission. The HD-SDI interface adopts the coaxial cable and uses the BNC port as the cable standard.

This series product has the megapixel definition and supports the DC 12V power supplying and OSD button function.

1.2 Features

Data Transmission	● Adopts the coaxial cable. ● Use the BNC port as the cable standard.
Peripheral Equipment	● Support peripheral equipment connection via the RS485 port. Support various peripheral device control protocols. .
Power	● External power adapter. Support DC 12V power supply.
Assistant Function	● Day/Night mode auto switch (**ICR switch.**) ● Support OSD button function. ● Support 1080P@25,1080P@30,720P@25,720P@30,720P@50,720P@60. ● Support WDR. ● Support anti-flicker. ● Support HLC. ● Backlight compensation: screen auto split to realize backlight compensation to adjust the bright.

1.3 Specifications

1.3.1 Performance

Please refer to the following sheet for digital camera performance specification.

Model / Parameter		HDOB-EL2MPIR50-W
System	**Main Processor**	High performance processor
Video Parameter	**Image Sensor**	1/3-inch CMOS
	Pixel	1920(H)*1080(V)
	Day/Night	Support day/night mode switch and IR-CUT at the same time.
	Gain Control	Fixed/Auto
	White Balance	Manual/Auto/Day/Night
	Exposure	Manual/Auto PAL: It ranges from 1/3 to 1/10000. NTSC: It ranges from 1/4 to 1/10000.
	Video Frame Rate	Conform to the SDI specifications SMPT274/292 protocol
	Video Bit Rate	PAL：1920*1080@25fps, 1280*720@25 fps, 1280*720@50 fps； NTSC：1920*1080@30fps, 1280*720@30 fps, 1280*720@60 fps

	Mirror	Support
	Aux Fucntion	Support WDR, HLC, BLC, anti-flicker, low motion blur, low noise, 3D NR, motion detect, privacy mask
	Image	Support parameter setup such as brightness, contrastness.
	Video Information	OSD menu
	Lens Interface	M12 lens, 6mm (3.6mm optional)
AUX Interface	**Video Output**	1-channel HD-SDI output
	RS485 Port	May set image and OSD.
General Parameter	**Power**	Support DC 12V power
	Power Consumption	IR: 6W
	IR	20m
	Protective Level	IP66
	Working Temperature	-10℃~+60℃
	Working Humidify	≤95%
	Dimensions (Unit:mm)	70×66×160
	Weight	0.5kg
	Installation	Provide default bracket.

2 Framework

2.1 Multiple-function Combination Cable

You can refer to the following figure for multiple-function combination cable information. See Figure 2-1.

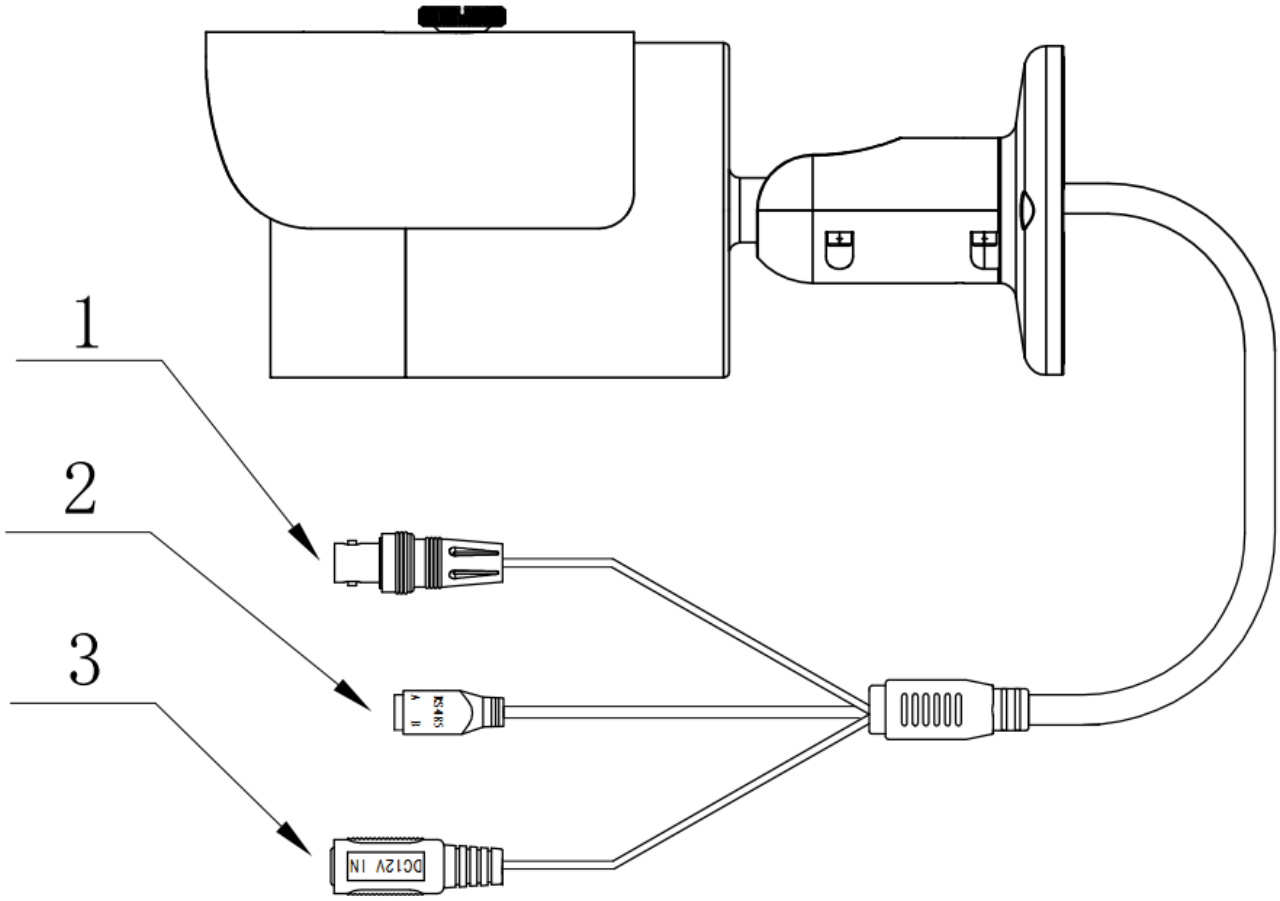


Figure 2-1 Multiple-function combination cable

Please refer to the following sheet for detailed information.

SN	Port Name	Function	Note
1	HD-SDI	SDI output	Send out SDI video stream conforming to the HD-SDI standard.
2	RS485	RS485 port	RS485 port. Control the 485 configuration tool to set image.
3	DC 12V	Power input port	Power port. Input DC 12V.

2.2 Dimension

Please refer to the following two figures for dimension information. The unit is mm. See Figure 2-2 and Figure 2-3.

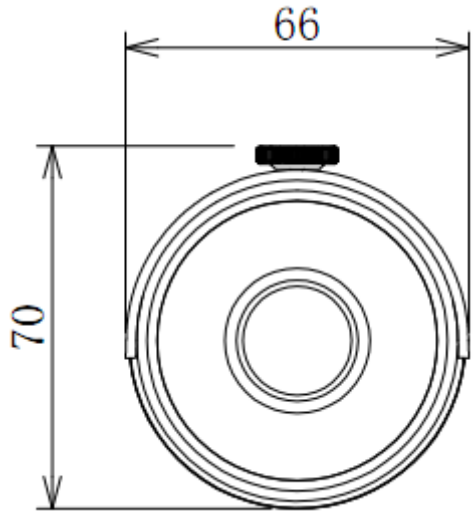


Figure 2-2 Dimension illustration 1

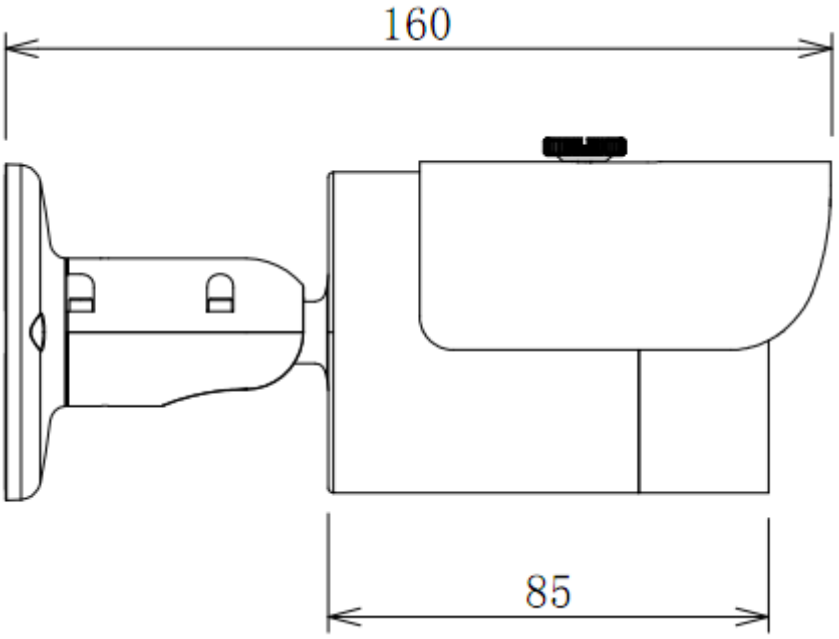


Figure 2-3 Dimension illustration 2

3 Installation

Important

- **Before the installation, please make sure the installation surface can sustain at least 3X weight of the bracket and the camera.**

3.1 Device Installation

Please follow the steps listed below to install the device. Please refer to Figure 3-1 for reference.

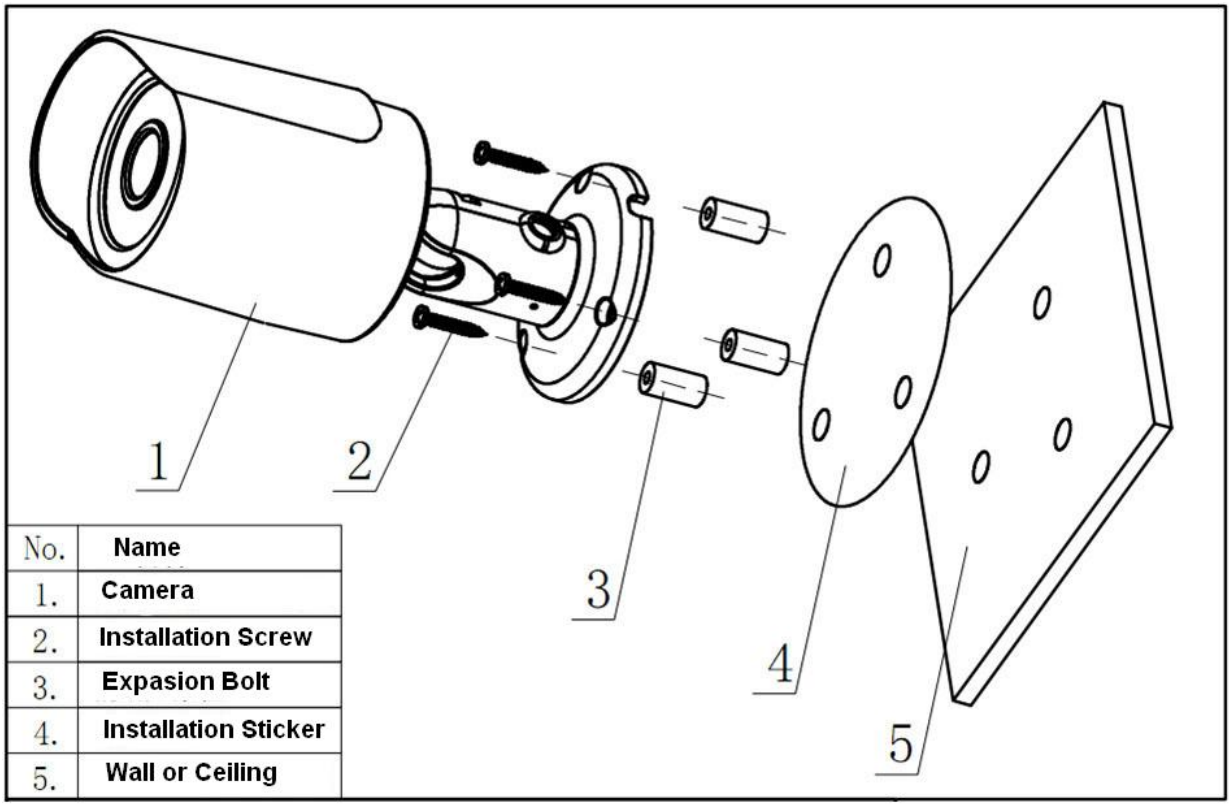
Step 1. Place installation sticker onto installation surface (wall or ceiling).

Step 2. Drill a hole according to instruction on installation sticker.

Step 3. Open accessories bag, take out expansion bolt, and nail it into the hole you drilled.

Step 4. Open accessories bag, take out screw. Use this screw to fix the device onto installation surface (wall or ceiling). Device sunshield may move forward or backward. Tighten screw on sunshield after you have fixed the device.

Step 5. Connect device's external wiring.



No.	Name
1.	Camera
2.	Installation Screw
3.	Expasion Bolt
4.	Installation Sticker
5.	Wall or Ceiling

Figure 3-1 Device installation illustration 1

3.2 Lens Adjustment

See Figure 3-2.

Step 6. Use cross driver to loosen adjusting screw.

Step 7. Adjust device up/down/left/right according to your need.

Step 8. Use cross driver to tighten adjusting screw.

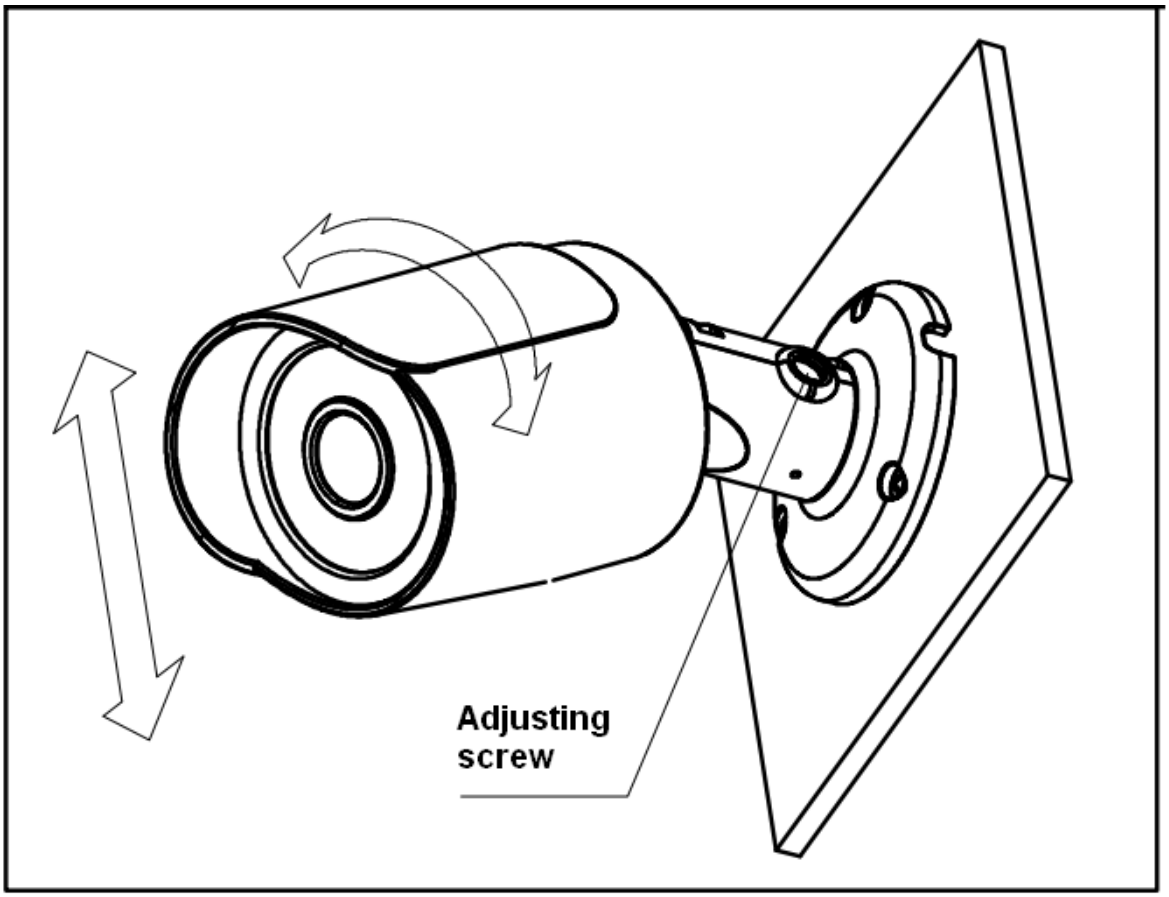


Figure 3-2 Lens adjustment

4 Configuration Tool

4.1 Overview

You can use configuration tool to set the device parameter and upgrade the system.

4.2 Operation

Double click the “485Configs.exe” icon; you can see an interface is shown as in Figure 4-1.
In the device interface, you can view COM setup, parameter setup, OSD, upgrade information and etc.
The parameter interface is shown as in Figure 4-1.

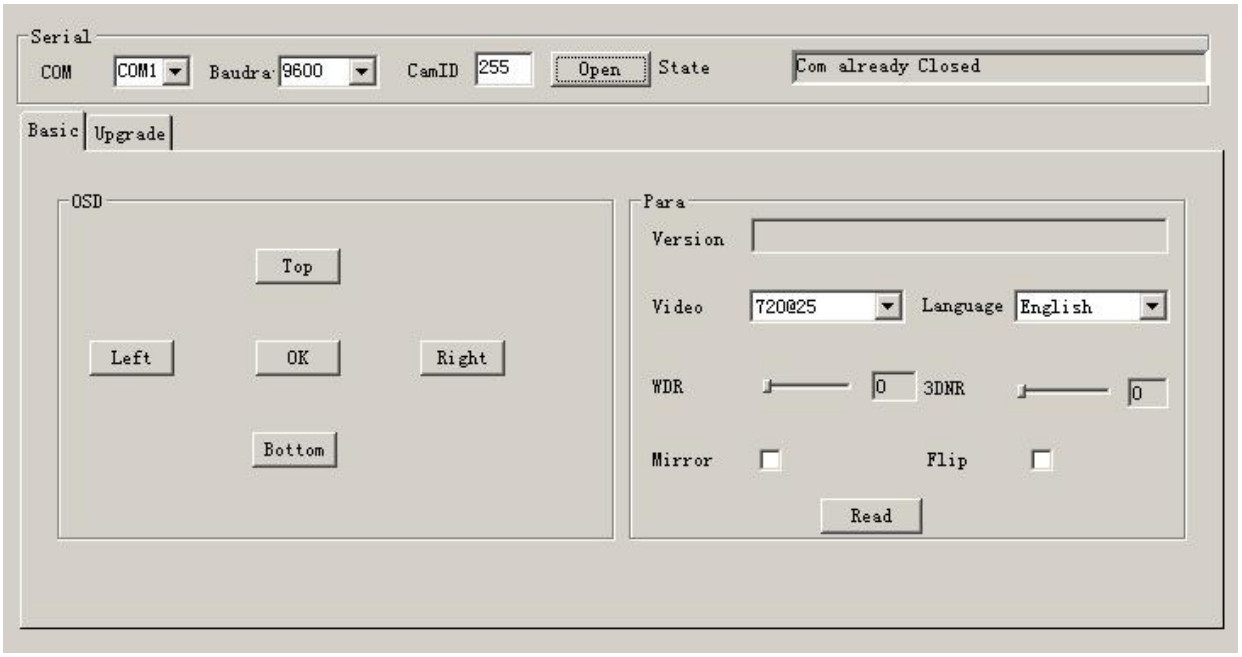


Figure 4-1 Parameter interface

The upgrade interface is shown as in Figure 4-2.

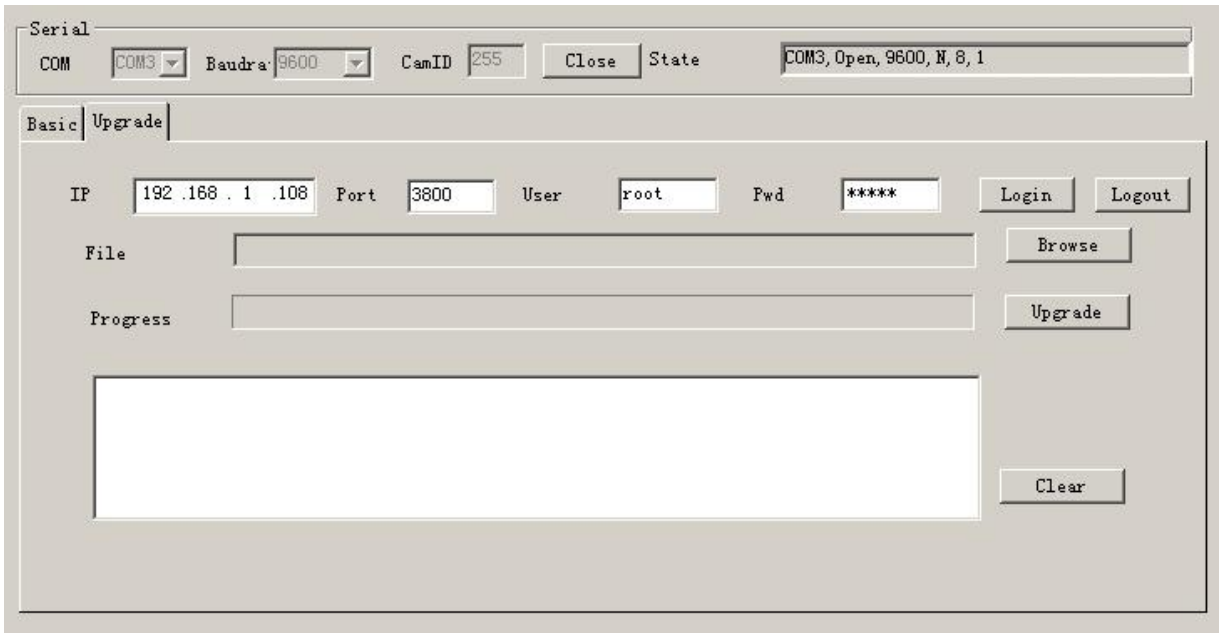


Figure 4-2 Upgrade interface

You can refer to the following sheet for detailed information.

Item				Note
COM Setup	COM			Select the corresponding COM number.
	Baud rate			Support 115200, 38400, 9600 and 2400.
	Current status			Display the corresponding COM status.
	Address			Support 0~255.
Parameter Setup	Color	Brightness		Set the brightness value to adjust the video bright and dark level. The value ranges from 0 to 100.Recommended value is 40~60 and default is 50.
		Contrast		You can set the different value to control the contrastness. The value ranges from 0 to 100. Recommended value is 40~60 and default is 50.
		Saturation		Set the saturation value to adjust the video saturation. The value ranges from 0 to 100. Recommended value is 40~60 and default is 50.
		Sharpness		You can set sharpness of video. The value ranges from 0 to 100. Recommended value is 40~60 and default is 50.
		3D NR		You can set to lower noise.
	Exposure	Anti-flicker		● Outdoor: You can switch this mode to exposure and get effect under exposure mode. ● 50HZ: When electricity supply is 50HZ, adjust exposure according to scene brightness. ● 60HZ: When electricity supply is 60HZ, adjust exposure according to scene brightness.
		Exposure	Auto	Image overall brightness will auto adjust according to different scene brightness. The lower the gain, the lower the noise.
			Low Noise	● Image overall brightness will auto adjust according to different scene brightness. The lower the gain, the lower the noise. ● Under same scene, low noise mode will always be lower than auto mode.
			Low Motion Blur	● Image overall brightness will auto adjust according to different scene brightness. The shorter the exposure time, the weaker the blur. ● Under same scene, low motion blur mode will always be lower than auto mode.
			Manual	Display manual exposure value.
	Others	Scene Mode		Set WDR. Default is auto mode. ● Auto: auto set WDR. ● Day: WDR is day mode. ● Night: WRD is night mode. ● Custom: manually set red, blue gain with range 0~100.
		Day/night mode		Set image color. Default is auto when config file is general. Default is color when config file is day. Default is B/W when config file is night. ● Color: camera only output color image. ● Auto: Based on device (overall brightness or IR light), select color or B/W. ● B/W: camera only output B/W image.
		BLC	BLC	● Default BLC: based on scene, auto performs BLC.
			WDR	For WDR scene, it can lower brightness in high light area. Its range is 1~ 100 and default is 50.

			HLC	Open HLC. Its range is 1~100 and default is 50. HLC is available only when anti-flicker is outdoor and exposure mode is auto.
			Off	Close BLC. Note: BLC is off by default.
		Video		Support 1080P@25,1080P@30,720P@25,720P@30,720P@50,720P@60.
		Mirror		Change left/right direction of camera.
		Flip		Change up/down direction of camera
		Motion		You can set 4 areas, For each area, you can set size, location, sensitivity and area threshold. When motion detection occurs, there will be red flashing in video.
		Privacy Mask		You can set 8 areas. For each area, you can set size, location. When privacy mask is enabled in a area, there will be a black block covering this area.
	Default			Restore system default setup.
OSD				Go to the main menu. Use the up/down button to the corresponding item and then use the left/right button to adjust the parameter. Note: You can switch between return and exit via left/right keys.
System upgrade				Step1. Connect 4pin white female end to 4pin white male end on device IR panel, and connect USB to PC. Note: Use alternative USB to adapt 4pin white female end wire. Step 2. After connection complete, there will be a message. Step 3. Use installation to install, and log in config tool. Click on upgrade button. It takes about 30s to upgrade.

The OSD setup interface is shown as in Figure 4-3.

Figure 4-3 OSD setup

Parameter				Note
Lens				Mode: manual
Exposure	Exposure	Auto		-
		Low noise	Gain Max	0~ 100
			Gain Min	0~ 100
		Low Motion Blur	Shutter Max	P：0~ 40ms N：0~ 33ms
			Shutter Min	P：0~ 40ms N：0~ 33ms
		Manual	Shutter	1/100000, 1/10000, 1/4000, 1/2000, 1/1000, 1/500, 1/250, 1/120, 1/100, 1/60, 1/50, 1/30, 1/25, 1/15, 1/12, 1/10, 1/8, 1/6, 1/5, 1/4, 1/3, custom
			Shutter Max	0~ 300ms
			Shutter Min	0~ 300ms
			Gain Max	0~ 100
			Gain Min	0~ 100
	Anti-flicker（outdoor, 50HZ, 60HZ）			● 50HZ: 1/10000, 1/4000, 1/2000, 1/1000, 1/500, 1/250, 1/100, 1/50, 1/25, 1/12, 1/10, 1/6, 1/5, 1/4, 1/3 ● 60HZ: 1/10000, 1/4000, 1/2000, 1/1000, 1/500, 1/250, 1/120, 1/60, 1/30, 1/15, 1/12, 1/8, 1/6, 1/4, Note: 50HZ and 60HZ mode have different exposure mode without low motion blur or low noise.
	BLC	BLC		BLC/WDR/HLC Note: You can enable only one mode at once. 0 means off.
		BLC		On, off
		WDR		0~ 100
		HLC		0~ 100 Note: Only auto exposure and outdoor anti-flicker have this function.
White Balance	White Balance			Auto/Manual/Day/Night
	Blue			0~ 100
	Red			0~ 100
Day&Night				Auto/BW/color
Advanced	Camera Name			Input up to 22 characters.
	Mirror	Mirror		On, off
		Flip		On, off
	Motion	Motion		On, off
		Area Sel		0 ~ 3
		Area State		On, off
		Sensitivity		0 ~ 100
		Threshold		0 ~ 100
		Area Setup		Position, size Note: Adjust position and size via arrow key.
		Default		Area 30, display off, sensitivity 50
	Privacy Mask	Privacy Mask		On, off
		Area Sel		0 ~ 7
		Area State		On, off

		Area Setup	Position, size Note: Adjust position and size via arrow key.
		Default	Display off
	Language		English
	COM Setup	Address	1~ 254
		Baudrate	115200, 38400, 9600, 2400
		Apply	Click on Apply when you modified setup.
Image	3DNR		0~ 100
	Sharpness		0~ 100
	Brightness		0~ 100
	Contrast		0~ 100
	Saturation		0~ 100
	Video		1080P@25, 1080P@30, 720P@25, 720P@30, 720P@50, 720P@60
Default			Except video and language, restore all default.

Appendix Toxic or Hazardous Materials or Elements

Component Name	Toxic or Hazardous Materials or Elements					
	Pb	Hg	Cd	Cr VI	PBB	PBDE
Circuit Board Component	○	○	○	○	○	○
Case	○	○	○	○	○	○
Wire and Cable	○	○	○	○	○	○
Packing Components	○	○	○	○	○	○
Accessories	○	○	○	○	○	○

O: Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard.

X: Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard. During the environmental-friendly use period (EFUP) period, the toxic or hazardous substance or elements contained in products will not leak or mutate so that the use of these (substances or elements) will not result in any severe environmental pollution, any bodily injury or damage to any assets. The consumer is not authorized to process such kind of substances or elements, please return to the corresponding local authorities to process according to your local government statutes.

Note

- **This user's manual is for reference only. Slight difference may be found in user interface.**
- **All the designs and software here are subject to change without prior written notice.**
- **All trademarks and registered trademarks are the properties of their respective owners.**
- **If there is any uncertainty or controversy, please refer to the final explanation of us.**
- **Please visit our website for more information.**