



UHD 6G-SDI POV Camera

UHD6G-200

OPERATION GUIDE



CAUTION:

RISK OF ELECTRIC SHOCK. DO NOT OPEN.



CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK)

NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING



This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.



PRECAUTION

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

WARNING

To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

- Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
- $2. \quad Incorrectly connecting the power supply or replacing battery may cause explosion, cause excessive heat or fire$
- $3. \quad \text{Securely plug the power cord into the power receptacle.} \\ \text{Insecure connection may cause fire.}$
- Do not place conductive objects (e.g. screw drivers, coins, metal items, etc.) or containers filled with water on top of the camera.
 Doing so may cause personal injury due to fire, electric shock, or falling objects.

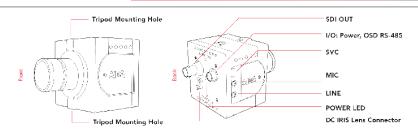
Warning continues

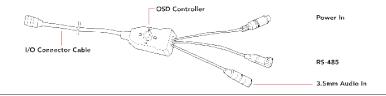
- 5. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock
- If any unusual smells or smoke come from the unit, stop using the product. Immediately disconnect the power source
 and contact the service center. Continued use in such a condition may cause fire or electric shock.
- 7. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.
- $8. \ \ When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.$

PRECAUTION

Please read this Operation Guide before installing and using the camera & retain this copy for your reference.

- Always follow the instructions in the operations guide when applying power. Fire and equipment damage can occur if power is
 applied incorrectly. For the correct power supply, refer to the specifications page.
- Do not use camera if fumes, smoke or a strange odor is emitted from the camera, or if it seems not functional correctly. Disconnect the power source immediately and consult with your supplier.
- Do not use the camera in extreme environments where high temperatures or high humidity exists. Use the camera under conditions where temperatures are between 32°F ~ 104°F, and humidity is below 90%.
- 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.
- Try to avoid fluorescent light reflections, unstable light conditions, direct pointing toward the sun. Use caution when operating the camera in the vicinity of spotlights or other bright lights and light reflecting objects.
- 6. To prevent damage, do not drop the camera or subject it to strong shock or vibration.





FEATURES

- 4K UHD 1/2.5 Progressive Scan CMOS sensor captures sharp and vivid UHD video even under low light conditions.
- Advanced digital imaging processor provides vivid and detailed images by utilizing Dynamic Range, Auto White Balance, and Noise Reduction.
- · Superb motion-compensated temporal noise reduction filter for motion video without blurring.
- OSD control breakout cable with power input and RS-485 for remote communication.
- · Flawlessly relays multi-channel embedded audio via SDI output.
- · Interchangeable lens design compatible with CS and C mount lenses.
- · Perfectly suited for broadcast, pro audio/video, and security.
- · Conforming with SMPTE 292M, 424M, and 2081-10.
- Versatile, compact, and rugged design.

OSD MENU



- Move the Cursor Up/Down to Choose Menu
 - To move from item to item in the menu, move the joystick to the Up/Down.
- 2. Change the Value
 - To change the value of the selected item, move the joystick to the Left/Right.
- 3. Shift to the Sub Menu of the Chosen Menu
 - To go into sub menu, press SEL key. The menu items with > always have its sub menu.

EXPOSURE



EXPOSURE	
*AE MODE	SHUT FIX
SHUTTER IRIS	AUTO
AGC	
AGC MAX	HIGH
SENS UP	OFF
AE BRIGHT	6 (
IRIS SPEED	3
FLK CONTROL	AUT0
LENS MODE	INDOOR
RETURN	

AUTO

Auto mode will adjust the exposure level automatically.

Detailed fine tuning options are available under this menu.

- · AGC MAX : OFF, LOW, MIDDLE, HIGH, DMIN, DMID, DMAX
 - "AGC MAX" sets the maximum gain value to control the video noise caused by Auto Gain Control
- SENS UP : OFF, x2 ~ x10

"SENS UP" mode controls the digital slow shutter to allow extra light into the camera and adjust the picture quality.

AE BRIGHT: 0~20

Auto Exposure brightness level can be adjusted.

SHUT FIX

 $SHUT\,FIX\,mode\,provides\,more\,detailed\,shutter\,speed\,option.$

All other controls are tuned for the selected shutter speed.

- SHUTTER: AUTO, 1/30 ~ 1/10,000 (Shutter speed can be set)
- · AGC MAX : OFF, LOW, MIDDLE, HIGH, DMIN, DMID, DMAX

"AGC MAX" sets the maximum gain value to control the video noise caused by

SENS UP: 0~20

"SENS UP" mode controls the digital slow shutter to allow extra light into the camera and adjust the picture quality.

AE BRIGHT: 0~10
 Auto Exposure brightness level can be adjusted

EXPOSURE

EXPOSURE	
*AE MODE	AGC FIX
SHUTTER	
IRIS	
AGC	AUTO
AGC MAX	HIGH
SENS UP	
AE BRIGHT	6
IRIS SPEED	3 (
FLK CONTROL	AUT0
LENS MODE	INDOOR
RETURN	

AGC FIX

AGC FIX mode provides more detailed gain option.

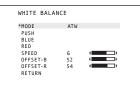
All other controls are tuned for the selected gain value.

- AGC: AUTO, 0dB ~ 27dB, d2X ~ d9X
- AGC MAX : OFF, LOW, MIDDLE, HIGH, DMIN, DMID, DMAX
 - "AGC MAX" sets the maximum gain value to control the video noise caused by Auto Gain Control.
- AE BRIGHT: 0~10

Gain level can be set

- Auto Exposure brightness level can be adjusted.
- IRIS SPEED: 0 ~ 5
 - Electronic Iris speed can be controlled. (DC Iris lens only)
- · LENS MODE: INDOOR, OUTDOOR, MANUAL
 - Lens setting will be optimized for the selected environment. (DC Iris lens only)
- · FLK CONTROL: AUTO, ON, OFF
- "FLK CONTROL" mode provides a proper image sensor frequency to match the power frequency in order to minimize video flicker.

WHITE BALANCE



ATW

Auto trace white mode will adjust white balance within 1,900°K ~ 11,000°K temperature.

- SPFFD: 0 ~ 7
- White balance adjust speed can adjusted.
- OFFSET-B: 0 ~ 100
- "OFFSET-B" adjusts Blue gain within the range of 0 to 100.
- OFFSET-R: 0 ~ 100

"OFFSET-R" adjusts Red gain within the range of 0 to 100.



ONE PUSH

One push mode is used if AWB or ATW cannot produce the proper white balance.

Place a white paper in front of the camera when using the one push mode to self adapt.

- PLISH
 - Press Select button to enable "ONE PUSH" white balance adjustment. Place a white paper in front of the camera when using the "ONE PUSH" mode to self-adopt.
- * Camera provides a wide range of white balance options.

 Check your color temperature before adjusting this mode.

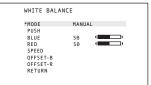
WHITE BALANCE

WHITE BALANCE *MODE INDOOR PUSH BLUE RED SPEED OFFSET-B 52 OFFSET-R 54 **ETURN**

INDOOR

"INDOOR" mode will adjust white balance to indoor lighting conditions.
OUTDOOR

"OUTDOOR" mode will adjust white balance to outdoor lighting conditions.



MANUAL

"MANUAL" mode will adjust white balance manually.

- BLUE 0 ~ 100
- Select blue gain within the range of 0 to 100.
- RED 0 ~ 100

Select Red gain within the range of 0 to 100.

DAY & NIGHT

RETURN

*MODE DAY (COLOR)
NIGHT COLOR OFF

Adjust color or B&W setting from this menu.

MODF : DAY(COLOR), NIGHT(B&W)

Set camera to either color mode or R&W mode

· NIGHT COLOR: ON, OFF

When "NIGHT COLOR" is turned ON, camera stays on color mode even

"NIGHT(B&W)" is selected from the MODE.

· COLOR BURST: ON, OFF

Color burst signal ON or OFF can be set for CVBS signal. (Not applicable)

DNR

NOTSE REDUCTION

RETURN

*MODE 2D + 3D DNR LEVEL AUTO

NOISE REDUCTION

Camera noise level can be adjusted from this menu.

- DNR MODE: OFF, 2D, 3D, 2D+3D
- Digital noise reduction can be applied from this menu.
- DNR LEVEL : AUTO, LOW, MIDDLE, HIGH
- Noise reduction level can be adjusted from this menu.
- DNR APERTURE: 0 ~ 4

Motion artifacts tightness can be adjusted.

0 = Most ghost artifact 4 = Least ghost artifact

PRIVACY

RETURN

PRIVACY MASK ON *MODE TYPE SOHARE MASK NO MASK 1 DTSPLAY COLOR BLACK POLY PIXEL POSITION-X POSTTION-Y STZE-X 28 STZE-Y 11 DEFAULT

Privacy zone can be setup from this menu.

MODE: ON, OFF

Enable "PRIVACY ZONE" ON or OFF

TYPE: SOUARE, POLYGON

Select privacy zone shape.

MASK NO: MASK1 ~ MASK8

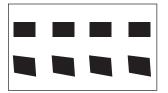
Select privacy zone mask number.

DISPLAY: ON, OFF

Turn ON or OFF the selected privacy mask zone.

COLOR: WHITE, GREEN, BLUE, RED, CYAN, MAGENTA, YELLOW, GRAY-1 ~ 6,

MOSAIC, BLACK. (Select privacy zone mask color)



POLY SELECT: 1- TOPP, 1- BOTTOM, R- TOP, R-BOTTOM

Change the shape of the polygon by selecting the corner of the polygon.

POSITION-X & POSITION-Y

Change the size of the selected corner from "POLY SELECT" menu.

SIZE-X & SIZE-Y

Change the size of the privacy square.

DEFAULT

Set privacy zone to default value.

EFFECT



Camera image control can be adjusted from EFFECT menu.

LENS SHADING: ON, OFF

Optical vignetting issue can be corrected from this menu.

GAMMA CORRECT: ON, OFF (1.0)

Gamma level can be adjusted.

- Y LUT EXTEND: UNIFORM, EXTEND-F2C
 Tuning and engineering purpose LUT correction.
- BYLUT XSAMPLE: 64x256LUT, 32x256LUT, 64x256LUT, 128x256LUT, 256x256LUT
 Tuning and engineering purpose LUT correction.
- RGBLUT XSAMPLE: 64x256LUT, 32x256LUT, 64x256LUT, 128x256LUT, 256x256LUT
 Tuning and engineering purpose LUT correction.

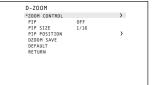
FFFFCT LENS SHADING ON GAMMA CORRECT ON *CONTRAST 11 BRIGHTNESS 11 SATURATION HIIE 10 EDGE ENHANCE AUTO SATURATION MIDDLE AUTO EDGE ΩN DEFAILT RETHEN

- CONTRAST: 0 ~ 20 (Contrast level can be adjusted)
- BRIGHTNESS: $0 \sim 20$ (Brightness level can be adjusted)
- · SATURATION: 0 ~ 20 (Saturation level can be adjusted)
- HUE: 0 ~ 20 (Hue level can be adjusted)
- EDGE ENHANCE: 0 ~ 20 (Image sharpness level can be adjusted)
- · AUTO SATURATE: OFF, LOW, MIDDLE, HIGH

Decrease saturation automatically when noisy scene is detected.

- AUTO EDGE: ON, OFF
 Decrease edge enhancement (sharpness) automatically when noisy scene is detected.
- · DEFAULT: See Effects menu to default value.

SPECIAL		
*DZOOM	OFF	
DEFOG	OFF	
DWDR	OFF	
MOTION DETECT	OFF	
BACKLIGHT	OFF	
BINNING	OFF	
DEFECT PIXEL	ON	>
DISP. FUNCTION		>
FLICKER DETECT	OFF	
PRIVACY		>
RETURN		



Camera special functions can be adjusted from SPECIAL menu.

D ZOOM: ON, OFF (Digital Zoom and PIP function can be enabled from this menu)

- ZOOM CONTROL: RATIO, POSITION, RETURN
 - Adjust the digital zoom ratio and position.
 - Use LEFT / RIGHT button to adjust the ratio, then press select.

 ${\it USE\ LEFT\ /\ RIGHT/\ UP\ /\ DOWN\ button\ to\ adjust\ the\ image\ position,\ then\ press\ select.}$

- Press select to exit.
- PIP : ON, OFF (Turn ON or OFF the PIP window)
- PIP SIZE: 1/16, 1/25 (Change the size of PIP window)
- PIP POSITION : POSITION, RETURN (Adjust the PIP window location)
 - USE LEFT / RIGHT/ UP / DOWN button to adjust the image position, then press select. Press select to exit.
- · DEFAULT: Set privacy zone to default value.

SPECIAL



DEFOG: ON, OFF, AUTO

"DEFOG" menu improves foggy image.

- STRENGTH: 0 ~ 16
 Change defog strength.
- THRESHOLD:0~3

Threshold value sets minimum sensitivity value for automatic defog control. Higher value makes defog-on control reluctant.

AUTO LEVEL: LOW, MID, HIGH
 Auto level value sets maximum strength value for automatic defog control.
 Higher value makes defog effect to be stronger.

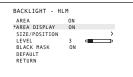
BACKLIGHT - BLC

*BLC
ON
SIZE/POSITION
DISPLAY
ON
DEFAULT
RETURN

DIS: Digital image stabilization can be turned ON or OFF.

BACK-LIGHT: OFF, BLC, HLM - Camera back-light compensation can be adjusted. BLC: OFF, ON - BLC enables back light compensation.

- SIZE/POSITION: SIZE, POSITION, RETURN Adjust BLC area window size.
- DISPLAY : OFF, ON
- BLC area display can be turned ON or OFF
- · DEFAULT : Set BLC menu to default value.



HLM: OFF, ON

HLM can be adjusted.

- · AREA DISPLAY: ON, OFF
- HI M AREA DISPLAY can be turned ON or OFF
- SIZE/POSITION: SIZE, POSITION, RETURN Adjust BLC area window size.
- LEVEL · 0 ~ 20

Amount of masking area can be adjusted.

- BLACK MASK: OFF, ON
 - Masking area highlight can be turned ON or OFF.
- . DEFAULT: Set HLM menu to default value.

DEFECT PIXEL *STATIC PROGRESS PRESS OK SDPC UPDATE PRESS OK

SDPC CLEAR PRESS OK RETHEN

BINNING: OFF, ON

Binning can be turned ON or OFF.

DEFECT PIXEL: OFF, ON, ON (FIXED), STATIC

Defective Pixel Correction feature can be operated. It is turned ON by default and will run both dynamic and static DPC function.

PECIAL

DISPLAY FUNCITON

*FREEZE OFF
MIRROR MIRROR
IMAGE EFFECT NEGATIVE
ROTATION ROT
PICTURE STYLE

DISPLAY FUNCTION : OFF. ON

Adjust image display features from this menu.

FREEZE : OFF. ON

Image freeze can be turned ON or OFF.

- . MIRROR: OFF, MIRROR, V-FLIP, BOTH(H/V) Image mirror or flip can be operated.
- IMAGE EFFECT: OFF, NEGATIVE, GREY MODE, REDDISH-1 ~ 4, BLUISH-1 ~ 4, GREENISH-1 ~ 4.ROTATION: OFF, ROT. L 1:1

Several color effects can be applied.

- ROTATION: OFF, ROT_L FULL, ROT_L 1:1, ROT_R Full, ROT_R 1:1
 Image can be rotated either left or right side.
- PICTURE STYLE: OFF, STANDARD, VIVID, CLEAR, VIVID CLEAR, NEUTRAL Different types of picture style can be applied.

SPECIAL

RETURN

DEFOG OFF
DIS OFF
BACKLIGHT OFF
BINNING
DEFECT PIXEL OFF
DISP, FUNCTION RT ZOOM
**FLICKER DETECT ON DETIINN

FLICKER DETECT: OFF, ON

 $\hbox{\it "FLICKER DETECT"}\ mode\ provides\ a\ proper\ image\ sensor\ frequency\ to\ match\ the\ power\ frequency\ in\ order\ to\ minimize\ video\ flicker.$

SETUP

SETUP

**CAM TITLE OFF

RS485

**HERU COLOR

**FATCHORY RESET

SYSTEM INFO

OUTPUT FORMAT 1080P60

RETURN

Camera setup can be adjusted from this menu.

CAM TITLE : OFF, ON

Camera title can be turned ON or OFF.

RS-485:

VISCA communication control can be adjusted.

• CAMID:0~7

Camera ID can be setup.

· ID DISPLAY : OFF, ON

Camera ID can be setup.

BAUDRATE: 2400, 4800, 9600, 19200, 38400
 Camera baudrate can be set.

SYSTEM INFO: ON, OFF, AUTO

Camera information can be found under this menu.

OUTPUT FORMAT: ON, OFF, AUTO

Camera resolution and frame rate can be set

MENU COLOR:

OSD menu color can be adjusted.

Supported formats are:	4K2160P - 30 / 29.97	1080P - 60 / 59.94	10801 - 60 / 59.94 / 50
* 1080p by default	25 / 24	50 30/ 29.97 / 25 / 24	720P - 60 / 59.94 / 50

AUDIO

Audio input [MIC or LINE] can be selected, and level can be adjusted under this menu.

VIDEO

Image Sensor 1/1.7" Progressive CMOS

Sensor Size Diagonal 9.93mm(17:9)

Effective Pixels Horizontal: 4096, Vertical: 2160

Pixel Size 1.85 μm x 1.85 μm

Resolution 4096 x 2160, 3840 x 2160,

1920 x 1080, 1280 x 720

Resolution Rate 4K (4096 X 2160) 60/59.94/50/30/29.97/25/24

3840p 60/59.94/50/30/29.97/25/24p

1080p 60/59.94/50/30/29.97/25p/24p

1080i 60/59.94/50i

720 60/59.94/50p HDMI 2.0

Output HDMI 2.0 Color Space 4:2:2 (YCbCr) 10bit LENS

C/CS Mount

(with 4K 3.6mm - 11mm varifocal lens)

AUDIO INPUT

Input 3.5mm TRS Stereo

Mic-in & Line in over I/O Cable

Sample Rate 16/24/32 Bits

STANDARD

SMPTE SMPTE 292M, SMPTE 424M

PHYSICAL

Camera Control RS-485 VISCA, OSD Button

Operation Temp 15° F - 120° F

Dimension 51mm x 51m x 102mm / 2.01" x 2.01" x 4.01"

Weight 384g / 0.84lbs
Power 12VDC (+9 - +15VDC)

*Specification are subject to change without notice.

DUESTIONS

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Operating Hours: Mon-Fri | 8:00am - 5:00pm PST







- When this crossed out wheel bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
 All electrical and electronic products should be disposed of separately from the municipal waste stream in accordance to laws designated by the government or the local authorities.
 The correct disposal of your disposal or will not previously only the provision of the product of the product of the provision o
- 4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product

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 inter reference in which case the user will be required to correct the