



UHD6G-200

Micro UHD 6G-SDI EFP Camera

Operation Guide

Ver. 1.0 / MAR 2018



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.

1. 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. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.
3. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause excessive heat or fire.
4. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.

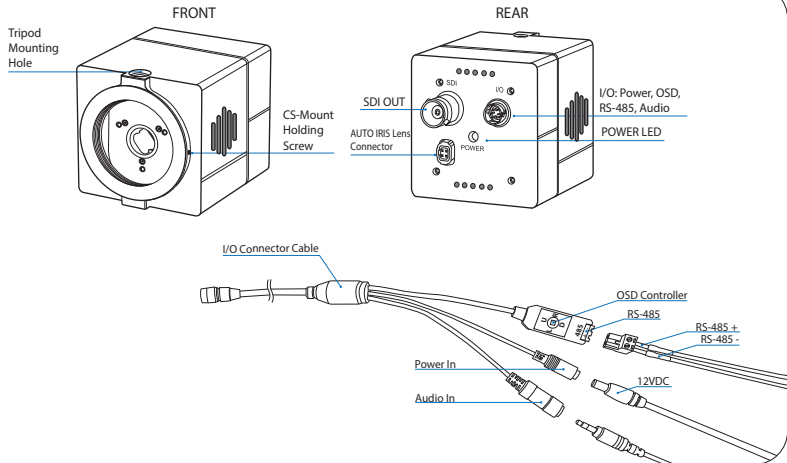
5. When installing the camera, fasten it securely and firmly. A falling camera may cause personal injury.
6. Do not place conductive objects (e.g. screw drivers, coins, metal items, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire, electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
8. 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.
9. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.
10. 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.

1. 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.
2. 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.
3. 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%.
4. 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.
5. 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.

UHD6G-200



- 4K UHD 1/2.5 Progressive Scan CMOS sensor captures sharp and vivid UHD video even under very 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 audio 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

MAIN MENU

* EXPOSURE	>
WHITE BALANCE	>
DAY & NIGHT	>
DNR	>
PRIVACY	>
EFFECT	>
SPECIAL	>
SETUP	>
EXIT	

❶ Move the Cursor Up/Down to Choose Menu

To move from item to item in the menu, move the joystick to the Up/Down.

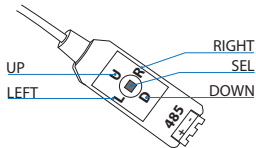
❷ Change the Value

To change the value of the selected item, move the joystick to the Left/Right.

❸ 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

* AE MODE AUTO

SHUTTER

IRIS

AGC

AGC MAX

HIGH

SENS UP

OFF

AE BRIGHT

6

IRIS SPEED

3

LENS MODE

INDOOR

FLK CONTROL

AUTO

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.

EXPOSURE

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

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 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** : 0~10

Auto Exposure brightness level can be adjusted.

EXPOSURE

*** AE MODE** AGC FIX

SHUTTER

IRIS

AGC

AUTO

AGC MAX

HIGH

SENS UP

AE BRIGHT

6



IRIS SPEED

3



LENS MODE

INDOOR

FLK CONTROL

AUTO

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*Gain level 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 Auto Gain Control.***➤AE BRIGHT** : 0~10*Auto Exposure brightness level can be adjusted.*

EXPOSURE

EXPOSURE

* AE MODE AUTO

SHUTTER

IRIS

AGC

AGC MAX

HIGH

SENS UP

OFF

AE BRIGHT

6

IRIS SPEED

3

LENS MODE

INDOOR

FLK CONTROL

AUTO

RETURN

➤ IRIS SPEED : 0 ~ 5

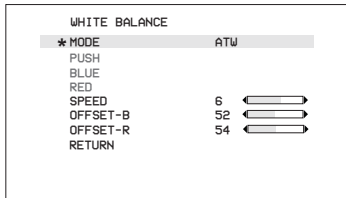
Electronic Iris speed can be controlled. (DC Iris lens only)

➤ 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.*



ATW

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

➤ **SPEED** : 0 ~ 7

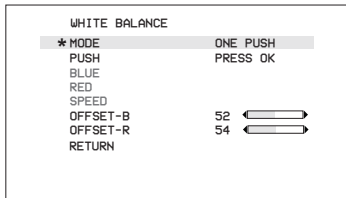
White balance adjust speed can be adjusted.

➤ **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 "ATW" cannot produce the proper white balance.

➤ **PUSH**

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-adapt.

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

6



OFFSET-B

52



OFFSET-R

54



RETURN

WHITE BALANCE

* MODE MANUAL

PUSH

BLUE

50



RED

50



SPEED

OFFSET-B

OFFSET-R

RETURN

INDOOR

"INDOOR" mode will adjust white balance to indoor lighting condition.

OUTDOOR

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

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

* MODE	DAY (COLOR)
NIGHT COLOR	OFF
COLOR BURST	OFF
RETURN	

Adjust color or B&W setting from this menu.

➤ **MODE** : DAY(COLOR), NIGHT(B&W)

Set camera to either color mode or B&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)*

NOISE REDUCTION

* MODE	2D + 3D
DNR LEVEL	AUTO
DNR APERTURE	2
RETURN	

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.

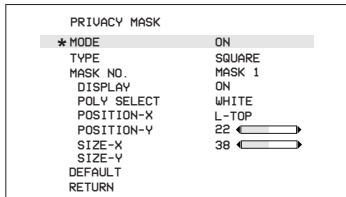
➤ **DNR LEVEL** : AUTO, LOW, MIDDLE, HIGH

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 zone can be setup from this menu.

➤ **MODE** : ON, OFF

Enable "PRIVACY ZONE" ON or OFF.

➤ **TYPE**: SQUARE, 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** : L-TOP, L-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

EFFECT

LENS SHADING	ON	
* GAMMA CORRECT	ON	>
CONTRAST	11	
BRIGHTNESS	11	
SATURATION	12	
HUE	10	
EDGE ENHANCE	5	
AUTO SATURATION	MIDDLE	
AUTO EDGE	ON	
DEFAULT		
RETURN		

GAMMA CORRECTION OPTION

* FRONT GM EN	DEFAULT
REAR GM EN	
REAR GM INV	DEFAULT
BAY LUT EXTEND	UNIFORM
RGB LUT EXTEND	UNIFORM
Y LUT EXTEND	UNIFORM
BYLUT XSAMPLE	64x256LUT
RGLUT XSAMPLE	64x256LUT
RETURN	

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.

>FRONT GM EN: DEFAULT, OFF-BYPASS, 0.9 ~ 0.4, CUSTOM
CMOS sensor gamma level can be adjusted.






>REAR GM INV: DEFAULT, OFF, 0.9 ~ 0.4, CUSTOM
Output 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.

>RGLUT XSAMPLE: 64x256LUT, 32x256LUT, 64x256LUT,
128x256LUT, 256x256LUT
Tuning and engineering purpose LUT correction.

EFFECT

LENS SHADING	ON	
GAMMA CORRECT	ON	>
* CONTRAST	11	
BRIGHTNESS	11	
SATURATION	12	
HUE	10	
EDGE ENHANCE	5	
AUTO SATURATION	MIDDLE	
AUTO EDGE	ON	
DEFAULT		
RETURN		

➤ CONTRAST : 0 ~ 20

Contrast level can be adjusted.

➤ BRIGHTNESS: 0 ~ 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

Set EFFECT menu to default value.

SPECIAL

* DZOOM	ON	>
DEFOG	OFF	
DIS		
BACKLIGHT	OFF	
BINNING	OFF	
DEFECT PIXEL	ON	>
DISP. FUNCTION		
FLICKER DETECT		
RETURN		

D-ZOOM

* ZOOM CONTROL		>
PIP	ON	
PIP SIZE	1/16	
PIP POSITION		
DEFAULT		
RETURN		

Camera special functions can be adjusted from SPECIAL menu.

DZOOM : 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.

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.

DEFOG SETUP

* STRENGTH 8 

THRESHOLD

AUTO LEVEL

RETURN

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 : ON, OFF

Digital image stabilization can be turned ON or OFF.

BACKLIGHT : OFF, BLC, HLM

Camera backlight compensation can be adjusted.

BLC : OFF, ON

BLC enables back light compensation.

➤ **SIZE/POSITION** : SIZE, POSITION, RETURN

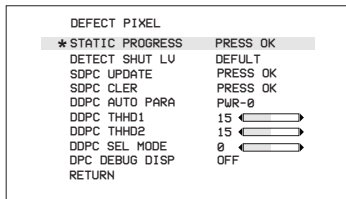
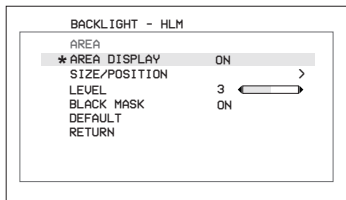
Adjust BLC area window size.

➤ **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**

HLM 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.

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.

DISPLAY FUNCTION

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

SPECIAL

DZOOM	
DEFOG	OFF
DIS	
BACKLIGHT	OFF
BINNING	
DEFECT PIXEL	OFF >
DISP. FUNCTION	RT ZOOM
* FLICKER DETECT	ON
RETURN	

DISPLAY FUNCTION

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.

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.

FLICKER DETECT : OFF, ON

"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		>
MENU COLOR		>
FACTORY RESET		>
SYSTEM INFO		>
OUTPUT FORMAT	1080P60	>
AUDIO		
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.

>CAM ID: 0 ~ 7

>ID DISPLAY: OFF, ON

>BAUDRATE: 2400, 4800, 9600, 19200, 38400

>MENU COLOR

OSD menu color can be adjusted.

>SYSTEM INFO

Camera information can be found under this menu.

>OUTPUT FORMAT

Camera resolution and frame rate can be set.

Supported formats are:

4K2160P 30 / 29.97 / 25 / 24

720P 60 / 59.94 / 50

1080i 60 / 59.94 / 50

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

>AUDIO

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

SPECIFICATION: UHD6G-200

Image Sensor	1/2.5 inch Progressive CMOS
Sensor Size	Diagonal 7.20mm
Effective Pixels	Horizontal: 3840, Vertical: 2202
Pixel Size	1.62 μm (H) x 1.62 μm (V)
Sync System	Internal Sync.
Resolution	2160p : 3840 x 2160 1080p / 1080i : 1920 x 1080 720p : 1280 x 720
Minimum Illumination	0.2Lux (Day), 0.05Lux(Night)
Frame Rate	4K2160p : 30 / 29.97 / 25 / 24 1080p : 60 / 59.94 / 50 / 30 / 29.97 / 25 / 24 1080i : 60 / 59.94 / 50 720p : 60 / 59.94 / 50
Video Signal Output	6G-SDI
White Balance	Auto & Manual (1,900°K~11,000°K)
Lens Mount	C / CS Mount
Synchronization	-
Audio Input	3.5mm Analog Audio Input
Audio Sample Rate	16 / 20 / 24 / 32 bits
Color Space	4:2:2(YCbCr) 10bit
Other Features	Digital Zoom, DNR, GAMMA CORRECT
Camera Control	OSD Control Button / via RS-485
Operation Temperature	32°F - 104°F
Dimension & Weight	38mm x 38mm x 65mm / 1.49" x 1.49" x 2.55"
Power Requirements	12VDC (+9 - +15VDC)

Specifications are subject to change without notice



Disposal of Old Appliances

1. 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.
2. 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.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
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 interference in which case the user will be required to correct the interference at his own expense.