AIDA
IMAGING

3G-SDI/HDMI FULL HD
Gen-lock Camera

GEN3G-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.

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,cause excessive heat or fire
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.
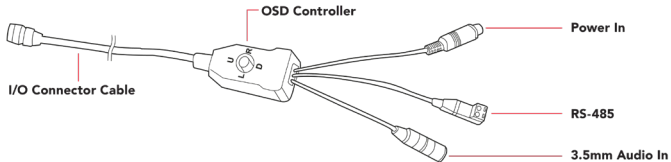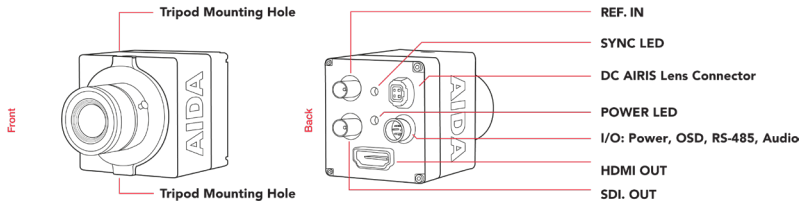
6. Do not place conductive objects (e.g. screw drivers, coins, metal items, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire, electric shock, or falling objects.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause 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.

Front

Back

Tripod Mounting Hole

Tripod Mounting Hole

REF. IN

SYNC LED

DC AIRIS Lens Connector

POWER LED

I/O: Power, OSD, RS-485, Audio

HDMI OUT

SDI. OUT

OSD Controller

I/O Connector Cable

Power In

RS-485

3.5mm Audio In

- 2.1 Megapixel CMOS progressive sensor provides superb image quality and excellent color reproduction.
- SMPTE 292M & 424M standard high definition video format including 59.94Hz.
- 'Self-Adaptive' resolution and frame rate feature allows camera to self-adopt to the external reference sync signal.
- Highly compatible with Tri Level reference.
- Versatile, compact and rugged design.
- Built in OSD control button & control via SONY VISCA protocol.
- Embedded audio via SDI & HDMI.
- Wide range of white balance.
- High Dynamic Range & Noise Reduction.
- Simultaneous SDI and HDMI Output.

MENU OPERATION

```
   MAIN MENU

 *WB CONTROL          >
  AE CONTROL          >
  DAY /NIGHT          >
  AUDIO               >
  IMAGE CONTROL       >
  SPECIAL             >
  SETUP               >
  RESET               >
  EXIT
```

L- Left | **R-** Right | **U-** Up | **D-** Down | ■- Select

1. **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.

```
MENU
*LENS           DC IRIS
 WB CONTROL     ATW
 EXPOSURE       AUTO
 BACKLIGHT               〉
 DAY/NIGHT      COLOR
 AUDIO          OFF
 GENLOCK                 〉
 IMAGE CONTROL           〉
 SPECIAL                 〉
 RESET
 EXIT
```

LENS
DC IRIS ◆▶ MANUAL IRIS

WHITE BALANCE
AUTO◆▶ ATW ◆▶ PUSH ◆▶ MANUAL

EXPOSURE
AUTO ◆▶ SHUTTER PRI. ◆▶ FLICKER-LESS ◆▶ MANUAL

BLACK-LIGHT
SPOT ◆▶ HDR ◆▶ BLC ◆▶ OFF
ACE

DAY/NIGHT
COLOR ◆▶NIGHT

AUDIO MIC
MIC ◆▶ LINE ◆▶ OFF

GEN-LOCK
MODE, OUTPUT EN, H-SYNC, PHASE SET

IMAGE CONTROL
CONTRAST, SATURATION, MIRROR, FLIP, D-ZOOM
NOISE REDUCTION, GAMMA, FRAME RATE

SETTING
SOFTWARE VERSION, CAM ID, BAUDRATE, LANGUAGE, DEFECT DET

RESET
SPOT ◆▶ HDR ◆▶ BLC ◆▶ OFF

EXIT

```
MENU
*LENS          MANUAL IRIS
 WB CONTROL    ATW
 EXPOSURE      AUTO
 BACKLIGHT              >
 DAY/NIGHT     COLOR
 AUDIO         OFF
 GENLOCK                >
 IMAGE CONTROL          >
 SPECIAL               >
 RESET
 EXIT
```

LENS

DC IRIS

Select "DC IRIS" when using the DC Iris lens (CS/C Mount).

Iris will be controlled by the camera.

MANUAL IRIS

Select "MANUAL IRIS" when using the manual iris lens (CS/C Mount).

Iris needs to be manually set from the lens.

```
MENU

 LENS          DC IRIS
*WHITE BALANCE

  WB BALANCE

 *COLOR TEMP    5000K
  RED GAIN      32  ◀▮▮▯▯▯▯▶
  BLUE GAIN     32  ◀▮▮▯▯▯▯▶
  RETURN
```

WHITE BALANCE

Camera provides a wide range of white balance options.
Check your color temperature before adjusting this mode.

- **AUTO** : Camera will automatically adjust the white balance if the color temperature falls within 3,000°K ~ 8,000°K.
- **ATW** : Wider range of color temperature than "AUTO" mode. Camera will automatically adjust the white balance if the color temperature falls within 1,900°K ~ 11,000°K.
- **PUSH** :Push mode is used if "AUTO" or "ATW" cannot produce the proper white balance. Place a white paper in front of the camera when using the "PUSH" mode to self-adopt.
- **MANUAL** : Manual mode has "COLOR TEMP", "RED GAIN", and "BLUE GAIN" options for user preferred settings.

* Adjust white balance using "AUTO" and "ATW" modes before using "PUSH" or "MANUAL" modes.
  White balance may not work properly if the camera is facing toward a light source.

```
MENU

  LENS              MANUAL IRIS
  WB CONTROL        ATW
 *EXPOSURE          AUTO
  BACKLIGHT                    >
  DAY/NIGHT         COLOR
  AUDIO             OFF
  GENLOCK                      >
  IMAGE CONTROL                >
  SPECIAL                      >
  RESET
  EXIT
```

```
EXPOSURE

 *EXP.COMPENSATION  10  ◄■■■■□►
  GAIN              AUTO
  AGC LIMIT         13  ◄■■■■□□►
  SHUTTER           AUTO
  SENS-UP           OFF
  RETURN
```

EXPOSURE
Camera exposure level can be adjusted using four different modes.

AUTO
Auto mode will adjust the exposure level automatically.
Detailed fine tuning options are available under this menu.

- **EXP. COMPENSATION** : 0~20

  Exposure level can be adjusted by the light meter.
- **GAIN** : AUTO, -3dB ~ +30dB

  Electronic brightness can be adjusted by "GAIN" control.
- **AGC LIMIT** : 0~20

  "AGC LIMIT" sets the maximum gain value to control the video noise caused by Auto Gain Control.
- **SHUTTER** : OUTDOOR, INDOOR, DE-BLUR Shutter speed is automatically controlled by the camera.

  Select "OUTDOOR" when camera is used in outdoor environment.

  Select "INDOOR" when camera is used in indoor environment.

  Select "DE-BLUR" when camera is used in indoor environment.

  Shutter value is increased and Iris is opened more than "INDOOR" mode.
- **AGC LIMIT** : OFF, x2, x4, x8, x16, x32, x64

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

```
MENU
  LENS              MANUAL IRIS
  WB CONTROL        ATW
 *EXPOSURE          SHUTTER PRI
  BACKLIGHT              >
  DAY/NIGHT         COLOR
  AUDIO             OFF
  GENLOCK               >
  IMAGE CONTROL         >
  SPECIAL               >
  RESET
  EXIT
```

```
EXPOSURE

 *EXP.COMPENSATION  10  ◄▬▬▭►
  GAIN              AUTO
  AGC LIMIT         13  ◄▬▬▭►
  SHUTTER           1/90
  RETURN
```

EXPOSURE
SHUTTER PRI.
Shutter priority mode provides more detailed shutter speed option. All other controls are tuned for the selected shutter speed.

- **EXP. COMPENSATION** : 0~20

  Exposure level can be adjusted by the light meter.
- **GAIN** : AUTO, -3dB ~ +30dB

  Electronic brightness can be adjusted by "GAIN" control.
- **AGC LIMIT** : 0~20

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

  Auto Gain Control.
- **SHUTTER** : 1/2 ~ 1/40,000

  Shutter speed can be set from this menu.

```
MENU
  LENS              MANUAL IRIS
  WB CONTROL        ATW
 *EXPOSURE          FLICKER
  BACKLIGHT                    >
  DAY/NIGHT         COLOR
  AUDIO             OFF
  GENLOCK                      >
  IMAGE CONTROL                >
  SPECIAL                      >
  RESET
  EXIT
```

```
EXPOSURE

 *EXP.COMPENSATION  10  (■■■□□)
  GAIN              AUTO
  AGC LIMIT         13  (■■■■□)
  SHUTTER           1/90
  RETURN
```

EXPOSURE

FLICKER-LESS
Flicker-less mode provides a proper image sensor frequency to match the power frequency in order to minimize video flicker.

- **EXP. COMPENSATION** : 0~20 (Exposure level can be adjusted by the light meter)
- **GAIN** : AUTO, -3dB ~ +30dB
  Electronic brightness can be adjusted by "GAIN" control.
- **AGC LIMIT** : 0~20
  "AGC LIMIT" sets the maximum gain value to control the video noise caused by Auto Gain Control.
- **SHUTTER** : AUTO (Shutter speed is automatically controlled by the camera)

* "FLICKER-LESS" mode may not be suitable if camera is used in extreme bright environment.

```
MENU
  LENS              MANUAL IRIS
  WB CONTROL        ATW
 *EXPOSURE          MANUAL
  BACKLIGHT                    >
  DAY/NIGHT         COLOR
  AUDIO             OFF
  GENLOCK                      >
  IMAGE CONTROL                >
  SPECIAL                      >
  RESET
  EXIT
```

EXPOSURE

MANUAL

Flicker-less mode provides a proper image sensor frequency to match the power frequency in order to minimize video flicker.

- **GAIN** : AUTO, -3dB ~ +30dB

  Electronic brightness can be adjusted by "GAIN" control.

- **SHUTTER** : 1/2 ~ 1/40,000

  Shutter speed is automatically controlled by the camera.

```
EXPOSURE

 *GAIN          2   ◄▐▊▊▊▌►
  SHUTTER       1/90
  RETURN
```

```
MENU
  LENS            MANUAL IRIS
  WB CONTROL      ATW
  EXPOSURE        MANUAL
 *BACKLIGHT                  >
```

```
  BACK LIGHT

 *BACK LIGHT      SPOT
  ACE            OFF
  RETURN
```

BACK-LIGHT
Camera provides multiple options for BACK-LIGHT requirements.

SPOT
"SPOT" is spot metering feature. It will evaluate the light around the focus point.
Focus point can be adjusted by the following menu.

- **AE HOR POS**
- **AE VER POS**
- **AE WIDTH**
- **AE HEIGHT**

HDR: LOW, MIDDLE, HIGH
"HDR" reproduces a greater dynamic range for clear view of both bright and dark areas.
BLC: LOW, MIDDLE, HIGH ("BLC" mode will express darker area brighter.)

* Enabling "BLC" may cause overexposure in bright area.

ACE: LOW, MIDDLE, HIGH ("ACE" feature is digital HDR mode.)
It utilizes "GAMMA" and "CONTRAST" to adjust both bright and dark image areas.

```
  DAY & NIGHT

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

DAY/NIGHT
COLOR
Select "COLOR" mode to stay in color at all time.
NIGHT
Select "NIGHT" mode to stay in black and white mode.

* "COLOR" mode will not detect infrared light whereas "NIGHT" will detect infrared light for better visibility during extreme low light conditions.

```
MENU
  LENS            MANUAL IRIS
  WB CONTROL      ATW
  EXPOSURE        MANUAL
  BACKLIGHT               ›
  DAY/NIGHT       COLOR
 *AUDIO           MIC
  GENLOCK                 ›
  IMAGE CONTROL           ›
  SETTING                 ›
  RESET
  EXIT
```

```
AUDIO MIC

 *AUDIO LEVEL      +20dB
  MIC ATTENUATION  OFF
  SAMPLE RATE      24 RATE
  RETURN
```

AUDIO

Camera supports external analog audio input (3.5mm).
Audio will be embedded to both SDI and HDMI outputs.

MIC: *Camera will receive MIC level audio input by selecting "MIC" mode.*

- **AUDIO LEVEL** : -12dB ~ +59dB
  Audio level can be manually adjusted from this menu.
- **MIC ATTENUATION** : ON, OFF
  Audio input attenuation can be controlled from this menu to minimize the audio noise level.
- **SAMPLE RATE** : 16, 20, 24, 32
  Audio sample bit rate can be adjusted from this menu.

LINE: *Camera will receive Line level audio input by selecting "LINE" mode.*

- **AUDIO LEVEL** : -12dB ~ +59dB
  Audio level can be manually adjusted from this menu.
- **MIC ATTENUATION** : ON, OFF
  Audio input attenuation can be controlled from this menu to minimize the audio noise level.
- **SAMPLE RATE** : 16, 20, 24, 32
  Audio sample bit rate can be adjusted from this menu.

```
MENU
  LENS              MANUAL IRIS
  WB CONTROL        ATW
  EXPOSURE          MANUAL
  BACKLIGHT                    〉
  DAY/NIGHT         COLOR
  AUDIO             MIC
 *GENLOCK                      〉
  IMAGE CONTROL                〉
  SETTING                      〉
  RESET
  EXIT
```

```
GENLOCK

 *MODE              ON
  OUTPUT EN         ON
  H-SYNC PHASE      0
  PHASE SET         ON
  RETURN
```

GEN-LOCK

Camera is equipped with an external Tri-Level reference signal input for seamless switching. Up to 3G-SDI reference signal can be accepted and camera will self-adjust to both resolution and frame rate based on the reference signal.

- **MODE**

  Enable or Disable the external reference signal.

- **OUTPUT EN**

  Enable or Disable the reference signal loop out.

- **H-SYNC PHASE**

  Adjust H-Sync pixel offset for a fine tuning.

- **PHASE SET**

  Enable "PHASE SET" to apply the changes made from "H-SYNC PHASE".

```
MENU
  LENS              MANUAL IRIS
  WB CONTROL        ATW
  EXPOSURE          MANUAL
  BACKLIGHT                     >
  DAY/NIGHT         COLOR
  AUDIO             MIC
  GENLOCK                       >
 *IMAGE CONTROL                 >
  SETTING                       >
  RESET
  EXIT
```

```
 IMAGE CONTROL
 *CONTRAST        11    ◄▮▮▮▮    ►
  SATURATION      10    ◄▮▮▮▮▮▮  ►
  MIRROR          OFF
  FLIP            OFF
  D ZOOM          1.0X
  NOISE REDUCTION LOW
  GAMMA CORRECT   DEFAULT
  FRAME RATE      HD1080P60
  RETURN
```

IMAGE CONTROL

Camera provides multiple options to adjust image quality.

- **CONTRAST** : 0 ~ 64

  "CONTRAST" controls the range between dark and bright areas.
- **SATURATION** : 0 ~ 20

  "SATURATION" sets the level of color vividness.
- **SHARPNESS** : 0 ~ 20

  Image outline or edges will be clearer and pronounced.
- **MIRROR** : ON, OFF

  Image is rotated horizontally.
- **FLIP** : ON, OFF

  Image is rotated horizontally.
- **D.ZOOM** : 1.0X ~ 16.0X

  Digitally zoom in to an area up to 16 times.
- **NOISE REDUCTION** : OFF, LOW, MIDDLE, HIGH

  Reduce noise level at low ambient light.
- **GAMMA** : LOW, MIDDLE, HIGH, STANDARD, STRIGHT

  Gamma curve can be adjusted from this menu.
- **FRAME RATE**

  Camera provides 14 different resolution and frame rate settings.

  1080p25 / 29.97 / 30 / 50 / 59.94 / 60

  1080i50 / 59.94 / 60

  720p25 / 30 / 50 / 59.94 / 60

```
MENU
   LENS             MANUAL IRIS
   WB CONTROL       ATW
   EXPOSURE         MANUAL
   BACKLIGHT                    >
   DAY/NIGHT        COLOR
   AUDIO            MIC
   GENLOCK                      >
   IMAGE CONTROL                >
  *SETTING                      >
   RESET
   EXIT
```

```
SETTING

  *SOFTARE VERSION   G.0.6.0
   CAM ID            1
   BAUDRATE          9600
   LANGUAGE          ENG
   DETECT DET        ON
   RETURN
```

SETTING

Camera software and remote control information is under this menu. You can remotely access the features via RS485.

- **SOFTWARE VERSION**

  Camera software information.

- **CAM ID :** 0~255

  Set camera ID for remote camera control access.

  Camera supports SONY VISCA and PELCO protocols.

- **BAUDRATE :** 2,400 ~ 115,200

  Set baud rate for remote camera control access.

- **LANGUAGE :**

  Camera menu language can be set to either English or Chinese.

- **DETECT DET :** Camera provides an auto pixel correction.

  * Please consult with your authorized dealer or factory before using "DEFECT DET".

```
MENU
  LENS              MANUAL IRIS
  WB CONTROL        ATW
  EXPOSURE          MANUAL
  BACKLIGHT                    >
  DAY/NIGHT         COLOR
  AUDIO             MIC
  GENLOCK                      >
  IMAGE CONTROL                >
  SETTING                      >
 *RESET
  EXIT
```

```
REESET

 *MODE             FACTORY
  RESET
  SYSTEM INFO
  SAVE AS USER
  RETURN
```

RESET

Camera setting can be defaulted to the "FACTORY" setting.
User can also save the desired setting as the "USER" setting.

CHANGE

Before defaulting the camera setting, make sure to select the desired setting.

- **FACTORY**

  Select "FACTORY" if factory default setting is needed.
  * "FRAME RATE", "CAM ID", "BAUDRATE" will not change.

- **USER :** Select "USER" if user saved setting is needed.

- **SAVE :** To save a user desired setting, Select "USER" from above menu and "SAVE".

ON

Press the menu button from your controller to set the camera to either
"FACTORY" or "USER".
Make sure to select the right mode from "CHANGE" before defaulting the camera.

VIDEO

Image Sensor	1/3" inch Progressive CMOS
Sensor Size	5.346mm x 3.003mm (16:9)
Effective Pixels	Horizontal: 1920, Vertical: 1080
Pixel Size	2.75 µm x 2.75 µm
Resolution	1080p & 1080i: 1920 x 1080
	720p & 720i: 1280 x 720
Resolution Rate	1080 60p/59.94p/50p/30p/29.97p/ 25p
	1080 60i/59.94i/50i
	720 60p/59.94p/50p/30p/25p
Output	HD-SDI/3G-SDI (1 BNC) / HDMI 1.3a
Color Space	4:2:2 (YCbCr) 10bit
Min. Illumination	0.2Lux (Day), 0.1Lux (Night),
	0.005Lux (Slow Shutter ON)
White Balance	Auto & Manual (9,000 K - 11,000 K)

LENS

Lens	CS Mount (Default 4mm HD Lens)

AUDIO INPUT

Input	3.5mm Analog Audio Input through I/O Cable
Sample Rate	16/24/32 Bits

STANDARD

SMPTE	SMPTE 292M, SMPTE 424M

SYNCHRONIZATION

Gen-lock	External Tri-Level Input

PHYSICAL

Camera Control	RS-485 VISCA, OSD Button
Operation Temp	32° F - 104° F
Dimension	49mm x 49m x 71mm / 1.92" x 1.92" x 2.79"
	(With default 4mm Lens)
Weight	180g / 0.39lbs (With default 4mm Lens)
Power	6W at 12VDC (+9 - +15VDC)

Specification are subject to change without notice.

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