

2.1MP HD-SDI Encapsulated Camera with 3.6mm Fixed Lens

HDMC221V2



User Manual

Please read these instructions carefully before operating the unit
and keep for further reference.

genie

Please read this instruction carefully before operating the product and keep it for further reference. All examples and pictures used here are for reference only. The contents of this manual are subject to change without notice.

CAUTION:

- Do not use this apparatus near water.
- Clean only with a dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- To help prevent electric shock, plug the equipment and peripheral power cables into properly polarized or grounded electrical outlets. These cables are equipped with the wide blade or the third prong to ensure proper grounding.
- Do not use adapter plugs or remove the grounding prong from a cable. If the provided plug does not fit your outlet, consult an electrician.
- 10) Ensure that nothing rests on your equipment's cables and that the cables are not located where they can be stepped on, tripped over, or pinched.
- Only use attachments or accessories as specified.
- Only use the equipment with the cart, stand, tripod, bracket, or table that is specified by the manufacturer or sold with the apparatus. When a cart is used, use caution to prevent the cart from tipping over and to avoid injury.
- Do not connect or disconnect during lightning storms due to risk of electric shock.
- If any of the following conditions occur, unplug the equipment from the electrical outlet and replace the part or contact your trained service provider:
 - The power cable, extension cable, or plug is damaged.
 - An object has fallen into the equipment.
 - The equipment has been exposed to water.
 - The equipment has been dropped or damaged.
 - The equipment does not operate correctly when you follow the operating instructions.

NOTE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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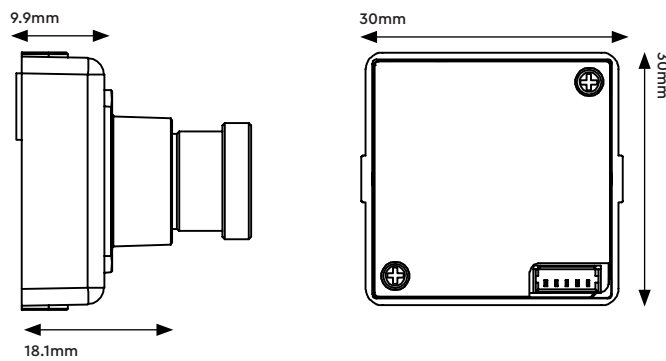
1.0 Introduction

The Genie HDMC221V2 is a 2.1MP HD-SDI encapsulated camera with a 3.6mm fixed lens.

1.1 Product Features

- 1/2.8" Progressive Scan CMOS
- 1080p (1920×1080) @ 30 (25)fps
- EX-SDI/HD-SDI/CVBS output
- Fixed lens 3.6mm
- Electronic Day & Night
- WDR, 3D DNR, Defog
- RS485 or AD KEY
- 30×30mm Mini square camera

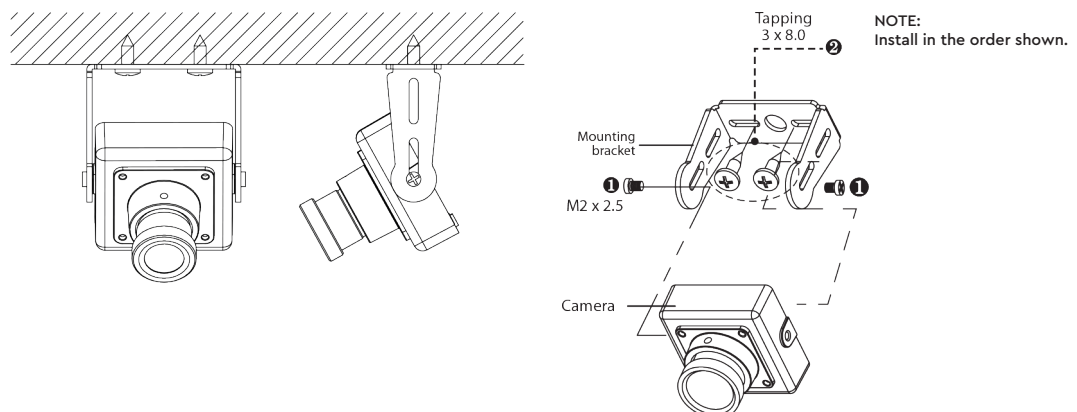
1.2 Product Dimensions



1.3 Components

- Camera
- Mounting bracket
- Screws (Tapping and M2)
- Operational manual
- DIY cable

1.4 Mounting Position

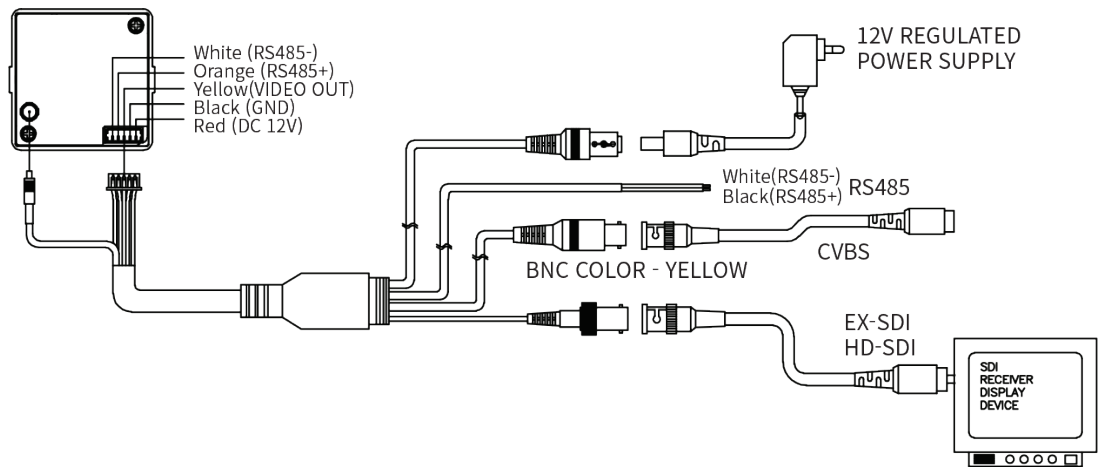


1.5 Specification

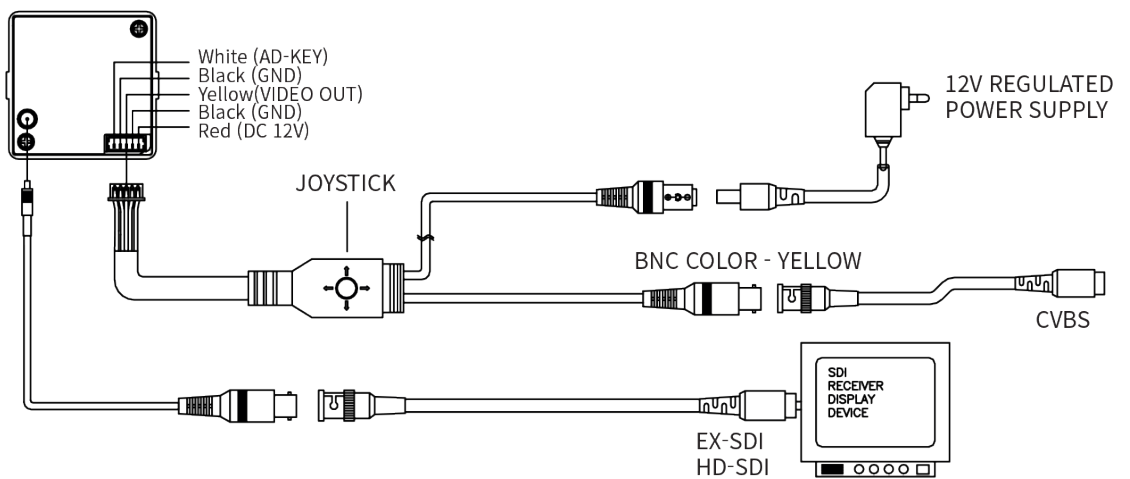
Camera	Image Sensor	1/2.8" SONY Exmor R Progressive Scan CMOS
	Resolution	HD-SDI/EX-SDI1.0_2.0_2.1: 1080p @ 30fps (25fps) / 720p @ 60fps (50fps) / 720p @ 30fps (25fps) TV out: CVBS NTSC / PAL (720H)
	Electronic Shutter	AUTO / FLICKER / MANUAL / (1/30(25)~1/30,000)
	Digital Slow Shutter (DSS)	OFF~ x32
	Minimum Illumination	0.2 Lux (F2.0, AGC33dB, DSS:x2)
	Lens	3.6mm, F 2.0, 112.3 (D) x 93.7 (H)x 49.3° (V) Angle of View
	Effective Pixels	1945(H) x 1097(V)
Functions	White Balance	AUTO/AUTO EXT/PUSH LOCK/MANUAL
	Level	135.6dB
	D-WDR	Off/On
	WDR/BLC	OFF/BLC/HLC/WDR
	Auto Gain Control (AGC)	OFF~45dB
	Day&Night	AUTO/COLOUR/B&W (Electronic D&N)
	Noise Deduction	3D-DNR (OFF/Low/Middle/High)
	Motion Detection	OFF/ON (4 Zones)
	Privacy Mask	16 Zones
	Image Rotation	OFF/H-FLIP/V-FLIP/HV-FLIP
	Defog	OFF/ON(AUTO/MANUAL)
	Sharpness	Adjustable (0~10)
	OSD Control	Cable JOYSTIC, RS-485 Control (Option)
	Language	8 languages
Video Output	HD-SDI/EX-SDI1.0/EX-SDI2.0/EX-SDI2.1/CVBS	
Others	Power Supply	DC12V (±10%)
	Power Consumption	Max.150mA @ DC12V
	Temperatue	-10°C~+50°C (Operating) -20°C~+60°C (Storage)
	Dimensions	30 × 30 mm
	Weight	Approx.28.9g (Board lens)

2.0 Connection

Basic Specification



Option Specification



• Menu structure

1'ST ITEM	2'ND ITEM	3'RD ITEM or DATA	4'TH ITEM or DATA	5'TH ITEM or DATA
LENS	LENS TYPE	ELC		
	LENS MODE	NORMAL/DEBLUR		
	RETURN			
EXPOSURE	BRIGHTNESS	0~20		
	SHUTTER MODE	AUTO/MANUAL/ FLICKER		
	SHUTTER SPEED	1/30(25),1/60(50),1/120(100),1/250,1/500,1/1000,1/2000,1/4000,1/8000,1/16000,1/30000		
	DSS	OFF/X2/X4/X8/X16/ X32		
	AGC MAX	OFF,3dB~45dB		
	INITIAL			
	RETURN			
WHITE BALANCE	WB MODE	AUTO/AUTO EXT/PUSH LOCK/MANUAL		
	PUSH AUTO	[]		
	COLOR GAIN	0~20		
	KELVIN	LOW/MIDDLE/HIGH		
	RED GAIN	0~20		
	BLUE GAIN	0~20		
	INITIAL			
	RETURN			
WDR/BLC	MODE	OFF/BLC/HLC/WDR		
	LEVEL	0~20		
	X-POSITION	0~20		
	Y-POSITION	0~20		
	X-SIZE	0~20		
	Y-SIZE	0~20		
	COLOR	BLACK/WHITE/YELLOW/CYAN/GREEN/MAGENTA/RED/BLUE		
	INITIAL			
	RETURN			
DAY&NIGHT	MODE	AUTO/DAY(COLOR)/NIGHT(BW)		
	DWLL TIME	0~20 sec		
	D>N THRES	1~35		
	N>D THRES	0~34		
	INITIAL			

1'ST ITEM	2'ND ITEM	3'RD ITEM or DATA	4'TH ITEM or DATA	5'TH ITEM or DATA	
IMAGE	SHARPNESS	0~10			
	GAMMA	0.45/0.50/0.55/0.60/0.65/0.70/0.75			
	FLIP	OFF/H-FLIP/ V-FLIP/HV-FLIP			
	D-WDR	OFF/ON			
	DNR	OFF/LOW/MIDDLE/ HIGH			
	DZOOM	x1.0 ~ x16			
	DEFOG	OFF/ON		MODE	AUTO/MANUAL
				LEVEL	LOW/MIDDLE/HIGH
				RETURN	
	INITIAL				
RETURN					
SPECIAL	CAM TITLE	OFF/ON	EDIT PANEL		
			<div style="border: 1px solid black; padding: 5px; width: fit-content;"> ↓ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z ! ? 0 1 2 3 4 5 6 7 8 9 ~ () ^ S P > < B K </div>		
			POSITION	[POSITION EDIT]	
			RETURN		
	PRIVACY	OFF/ON		ZONE NO	0~15
				MASK MODE	OFF/ON
				X-POSITION	0~60
				Y-POSITION	0~34
				X-SIZE	0~60
				Y-SIZE	0~34
				COLOR	WHITE/YELLOW/ CYAN/GREEN/ MAGENTA/RED/ BLUE
				TRANSPARENCY	0%/33%/66%/100%
				INITIAL	
				RETURN	

4.0 Hidden Menu

4.1 Convert SDI Output Mode

STEP 1. ENTER

RS485 : Press [LEFT] → [LEFT] → [RIGHT] →[RIGHT] key.

AD-KEY : Press UP/DOWN/LEFT/RIGHT key 3 times.

STEP 2. SELECT

Press UP key 5 times : EX-SDI 2.1

Press DOWN key 5 times : EX-SDI 2.0

Press LEFT key 5 times : HD-SDI

Press RIGHT key 5 times : EX-SDI 1.0

STEP 3. CONFIRM

If the 'YES' is not checked within 30sec, the value returns to the previous setting.

5.1 Communication Specification

RateBaud	Default 9600bps
Data bits	8 bits
Stop bits	1 bits
CAM ID	Default "1"
Parity Check	None
Supported Protocol	PELCO-D, PELCO-P

5.2 PELCO Protocol for OSD Remote Control

PELCO-D

	BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7
UP KEY	0 x FF	Cam ID	0 x 00	0 x 08	0 x 00	0x0B~0x3F	ChkSum
DOWN KEY	0 x FF	Cam ID	0 x 00	0 x 10	0 x 00	0x0B~0x3F	ChkSum
LEFT KEY	0 x FF	Cam ID	0 x 00	0 x 04	0x0B~0x3F	0 x 00	ChkSum
RIGHT KEY	0 x FF	Cam ID	0 x 00	0 x 02	0x0B~0x3F	0 x 00	ChkSum
MENU ENTER KEY	0 x FF	Cam ID	0 x 00	0 x 07	0 x 00	0 x 5F	ChkSum

- Cam ID : 0x00 ~ 0x1F
- ChkSum : The Check Sum is the 8 bit (modulo 256) sum of the payload bytes (Byte2 ~ Byte6) in the Command.
- [0x0A~0x3F] means accept any value(between 0x0A ~ 0x3F) on command action.

PELCO-P

	BYTE 1	BYTE 2	BYTE 3	BYTE 4	BYTE 5	BYTE 6	BYTE 7	BYTE 8
UP KEY	0 x A0	Cam ID	0 x 00	0 x 08	0 x 00	0x0B~0x3F	0 x AF	ChkSum
DOWN KEY	0 x A0	Cam ID	0 x 00	0 x 10	0 x 00	0x0B~0x3F	0 x AF	ChkSum
LEFT KEY	0 x A0	Cam ID	0 x 00	0 x 04	0x0B~0x3F	0 x 00	0 x AF	ChkSum
RIGHT KEY	0 x A0	Cam ID	0 x 00	0 x 02	0x0B~0x3F	0 x 00	0 x AF	ChkSum
MENU ENTER KEY	0 x A0	Cam ID	0 x 00	0 x 07	0 x 00	0 x 5F	0 x AF	ChkSum

- Cam ID : 0x00 ~ 0x1F
- ChkSum : The Check Sum is an XOR sum of Byte1 ~ Byte7
- [0x0A~0x3F] means accept any value(between 0x0A ~ 0x3F) on command action.

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