

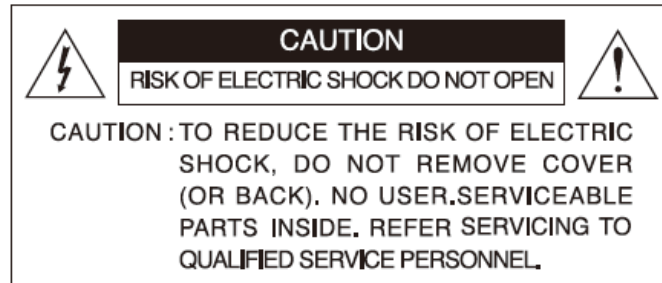


GNAT 1080p 60™ 1080p 60 fps HD-SDI Camera

Manual



July 22, 2014



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance(servicing) instructions in the literature accompanying the appliance

INFORMATION - This equipment has been tested and found to comply with limits for a Class A digital device, pursuant to part 15 of the FCC Rules & CE 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/her own expense.

WARNING - Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CAUTION - To prevent electric shock and risk of fire hazards:

Do NOT use power sources other than those specified.

Before You Start

This manual should help you in the installation and set-up of the camera; and we recommend that you carefully follow the instructions described. To ensure that your warranty remains valid, please read the manual carefully before using the camera.

Precautions

- Please DO NOT disassemble, modify or repair the camera. There are no user serviceable parts inside and disassembling the camera may void the warranty. For prevention of fire or electric shock, DO NOT remove screws or covers from the camera.
- Operation in a wet environment is NOT recommended. The camera SHOULD NOT be exposed to rain or moisture.
- To prolong the product life and to protect the camera's CCD, do not point the camera directly at the sun or a strong spotlight. This may result in CCD blooming and permanent damage.
- DO NOT operate the camera beyond the operation temperature range stated and AVOID usage in conditions exceeding 90% humidity.
- To prevent damage to the camera's circuits, DO NOT use an unregulated power supply source.
- Use soft materials such as a lens tissue or cotton tipped applicator with ethanol for CCD faceplate cleaning ONLY when necessary and AVOID contact with fingers or any hard object. Do not use solvent, abrasives or detergent when cleaning the camera.
- The Warranty will be voided for improper use of the camera caused by the user, or for damage caused by other equipment due to negligence.

Warranty

Viewbits warrants the original components free of defects for one year from the purchase date. This warranty covers failures and damage due to defect, which may occur during normal use. It does not cover damages or failure resulting from mishandling, abuse, misuse or modification.

To return a product for repair, call Computer Modules, Inc. at 1-858-613-1818 for a Return Material Authorization (RMA) number. The product should be carefully packaged and shipped prepaid showing the RMA number on the shipping label. Include a short statement of the problem; return address information and the telephone number of a technical contact for further information. In the case of non warranty repairs, a purchase order for repair charges must also be included.

1. Main Features

▶ 1/3" CMOS sensor

2.2M Pixels (Total) / 2.1M Pixels (Active)

▶ Full HD Resolution

1920x1080@30/25p, 1920x1080@60/59.94/50i

1280x720@30/25p, 1280x720@60/59.94/50p,

1920x1080@60/59.94/50p

▶ WDR (Wide Dynamic Range)

WDR allows a camera to filter the intense back light surrounding a subject and thus enhances the ability to distinguish features and shapes on the subject.

▶ DNR (Digital Noise Reduction, 2D/3D-NR)

DNR technology provides outstanding clear images by reducing noise. DNR technology has excellent disk-saving effect. The GNAT 1080p 60 supports brilliant DNR technologies like DNR, 3D-NR and 2D+3D.

▶ AGC (Automatic Gain Control)

AGC is a circuit that automatically adjusts the incoming signal to the proper level for display or recording and the sensitivity of pick-up object to render the most pleasing images. It improves performance in low light conditions.

▶ 2 Auto (AE/AWB) Control

Slow Shutter control (Sens-Up), Color temperature Range (1800K ~ 10500K).

▶ Dynamic Motion Detection (8 separable areas, Up to 1980-blocks, variable block size control)

Motion can be detected and displayed in appointed area. It is possible to set up motion detection zones as desired.

▶ Privacy Zone Masking (8 Polygon windows)

The privacy zone function makes it possible to mask specific areas of the scene from view.

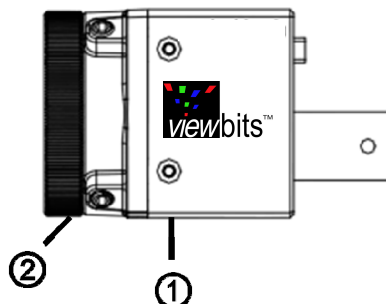
▶ Output

3G-SDI / HD-SDI (NTSC / PAL) with 292M

2. Name and Function of Each Part

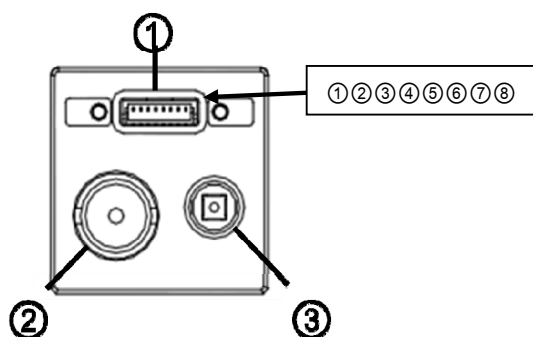
2.1. GNAT 1080p 60

Side



Name	Function
① Holder	For attaching a bracket to the camera
② Lens Mount	Adaptor ring is tightened for C or CS mount lens

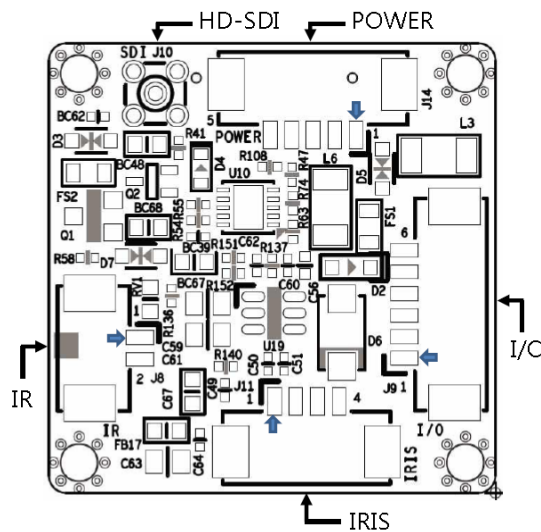
Rear



Name	Function
① RS-485	① RS485_A_D+ ② RS485_A_D-
I/O Port	③ Trigger Signal Input (Act: High) (Trigger Input Image Masking or Freeze/Play selectable) ④ Motion/Trigger Common GND ⑤ - ⑥ Motion Signal Output (Act: High)
Power	⑦ DC Power (+) ⑧ DC Power (-) Ground (DC12V ~ 24V)
② HD-SDI Video Output	BNC connector for HD-SDI video signal output
③ SETUP Switch	Camera function control switch Press and hold the switch for more than 2 seconds, then the main menu will appear on the screen.

	◀/▶	Move from left side to right side, then the menu is moved to upper menu or the parameter is changed
	▲/▼	Move up and down, then the menu is moved up and down
	■	Press and the feature is set Press it, then it is moved to sub menu

2.2. Connectors

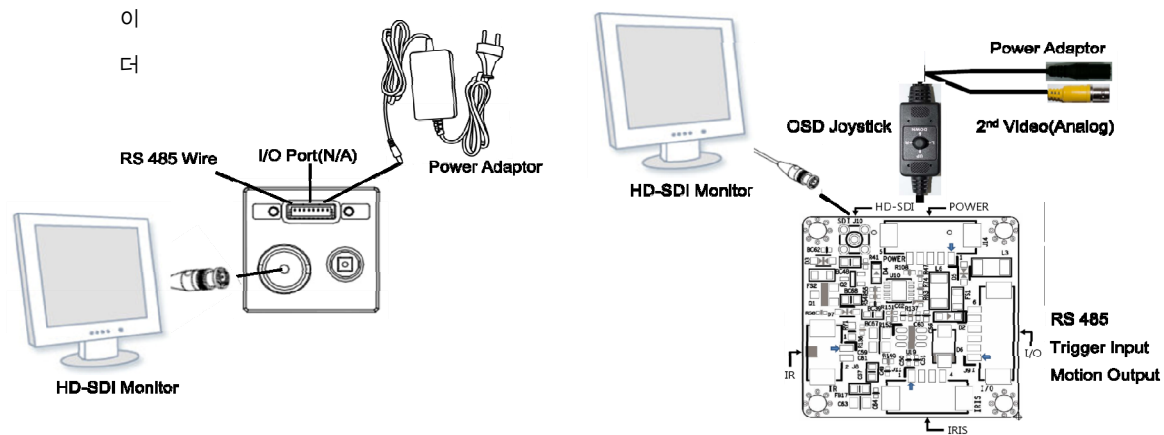


I/O	
Pin. 1	RS485_A_D+
Pin. 2	RS485_B_D-
Pin. 3	TRIGGER Signal Input(Act: High)
Pin. 4	MOT/TRI Common GND
Pin. 5	-
Pin. 6	MOTION Signal Output(Act : High)

IRIS		POWER		IR	
Pin. 1	DMP+	Pin. 1	Main DC12~24V	Pin. 1	Brushless Motor Driver A OUTPUT
Pin. 2	DMP-	Pin. 2	Main GND	Pin. 2	Brushless Motor Driver B OUTPUT
Pin. 3	DRV+	Pin. 3	CVBS_OUT		
Pin. 4	DRV-	Pin. 4	AD_KEY		
		Pin. 5	DC GND		

Connector Part Number(Maker)	
HD-SDI	73415-1471(MOLEX)
IR	53398-0271(MOLEX)
IRIS	53398-0471(MOLEX)
POWER	53398-0571(MOLEX)
I/O	53398-0671(MOLEX)

3. Other Device Connection



3.1. Monitor Connection

Connect the HD-SDI output of the monitor to the BNC connector of the camera by coaxial cable. The camera connector consists of MMCX (Board side) and BNC (Monitor side). If the monitor does not support HD-SDI output, you must use an HD-SDI converter.

The video output type can be set as NTSC or PAL.

3.2. Video Cable Connection

Refer to the following table regarding the cable. If the distance between the camera and the monitor is over maximum video transmission distance, a separate video amp is required.

* Maximum HD-SDI transmission distance depends on cable manufacturer and installation environment.

Maximum Transmission Distance	Cable Requirement
100 ~ 140m	5C2V, 75ohm
200m	L-6CHD, 75ohm (HDTV-SDI Cable)

3.3. Power Connection

For easy installation, a special power cable to connect a DC jack type of power adapter is provided. Be sure the camera power is turned OFF before connecting the camera to the device.

* Camera operation guarantees power: DC 12V ~ 24V $\pm 10\%$

3.4. RS-485 Connection

Using RS-485 communication, it is possible to control the OSD menu and some features in an external device. Regarding features to control by RS 485, refer to register control document.

3.5. I/O Port Connection

Using Input Port, User can get triggered captured image with image marking and motion output signal. Or according to firmware version, user can get freeze/play image.

4. OSD Menu

Press the OSD joystick of camera's rear side 1~2 seconds. The OSD menu will show on screen.

1. LENS	DC	INDOOR (Default) , OUTDOOR	Select DC Iris Lens (Not supported)
	P-IRIS	AUTO, MANUAL	Select P-Iris Lens (Not supported)
	MANUAL (Default)		Select Manual Iris Lens
	VIDEO		Select Video Iris Lens use (Not supported)
2. EXPOSURE	SHUTTER	AUTO (Default)	Select Auto Shutter Speed
		FLK	Select in Flickering
		1/30~1/50000, x2 ~ x30	Shutter Speed Manual Control
	AGC	Level 1-15	Adjust Auto Gain Level
	SENS-UP	OFF, AUTO (Default)	The camera automatically detects the light level in night or dark area
		x2~x30	Select the level of desired Sens-up
	BRIGHTNESS	0 ~ 100 (Default: 40)	Adjust the screen brightness
	D-WDR	OFF (Default) , LOW, MIDDLE, HIGH	Adjust the level of dynamic range
3. BACKLIGHT	DEFOG	OFF (Default) , ON	Adjust the level of defog function Position/Size/Gradation adjustable
	OFF (Default)		
	WDR	GAIN	Low / Middle / High
		WDR OFFSET	Select the level 0~255
	BLC	GAIN	High / Middle / Low
		AREA	Select Position & Size
		DEFAULT	BLC Factory Reset
	HSBLC	SELECT	Select the area (AREA1~AREA4)
		DISPLAY	Select the area maintain/remove (ON/OFF)
		LEVEL	Select the level 0~100
		MODE	Select the activation time(ALL DAY / NIGHT)
		BLACK MASK	Select the black mask (ON/OFF)
		DEFAULT	HSBLC Factory Reset

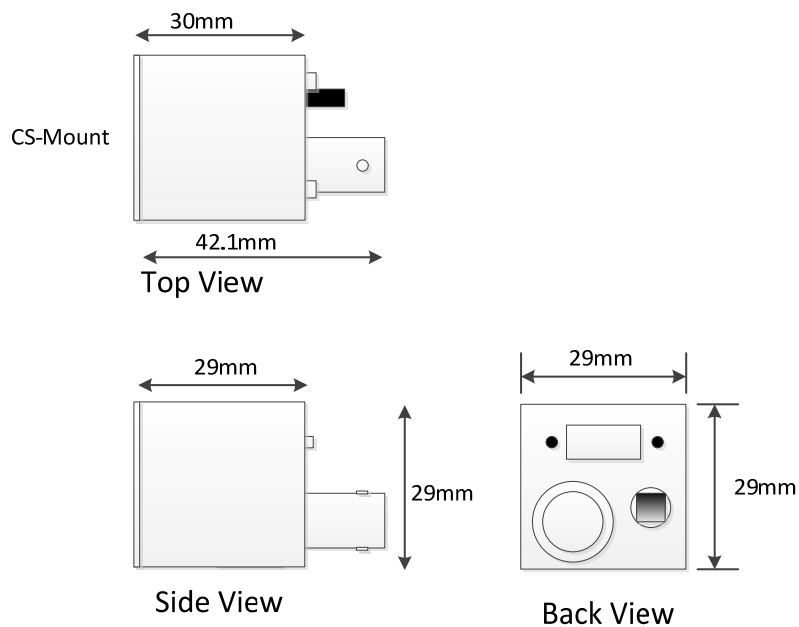
4. WHITE BAL	ATW (Default)	Auto Tracking White Balance			
	AWC → SET	Set the real environment white balance. Use the white color object and select SET button			
	INDOOR	Select this for indoor application			
	OUTDOOR	Select this for outdoor application			
	MANUAL	Select this to fine-tune White Balance manually			
5. DAY & NIGHT (H/W- Only GNAT OEM)	AUTO	DELAY	Select the duration time about changing the day/night mode		
		D → N (AGC)	Select the percent about changing Day to Night mode(AGC based)		
		N → D (AGC)	Select the percent about changing Night to Day mode(AGC based)		
	COLOR	Select the color mode			
	B/W	BURST	Select the bust signal on/off		
		IR SMART	Adjust LEVEL(0~15) / AREA(Position & Size)		
		IR LED	Select On/Off(Not Available)		
IR PWM		Select the level 0~100(Not Available)			
6. NR	2DNR		Select On/Off		
	3DNR	SMART NR	Select the Smart NR mode		
		LEVEL	Select the level of 3DNR mode(0~100)		
		START. AGC	3DNR function Start percent(AGC based)(0~100)		
		END. AGC	3DNR function End percent(AGC based)(0~100)		
7. SPECIAL	CAM TITLE		Enter the camera title (ON/OFF)		
	D-EFFECT	FREEZE		Freeze the image (ON/OFF)	
		MIRROR	MIRROR		Mirror the image (ON/OFF)
			V-FLIP		Flip the image vertically
			ROTATE		Flip the image horizontally
		D-ZOOM		x2 ~ x62 / PAN&TILT / DEFAULT	
		SMART D-ZOOM		AREA 1/2 / DISPLAY / SENSITIVITY(0~60) / D-ZOOM(x2~x62) TIME(0~26) / DEFAULT(Not Available)	
		NEG. IMAGE		Select the negative image (ON/OFF)	
		DIS		Not Available	
	MOTION	SELECT		Select the area 1 ~ 4	
		DISPLAY		Adjust the position & size (ON/OFF)	
		SENSITIVITY		Select the sensitivity of motion recognition(0~100)	
		MOTION VIEW		Display masks on the motion detected area(ON/OFF)	
		DEFAULT		Motion Factory reset	
	PRIVACY	SELECT		Select the area (1~8)	

		DISPLAY	Display the privacy area on the screen (ON/OFF)
		COLOR	Select the color 0~15
		TRANS	Transfer 0~3
		DEFAULT	Privacy Factory reset
	LANGUAGE	ENG,JPN,CHN1,CHN2, KOR, GER, FRA, ITA, SPA, POL, RUS, POR, NED, TUR, HEB, ARB	
	DEFECT	LIVE DPC	Select the dead pixel compensation mode in real time (AUTO/OFF) LEVEL (0~100)
		STATIC DPC	Select the dead pixel compensation mode in static points (ON/OFF) START / LEVEL (0~60) / SENS-UP (x2 ~ x30)
		BLACK DPC	Select the dead pixel compensation mode in black points (ON/OFF) START / LEVEL (0~255) / DIFT. TH (0~255)
	RS485	CAM ID	Select the number of camera (0~255)
		ID DISPLAY	Select the display of CAM ID (ON/OFF)
		BAUDRATE	Select the baud rate (2400~38400)
	VERSION	Display the current Camera Version	
	8. ADJUST	SHARPNESS	
MONITOR		LCD	GAMMA / ADAPT. LEVEL / BLUE GAIN / RED GAIN
		CRT	BLACK LEVEL / BLUE GAIN / RED GAIN
LSC		Select Lens Shading Compensation Scan (ON/OFF)	
RESOLUTION		FULL-HD (Default) / HD	
FRAMERATE		A- Sensor Scanning 60P, B- Sensor Scanning 30P (Default) 60/30 & 50/25 depends on NTSC/PAL selection in advance	
		A-30/25P / A-60/59.94/50I(Only Full HD)	
		B-30/25P / A-60/59.94/50P	
VIDEO.OUT	Select NTSC/PAL		
9. RESET	FACTORY	Reset the camera settings to the factory defaults	
10. EXIT	Exit the Main SETUP menu (or Hidden Menu selection)		

5. Specifications

Items	Description
Image Sensor	1/2.8" 2.38Megapixel Sony Exmor CMOS Sensor
Scanning System	Progressive, Interlace
Effective Pixels Number	1,920(H) x 1,080(V), 2.07M Pixels (Full-HD)
Total number of pixels	1,952(H) x 1,116(V), 2.18M Pixels (Full-HD)
Lens Mount	C/CS Mount (S mount DC Auto Iris D/N – IMC-922S only)
Video Output Mode	HD-SDI: 1920x1080p (30/25 fps), 1920x1080i (60/59.94/50 fps), 1280x720p (30/25 fps) 1280x720p (60/59.94/50 fps) 3G-SDI: 1920x1080p (60/59.94/50 fps)
Video Output Level	HD-SDI, 3G-HDI / 1.0 Vp-p (75Ω, Composite); NTSC/PAL (Selectable)
Min. Illumination	Color: 0.2Lux @ F1.2 / B/W: 0.01@F1.2
OSD	Built-in
Electronic Shutter Speed	Auto / Manual (1/30 ~ 1/50,000)
White Balance	ATW / AWC / Indoor / Outdoor / Manual
Back Light Compensation	Off / WDR / BLC / HSBLC
D-WDR/ACCE	Low / Middle / High / Off, 0~15 steps
AGC	0~15 steps
Adjust	SHARPNESS / MONITOR / OSD / LSC / VIDEO OUT (NTSC/PAL)
Language	ENG, JPN, CHN, KOR, GER, FRA, ITA, SPA, POL, RUS, POR, NED, TUB, HER, ARB (Directional Switches)
Day & Night	Auto / B.W / Color / EXT (Selectable)
2D/3D-NR	2DNR / 3DNR / SMART NR
Digital Zoom / PIP	On / Off (x2 ~ x64)
Privacy Masking	On / Off (8 Zone Selectable)
Motion Detection	On / Off (4 Zone Selectable)
Defect	LIVE DPC / STATIC DPC / BLACK DPC
Defog	Low / Middle / High / Off (Position/Size- User Setting)
Sens - up	Auto (Selectable limit ~ x30) / Off
D – EFFECT	Freeze / Mirror / D-Zoom / NEG.IMAGE
Protocol	Pelco-D / Pelco-P
Communication	RS-485 [Baud Rate: 2400~38400]
Power	DC12V ~ 24V ±10%, 2.3W (1080p/30 fps), 3.3W(1080p/60fps)
Operating / Storage Temperature	-5°C ~ +50°C (Humidity: 0%RH ~ 80%RH) -20°C ~ +60°C (Humidity: 0%RH ~ 90%RH)
Dimensions	29mm X 29mm X 29mm -- 1.14 x 1.14 x 1.14 inches (Connector, C/CS mount excluded)
Weight	Approximately 40 grams (1.41 ounces)

6. Dimensions



7. For Sales Information and Technical Support Contact:



Division of Computer Modules, Inc.
11409 West Bernardo Court
San Diego, CA, USA 92127

Phone: (858) 613-1818
Fax: (858) 613-1815
www.viewbits.com