

# CV502-MB/M Quick Start Guide

## Full-HD (3G/HD-SDI) 2.5MP Mini-Broadcast POV Camera with 3.7mm 2MP Lens



Do not use the camera if fumes, smoke or a strange odor is emitted from the unit, or if it seems to not function correctly. Disconnect the power source immediately and consult your supplier.



Always follow the instructions in the installation guide when applying power. Fire and equipment damage can occur if power is applied incorrectly. For the correct power supply, refer to the specification sheet.



Do not install or operate in small, unventilated areas. Heat build up can significantly reduce the performance and operating life of the product and may cause a fire.



To prevent damage, do not drop the camera or subject it to strong shock or vibration.



If installed close to a TV, radio transmitter, magnet, electric motor transformer or audio speakers the magnetic field generated may interfere with or distort the image.



Whether or not the camera is used outdoors, never point it toward the sun. Use caution when operating the camera in the vicinity of spot lights or other bright lights and light reflecting objects.

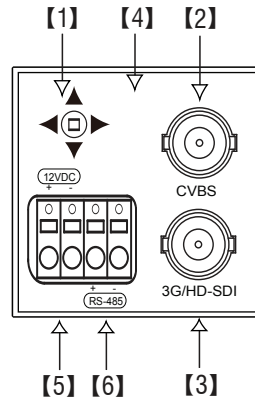


Do not use the camera in extreme environments where high temperatures or high humidity exists. Use the camera under conditions where temperatures are between 14°F ~ 122°F (-10°C ~ 50°C), and humidity is below 90%.

## Features

- 2.5 Megapixel 1/3-inch CMOS Sensor
- 3.7mm Megapixel M12 Prime Lens installed (interchangeable)
- **CV502-MB**: 920x1080p59.94/29.97, 1920x1080i59.94, 1280x720p59.94/29.97fps
- **CV502-M**: 1920x1080p60/50/30/25, 1920x1080i60/50, 1280x720p60/50/30/25fps
- 3G/HD-SDI (BNC) & CVBS (BNC) built into rear panel)
- New WDR function supports high speed & high sensitivity to various light sources
- OSD Menu Joystick, RS-485 connectable (Pelco/Visca)
- 12VDC

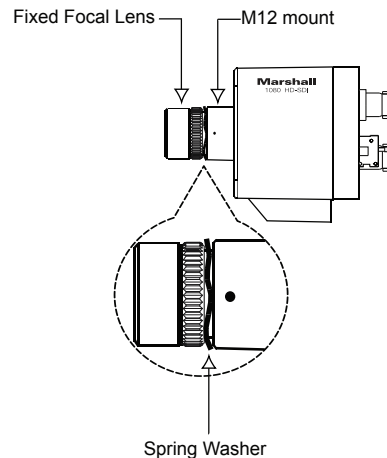
## Rear Panel Video/Power Connection



- [1]** OSD Control
- [2]** CVBS Out
- [3]** SDI Out
- [4]** POWER LED
- [5]** 12VDC
- [6]** RS-485

## How to Change a Fixed Focal Lens

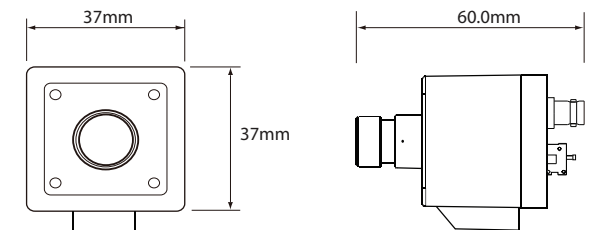
1. Please check whether lens mount type is a M12 mount.
2. Spring washer is to be inserted between a lens and a mount.
3. Go to the camera setup and set the LENS mode as ESC.



## Specifications

CV502		SPECIFICATIONS
Sensor	Image Sensor	1/3" Progressive CMOS (Approx. 2.1 mega)
	Scanning System	16:9 Progressive
	Sync. System	Internal
	Effective Pixel	1920(H) x 1080(V)
	Min. Illumination	0.2Lux (Day), 0.1Lux (Night), 0.005Lux (DSS on)
Optics	Horizontal Resolution	1,000TVL
	Lens	Fixed HD lens
Functions	Back Light Compensation	WDR/BLC
	Exposure	HLC (High Light compensation)
	White Balance	Auto (3,000°K~8,000°K)
		ATW (1,900°K~11,000°K)
Functions	Day & Night System	Manual
	Electronic Shutter	AGC / TDN (ICR)
		NTSC: 1/30~1/30000
Video Output	SDI (BNC)	PAL: 1/25~1/30000
		DSS ( ~X64)
	CVBS (BNC)	Privacy Mask, Image Mirror, 3DNR, Flickerless
		Sharpness, Defog, DIS (Digital Image Stabilizer)
Control	RS-485	Motion Detection, DSS (Digital Shutter Speed)
		SMPTE 292M (1.485Gbps)
General	SDI (BNC)	1080p@25/30 or 29.97
		1080i@50/60 or 59.94
		720p@50/60 or 59.94
		720p@25/30
	CVBS (BNC)	SMPTE 424M (2.97Gbps)
		1080p@50/60 or 59.94
	Operation Temperature	800mVp-p, 75Ω, unbalanced generator(single-ended)
Power Input	Analog Composite (1V ± 0.2 Vp-p) NTSC/PAL	
Power consumption	Max 6W	
Dimensions (W X H X D)	37(W) x 37(H) x 35(D)mm	
Net Weight	Approx. 140g (With Lens)	

## Dimensions



# HD-SDI 1080p Camera Setup: CV502-M, CV502-MB

SETUP	SUB MENU	SUB MENU	DESCRIPTION	
LENS	ESC		IRIS is fixed. Shutter controls exposure automatically if shutter is set as auto.	
	DC IRIS		Controls exposure automatically.	
WB CONTROL	AUTO		Color temperature is automatically adjusted 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 1,900K to 11,000K.	
	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	COLOR TEMPERATURE		Select color temperature from LOW, MIDDLE, or HIGH.
		RED GAIN		Adjust the Red tone level manually. Adjust the red tone of the image (0~20).
BLUE GAIN			Adjust the Blue tone level manually. Adjust the Blue tone of the image (0~20).	
AE CONTROL (EXPOSURE)	BRIGHTNESS	0~20	Adjust the screen brightness. The bright control function adjusts gain and iris, to keep a brightness level.	
	AGC LIMIT	0~20	A function which controls the amplification/gain process automatically if the illumination falls under the usable level. Camera raises up gain to selected gain limit when dark conditions.	
	SHUTTER	AUTO		Shutter controls exposure automatically when IRIS is manual. Shutter control has the exposure control priority
		MANUAL		Shutter speed is fixed. The exposure control priority is given to other resources.
		FLICKERLESS		Use this function when you experience picture flicker, this happens when there is a conflict with the installed lighting frequency.
DSS (SENS-UP)	OFF, x2~64	When luminance condition is low, DSS can adjust the picture quality by maintaining the light level. Minimum slow shutter limit is down to x64.		
BACK LIGHT	BACK LIGHT	WDR	Enable user to view both object and background more clearly when background is too bright. (LOW, MIDDLE, HIGH).	
		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.	
	ACE	LOW, MIDDLE, HIGH	Brightness correction of the dark image area.	
	ECLIPSE	LEVEL		Highlight the bright area with a masking box with a selected color. Adjust the masking level (0~20).
COLOR			Select the color for masking (GRN, MAG, RED, BLUE, BLK, WHT, YEL, CYN)	
DAY/NIGHT	AUTO	ANTI-SAT.	Adjust the anti-saturation level manually. This feature will reduce the saturation phenomenon in which part of the camera receiving the light affected by the IR or light in Night mode.	
		AGC LEVEL	The camera will stay in DAY in a normal environment, but switched to NIGHT mode when ambient illumination become this pre-set level. This level is threshold for switching day to night. It is same as the exposure gain level.	
		AGC MARGIN	Set the margin between Day →Night switching level and Night →Day switching level.	
		DWELL TIME	Select the checking time of light condition to confirm to chage from the day mode to the night mode.	
	COLOR		The camera keeps color mode constantly.	
NIGHT		The camera keeps black/white mode constantly.		
IMAGE STABILIZER	RANGE	10%, 20%, 30%	This function will reduce image blurriness due to vibrations caused by hand shake or Pan/Tilt operation. The image will be digitally zoomed in to compensate the shifted pixels. Set the digital zoom level for image stabilizing. (Max. 30% : x1.4 Digital Zoom)	
	FILTER	LOW, MIDDLE, HIGH	Select the level of correction hold filter for the worst case of image. HIGH: Less image correction. Low: More image correction.	
	AUTO C	OFF, HALF, FULL	OFF: Disable the auto centering function. FULL: The camera will correct the blurrness due to vibrations caused by both hand shake or Pan/Tilt operation. HALF: The camera will correct the blurrness due to vibrations caused by hand shake.	
IMAGE CONTROL	COLOR LEVEL	0~20	Adjust the color level value for a fine color tune.	
	SHARPNESS	0~20	Adjust the sharpness of the image. As you increase this value, the picture outline becomes stronger and clearer.	
	MIRROR		Video output is rotated horizontally.	
	FLIP		Video output is rotated vertically.	
	D-ZOOM	1.0X ~ 16.0X	Enlarge digitally the video output up to 16X.	
	DEFOG	AUTO		This feature will help increase visibility in extreme weather conditions, such as fog, rain or in a very strong luminous intensity.
		MANUAL		Set the level of defoging function (LOW, MIDDLE, HIGH).
	DNR	OFF, LOW, MIDDLE, HIGH	This feature will reduce the video noise at low ambient light.	
	MOTION		This feature will observe the object movement by motion zone and sensitivity that are pre-set with sub menu.	
	SHADING		This feature will correct the inconsistent brightness level in the image.	
GAMMA		This feature will adjust video output brightness (STANDARD, STRAIGHT, LOW, MIDDLE, HIGH).		
FRAME RATE		Change video output format.		
DISPLAY CONTROL	CAM VERSION		Display the firmware version of the camera.	
	CAM TITLE		The camera title can be entered and it will appear over the video output.	
	PRIVACY		Mask an area you want to hide on the screen with sub menu.	
	CAM ID	0~255	Select the camera ID number for RS-485 communication.	
	BAUDRATE		Set the baudrate of RS-485 communication (2400, 4800, 9600, 19200, 38400, 57600, 115200).	
LANGUAGE		Select the menu language.		
RESET			Reset the camera settings to the factory defaults.	
EXIT			Exit the setup.	

Design and specifications are subject to change without notice.