AIDA IMAGING

3G-SDI IP controllable Micro POV Camera Series

HD3G-IPC-100A
HD3G-IPC-IP67
HD3G-IPC-MINI
HD3G-IPC-TF
GEN3G-IPC-200

Operation Guide
Version 1.2

Please thoroughly read through this manual before operating the unit. Please retain this manual for future reference.

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Camera Physical Overview

Connecting and Operating

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This manual is for reference only. Future updates and changes may be different then the information provided in this guide in the future. We reserve the right to modify this manual or information contained herein anytime without notice.

Overview

Safety Guides

⚠ The camera power voltage is 12V DC, rated at 2A. We suggest you use the original power supply adapter supplied by the factory.

⚠ Please ensure all cables and connections are safe from moisture, corrosive liquid and hazardous conditions.

⚠ Operation temperature range should be from 0°C to 40°C (32°F to 104°F) up to 80% humidity.

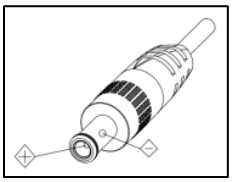
⚠ Avoid stress, strong vibrations, and high humidity environments when transporting, storing, or installing. We recommend using the packaging foam when transporting the camera to stop any unnecessary damage to the camera.

⚠ Do not unscrew, remove, or attempt to open the camera housing or cover. Doing so will result in a breach of warranty contract. Please contact our support team or authorized technicians to deal with problems.

⚠ Do not direct the camera lens towards intensive lights such as the sun. Doing so will damage the imaging sensor on board.

⚠ Use a dry, soft cloth to clean the housing. You may use neutral cleaning agents for the camera housing. Please use microfiber lens cleaner to wipe the camera lens.

⚠ Power supply polarity is as shown.



*Video quality of the camera may be affected by specific electromagnetic frequencies, please adjust the anti-flicker and electronic shutter speed accordingly.

Box Contents

Please confirm the packing list below of all items provided with (1) purchase of one HD3G-IPC Model

HD3G-IPC Camera 1
Power Adapter + Intl. Conversions. 1
PoE+ Injector. 1
Breakout I/O Cable (100A/200). 1
C-Mount Adapter (100A/200). 1
Lens Hex Tool (TF only). 1

NOTE:
If you are missing any items, please contact our rma@aidaimaging.com team to assist in obtaining additional parts. Serial number and invoice will need to be provided to this.

If you would like to purchase additional accessories, please visit our ecommerce site at:

aidaimaging.shop

to purchase any spare parts.

Additional Purchasable Accessories for the HD3G-IPC Series:

CS6.0F – If you are looking to remove the fisheye from the lens, but relatively keep the same amount of HFOV, this is a popular choice. **(Only applicable to 100A, IP67 and GEN3G-IPC-200 model)**

CS8.0F – A tighter ranged lens that narrows the HFOV to around 38°. **(Only applicable to 100A, IP67 and GEN3G-IPC-200 model)**

CS12.0F – The tightest lens we have, narrowing the HFOV up to 25°. Best for further away applications **(Only applicable to 100A, IP67 and GEN3G-IPC-200 model)**

M12-6.0F – Effectively remove the fish-eye found on the MINI model, while slightly diminishing the HFOV. **(Only applicable to MINI model)**

Varifocal Lenses – Looking for an adjustable focal length lens? Perfect for situations where the placement of the POV may change, or requires more versatility to grab different shots. **(Only applicable to 100A and GEN3G-IPC-200 model)**

You can purchase these at any AIDA authorized reseller / distributor. You can find your nearest reseller at:

aidaimaging.com/where-to-buy

Alternatively, they can also be purchased at our ecommerce shop:

aidaimaging.shop

Features & Product Highlights

The HD3G-IPC series introduces our world famous micro-POV camera solution, with IP controllable settings, and a 3G-SDI output perfect for any new or existing broadcast workflow.

Versatile Micro POV Camera

The HD3G-IPC series comes in many forms with their own strengths and weaknesses. Some cameras are weatherproof, one camera has a built in varifocal lens option, while the other provides a genlockable 3G-SDI output! All these options are available, so choosing the correct camera for your workflow has never been easier.

Video Performance

All the camera's in this series utilize a 1/2.8" Sony Progressive CMOS sensor, maximizing the quality of the stream without sacrificing low-light, and budget. With uncompressed video at 4:2:2 color spacing, capturing high quality video for your workflow just got a whole lot better.

Audio Input

All the camera's in this series come equipped with a line-in portion to embed audio over the 3G-SDI line (HDMI as well for the GEN3G-IPC-200 model.) Getting synchronized audio and video has never been easier!

IPC Functionality

IPC, or I.P. Control allows all the HD3G-IPC series cameras to be controlled via VISCA over IP. Having a native RJ45 port through the cameras gives each camera the ability to be sent commands over the network hassle-free!

Full Parameter Control

Like any AIDA camera, you can fully control any portion of the cameras exposure, white-balance, and camera settings via the OSD menu, RS485, or VISCA over IP. You can directly control your camera using our free IPC Software.

PoE+ Capable

Although the HD3G-IPC cameras are not directly PoE+ capable, with every purchase of the camera we throw in a PoE+ injector that you can use to directly power and transmit control over an ethernet cable!

Swappable Lenses

Applying to the HD3G-IPC-100A and GEN3G-IPC-200, you have free reign on any CS-mount lens you want to throw on it! See the previous page for alternative options that might fit your needs. The HD3G-IPC-IP67 and HD3G-IPC-MINI have the option for swappable lens as well, but its based on what can fit inside the cap! We have labeled what lenses apply on the previous page as well for those models.

Genlock Capable

The GEN3G-IPC-200 is the only model that is capable of Genlocking the 3G-SDI video of the camera. With Genlock, keep all your cameras and production on time with tri-level sync, ensuring that streams and broadcasts never skip a beat.

Easy Mounting Solutions

The HD3G-IPC series cameras can easily be mounted by their top / bottom 1/4” 20 mounting holes (standard tripod mounting holes.) The Only exception is the HD3G-IPC-MINI, which only has a bottom mounting hole.

Weatherproof Rated

The three cameras with weatherproof ratings are the HD3G-IPC-IP67, HD3G-IPC-MINI and the HD3G-IPC-TF. The IP67 and MINI have an IP rating of IP67, which keeps the camera safe from dust, moisture, and possible submersion no more than 3 feet for 30 minutes. The HD3G-IPC-TF has an IP rating of IP54, which keeps the camera safe from dust and moisture, with NO capability of submersion.

Camera's Specs:

Sensor	1/2.8-inch Sony CMOS Sensor
Min. Lux	0.2Lux (day) 0.1 Lux (Night) 0.005 Lux (slow shutter ON)
Color Space	4:2:2 (YCbCr) 10 bit
Standard CS Lens (100A, IP67, GEN3G-IPC-200)	4mm HD Lens HFOV: 80° Slight Visible Distortion
Standard M12 Lens (Mini)	3.6mm HD Lens HFOV: 92° Visible Distortion
Standard Varifocal Lens (TF)	Custom 5-50mm Lens HFOV: W(55°) – T (6.1°) No Visible Distortion

General Specs

Input Voltage	DC12V, optional PoE+ (IEEE802.AT standard)
Power	12VDC (+/- 10%)
Wattage Draw (IPC excluding GEN3G-IPC-200)	0.15A, 1.8 Watts
Wattage Draw (GEN3G-IPC-200)	0.33A, 3.96 Watts
Operating Temperature	32°F~104°F 0°C~42°C (+/- 10%)
Operating Humidity	<80%
Mounting Solution	¼" 20 Mounts

Weatherproof Specs

IP67 / MINI Model	IP67 (Protected against dust, moisture, and submersion up to 3ft (1M) up to 30 minutes.
TF Model	IP54 (Protected against dust and moisture. No submersion protection)

Control Protocols

Control Protocols	RS485, SERIAL VISCA, SONY VISCA, VISCA UDP, SONY VISCA over IP, OSD Menu
Connection Type	RJ45, RS485
Controller	Joystick on I/O Cable. PC
Genlock (GEN3G-IPC-200 Only)	External Tri-Level Input (IN / OUT)

Dimensions and Weights

HD3G-IPC-100A	7.6cm x 3.8cm x 3.8cm (3.0in x 1.5in x 1.5in) W: 0.22kg (8oz)
HD3G-IPC-IP67	6.8cm x 4.1cm x 4.1cm (2.7in x 1.6in x 1.6in) W: 0.4kg (14oz)
HD3G-IPC-MINI	9cm x 2.8cm (3.5in x 1.1in) W: 0.34kg (12oz)
HD3G-IPC-TF	9.3cm x 4cm x 4cm (3.7in x 1.6in x 1.6in) W: 0.4kg (14oz)
GEN3G-IPC-200	7.3cm x 4.1cm x 4.1cm (2.9in x 1.6in x 1.6in) W: 0.22kg (8oz)

Dimensions and Weights

IP67 / MINI / TF Cable Length	3M (10ft)

Video Formats (res/fps)

3G-SDI	1920x1080p (FHD): 60/59.94/50/30/29.97/25 1920x1080i (FHD-i): 60/59.94/50 1280x720p (HD): 60/59.94/50/30/29.97/25
HDMI	1920x1080p (FHD): 60/59.94/50/30/29.97/25 1920x1080i (FHD-i): 60/59.94/50 1280x720p (HD): 60/59.94/50/30/29.97/25

Comparison Table:

Camera:	HD3G-IPC-100A	HD3G-IPC-IP67	HD3G-IPC-MINI	HD3G-IPC-TF	GEN3G-IPC-200
Sensor Size	1/2.8" Sony Progressive CMOS Sensor				
Max Resolution	Up to 1080p 60fps via 3G-SDI				
Optics	4mm CS mount lens	4mm CS mount lens	3.6mm M12 mount lens	Custom 5-50mm lens	4mm CS mount lens
Horizontal FOV	80°	80°	92°	55~6°	80°
Swappable Lens	✓	✓*	✓*	✗	✓
Audio Embedment	✓				
Weatherproof	✗	✓	✓	✓**	✗
Genlock	✗	✗	✗	✗	✓

* Swappable lens optics on these cameras is dependent on the size, and angle of the lens.

** IP54 rated, meaning its protected from dust and moisture, just no submersion.

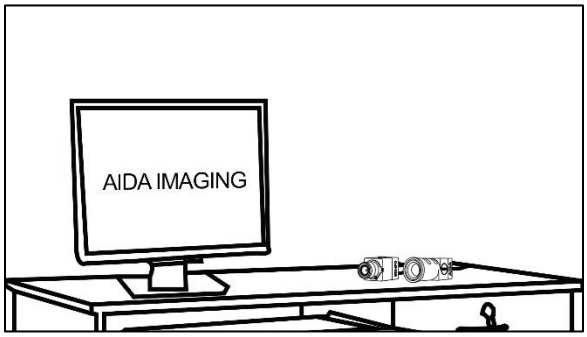
Installing the Camera

For ease of installation, please make sure no cables and pinched, pressured or bent in a way that can damage the cable.

⚠Although weatherproof, the IP rated cameras connectors are NOT weatherproof. Please keep the endings in a dry and cool place, such as a junction box or weathertape to make sure no water or moisture gets into the connector ports.

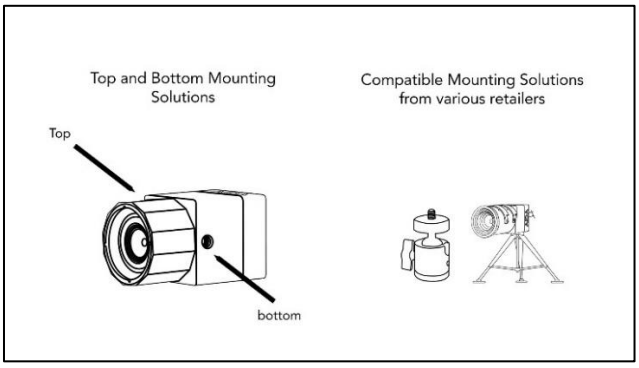
Installing the camera on a flat surface

The Micro-POV cameras can be placed on flat surfaces such as a table or floor. Please make sure there is not slight inclination, as it may cause the camera to slip and fall from placement.



Installing the camera on a Tripod

All models of the SDI-IPC series have a 1/4" 20 mounting solution on the top and bottom of the camera (excluding the MINI, which has only 1 bottom hole). Any standard tripod mount sold online or for any other cameras like DSLRs should work just fine!



CAD files for Special Installations

We offer 2D CAD files (unfortunately no 3D) to download on our website:

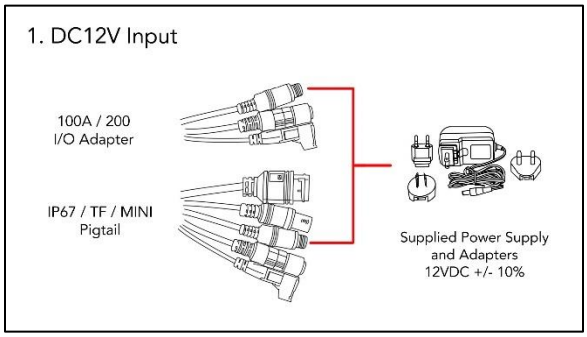
https://aidaimaging.com/download-tech-sheets/

Feel free to search for your model using the link. If you can't find what you are looking for, please message our support@aidaimaging.com team for more help.

Quick Start

Connecting the 3G-SDI Outputs

To get your SDI-IPC camera running, please provide power using the recommended power supply or PoE+ injector that came with the camera.



*GEN3G-IPC-200 I/O adapter will have an extra GENLOCK cable to it.

Give the camera 1 minute to boot up initially. Sometimes, the camera may load up faster.

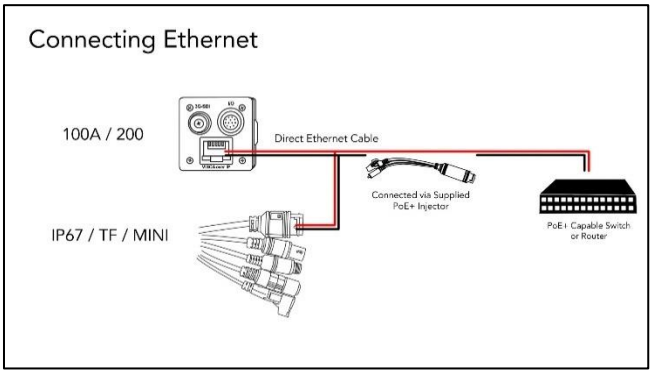
Next, securely connect a 3G-SDI cable to the back of the camera, or pigtail of the camera. You will then want to connect the other end of the 3G-SDI cable into your ingest.

Default resolution of these outputs is 1080p 30fps. If your ingest does not support that, please use a field monitor or capture card that supports the resolution, change it, and swap it back. Alternatively, you could send a VISCA command via IP or serial to set the resolution to your desired setting. The camera is fully functional after this!

OPTIONAL: Connecting VISCA over IP

The SDI-IPC cameras do not output via IP, and do not have a web UI. You will want to download our free IPC software (Windows only) at IPC Software.

You will want to connect a RJ45 ethernet cable from your camera, to the network to get started. The RJ45 will either connect to the back of the camera's RJ45 port, or the RJ45 port located on the pigtail of the camera.



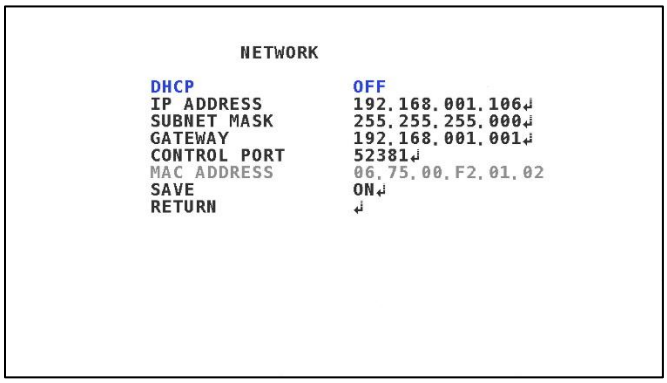
*GEN3G-IPC-200 back will have an HDMI output added.

Once connected, using a computer or device connected on the network, you can send VISCA commands to the camera as long as its within the same IP address. Natively, the SDI-IPC cameras are set at the IP of:

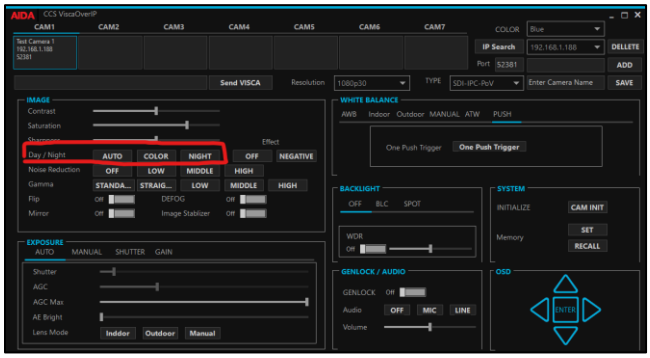
192.168.1.188.

You can change this by entering the OSD menu of the camera using the 3G-SDI image. Head to Settings, Network, and the ability to change the IP address or turn on DHCP are available.

Some example network settings you can change are below:



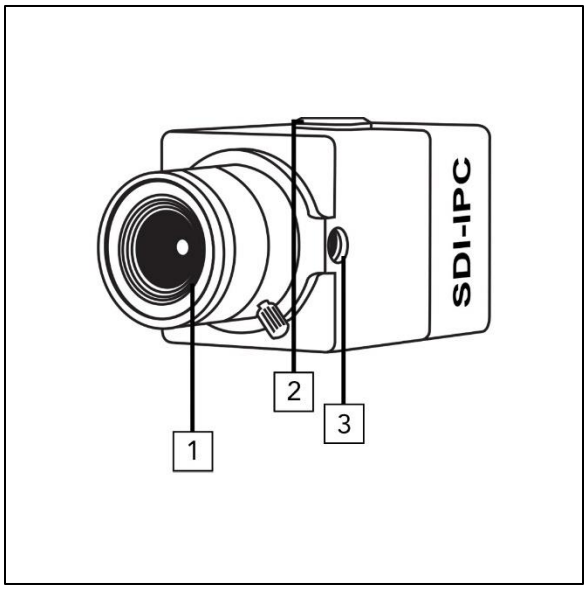
One of the best ways to test if a proper connection is made is using the day/night command. On the CCS-IPC program, after some setup if you click NIGHT mode with a proper connection, the image of your camera should turn black/white. Clicking color again should revert it back.



Once that is done, you can now control the camera using VISCA over IP. Do note that if you have multiple cameras, you will need to change the IP address of each camera to not conflict with one another. More will be mentioned in the networking section of the manual.

Camera Parts

HD3G-IPC-100A



1. Pre-installed 4mm 5MP Lens

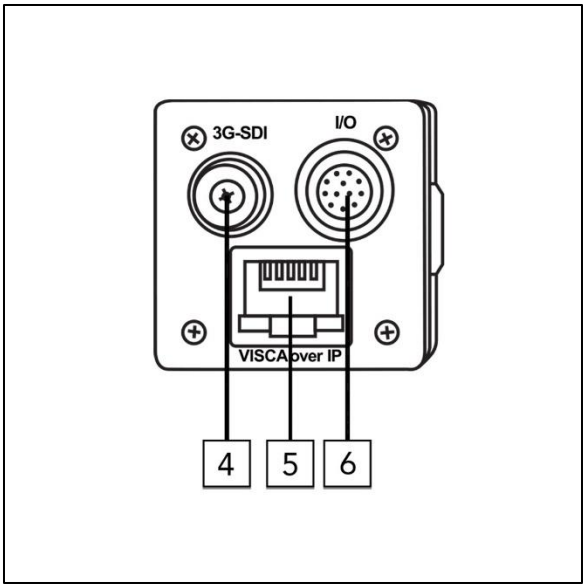
The camera comes pre-equipped with a swappable 4mm 5MP lens. If you do not like the slight distortion given from the lens, feel free to swap it with any CS-mount lens from our selection or others!

2. DC IRIS Port

If your CS mount lens has a DC IRIS option (no P-IRIS) you can connect that here.

3. Mounting Holes

This camera has a top and bottom ¼" 20 mounting hole. This is directly built into the body for extra stability.



4. 3G-SDI Output

This is the 3G-SDI output of the camera.

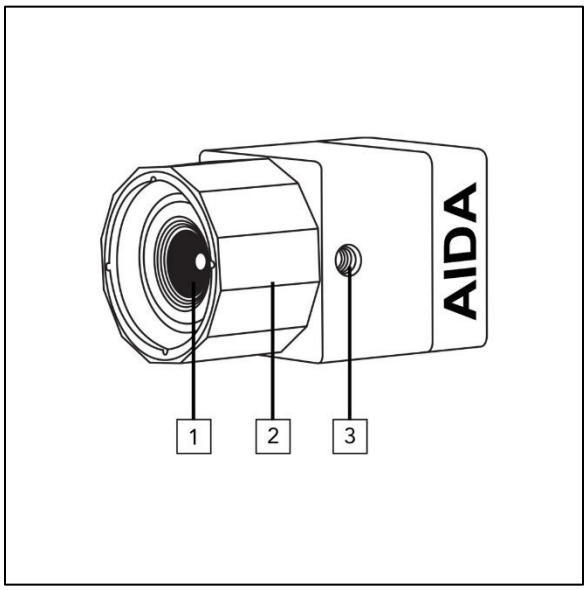
5. RJ45 Input for VISCA over IP

This is the RJ45 connector for ethernet based VISCA over IP. Connect this to your network to utilize the IPC function of the camera.

6. I/O Connector

The camera comes with a I/O connector cable that directly connects to this portion of the camera, and supplies power, control, and audio embedment. This detachable cable makes it easy to move and transfer the cameras.

HD3G-IPC-IP67



1. Pre-installed 4mm 5MP Lens

The camera comes pre-equipped with a swappable 4mm 5MP lens. If you do not like the slight distortion given from the lens, feel free to swap it with any CS-mount lens from our selection or others!*

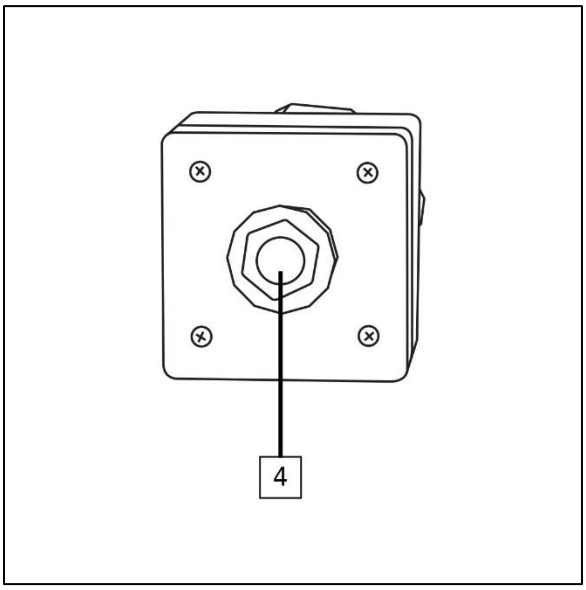
⚠The weatherproof cap on the lens was custom built for that lens. The swapped lens must be smaller, and have a narrower FOV to get it to work, such as our CS6.0F, CS8.0F, and CS12.0F.

2. Weatherproof Cap (LCAP)

This weatherproof cap has a O rubber seal on it to ensure no moisture gets in. If you plan on removing or replacing this part, please make sure the rubber ring goes back on the cap to ensure a proper seal.

3. Mounting Holes

This camera has a top and bottom ¼" 20 mounting hole. This is directly built into the body for extra stability.

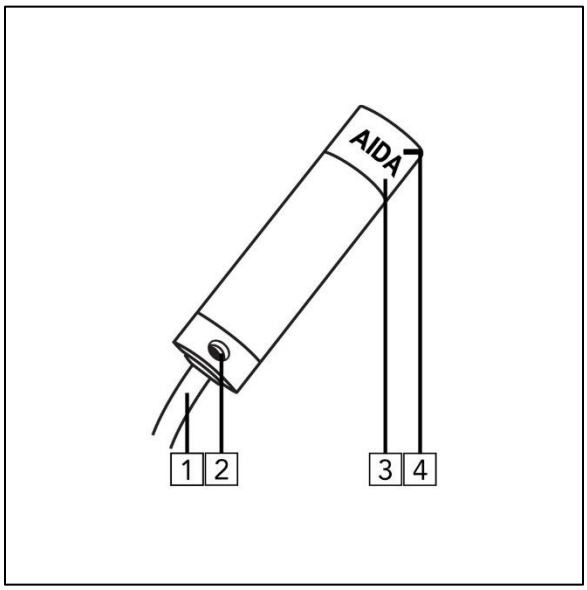


4. 3M (10ft) Weatherproof Cable

The back of the camera comes with a 3M / 10ft attached weatherproof cable that keeps the outputs safe from environmental hazards.

⚠Unfortunately this is the longest we can get the cable. If you plan on splicing the cable to make it shorter, please reach out to our support team for more info on the connections.

HD3G-IPC-MINI



1. 3M (10ft) Weatherproof Cable

The back of the camera comes with a 3M / 10ft attached weatherproof cable that keeps the outputs safe from environmental hazards.

⚠ Unfortunately this is the longest we can get the cable. If you plan on splicing the cable to make it shorter, please reach out to our support team for more info on the connections.

2. Mounting Hole

The MINI has only a bottom ¼" 20 mounting hole. This is directly built into the body for extra stability.

3. Weatherproof Cap

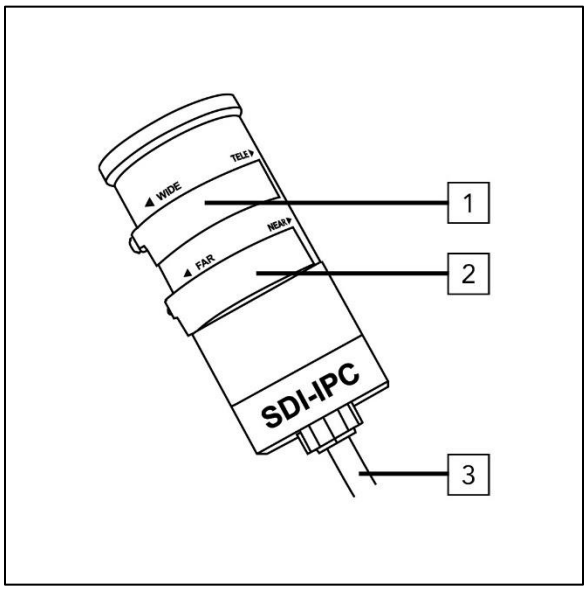
This weatherproof cap has a O rubber seal on it to ensure no moisture gets in. If you plan on removing or replacing this part, please make sure the rubber ring goes back on the cap to ensure a proper seal.

4. Pre-installed 3.6mm Lens

The camera comes pre-equipped with a swappable 3.6mm lens. If you do not like the slight distortion given from the lens, feel free to swap it with any narrower M-12 lens such as our M12-6.0F.

⚠ The weatherproof cap on the lens was custom built for that lens. The swapped lens must be smaller, and have a narrower FOV to get it to work.

HD3G-IPC-TF



1. WIDE / TELE Control

This portion of the camera controls the built-in zoom control of the camera. Using the hex tool that comes supplied with the camera, you can set, and lock the zoom level of the lens.

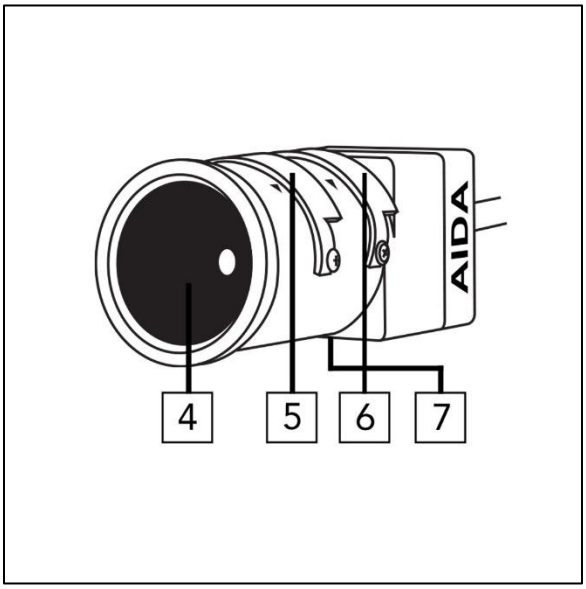
2. FAR / NEAR Control

This portion of the camera controls the built-in focus control of the camera. Using the hex tool that comes supplied with the camera, you can set, and lock the focus level of the lens.

3. 3M (10ft) Weatherproof Cable

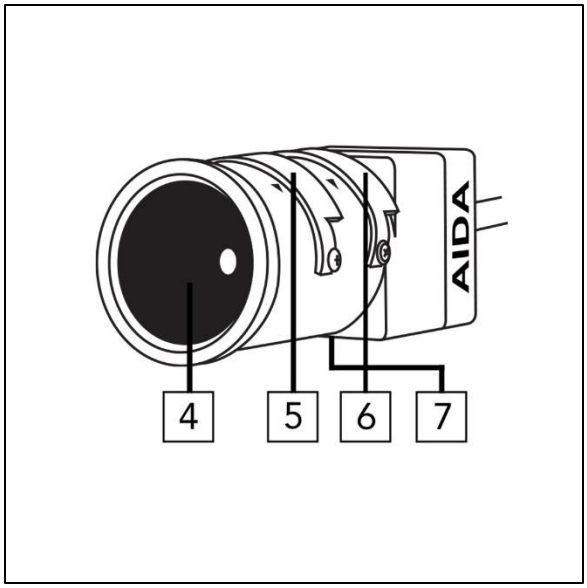
The back of the camera comes with a 3M / 10ft attached weatherproof cable that keeps the outputs safe from environmental hazards.

⚠ Unfortunately this is the longest we can get the cable. If you plan on splicing the cable to make it shorter, please reach out to our support team for more info on the connections.



4. Custom 5-50mm Built-In Lens

No assembly required! The 5-50mm built in lens is set and ready to be adjusted via the control knobs seen in number 1 & 2.



5. Weatherproof Seal - Zoom

This rubber seal protects from water and moisture building up in the lens. Make sure this is back on snug when adjusting the zoom.

⚠ If a tight seal is not made, you risk moisture and damage to the lens. Please double check this is securely on.

6. Weatherproof Seal - Focus

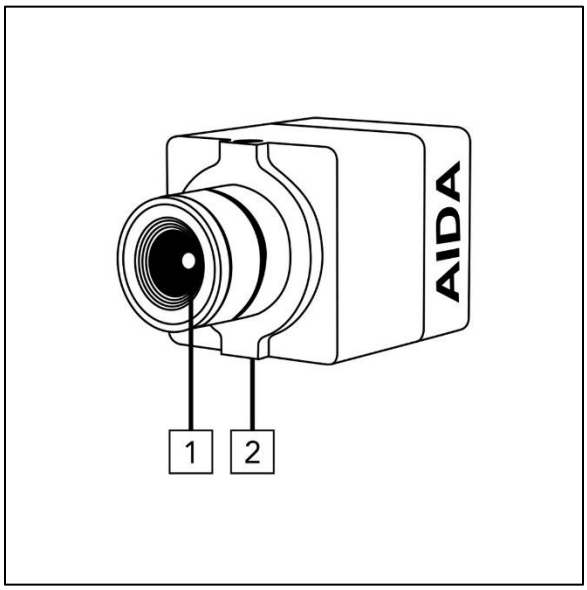
Just like the zoom seal, this rubber seal protects from water and moisture building up in the lens. Make sure this is back on snug when adjusting the focus.

⚠ If a tight seal is not made, you risk moisture and damage to the lens. Please double check this is securely on.

7. Mounting Holes

This camera has a top and bottom ¼" 20 mounting hole. This is directly built into the body for extra stability.

GEN3G-IPC-200

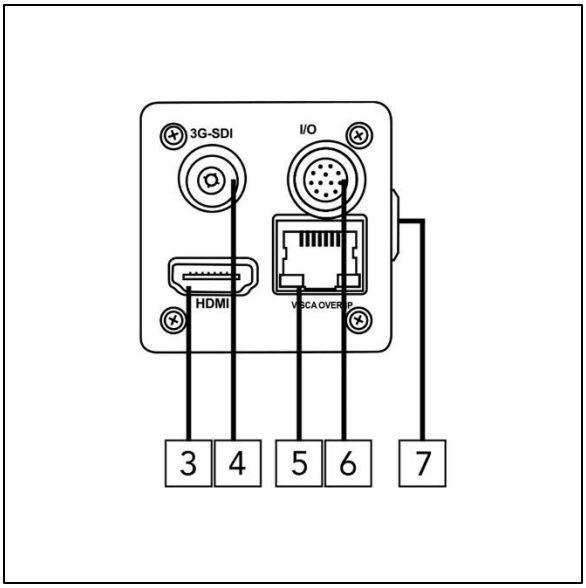


1. Pre-installed 4mm 5MP Lens

The camera comes pre-equipped with a swappable 4mm 5MP lens. If you do not like the slight distortion given from the lens, feel free to swap it with any CS-mount lens from our selection or others!

2. Mounting Holes

This camera has a top and bottom ¼" 20 mounting hole. This is directly built into the body for extra stability.



3. HDMI Output

This is the HDMI output of the camera.

4. 3G-SDI Output

This is the 3G-SDI output of the camera.

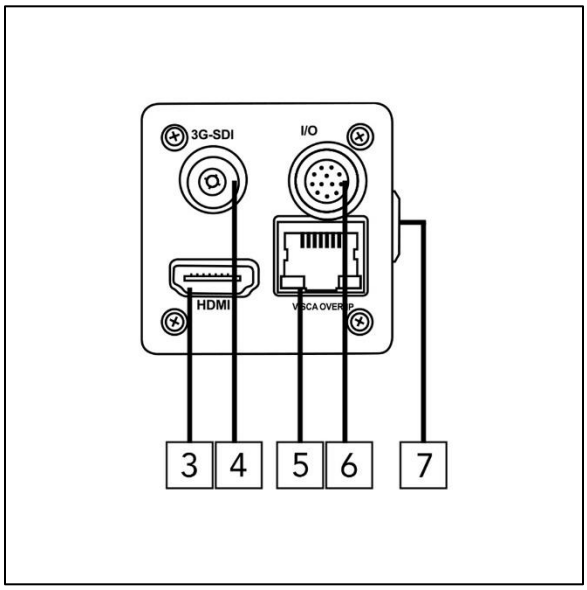
5. RJ45 Input for VISCA over IP

This is the RJ45 connector for ethernet based VISCA over IP. Connect this to your network to utilize the IPC function of the camera.

6. I/O Connector

The camera comes with a I/O connector cable that directly connects to this portion of the camera, and supplies power, control, sync input and audio embedment. This detachable cable makes it easy to move and transfer the cameras.

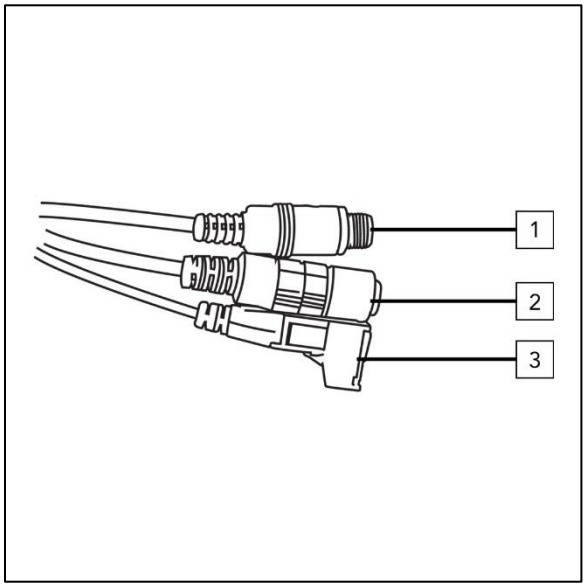
CONT.



7. DC IRIS Port

If your CS mount lens has a DC IRIS option (no P-IRIS) you can connect that here.

HD3G-IPC-100A I/O



1. DC12V Input

The red barrel is the DC12V input, to be used with the supplied power adapter or PoE+ injector. Remember that power should be within the 12V+/-(10%) tolerance range.

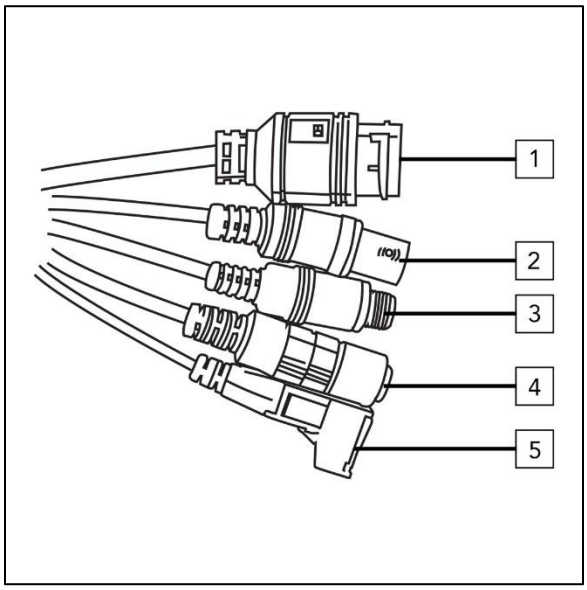
2. 3.5mm Line Input

If you want to embed audio over the SDI input, you can insert your line in microphone output into here. Microphones will require pre-amps if not at line level.

3. RS485 Connection

To use RS485 serial connection, the green terminal block at the end of the I/O cable can be used to communicate serial VISCA to the camera.

HD3G-IPC-IP67 / MINI / TF



1. RJ45 Input for VISCA over IP

This is the RJ45 connector for ethernet based VISCA over IP. Connect this to your network to utilize the IPC function of the camera.

2. 3G-SDI Output

This is the 3G-SDI output of the camera.

3. DC12V Input

The red barrel is the DC12V input, to be used with the supplied power adapter or PoE+ injector. Remember that power should be within the 12V+/-(10%) tolerance range.

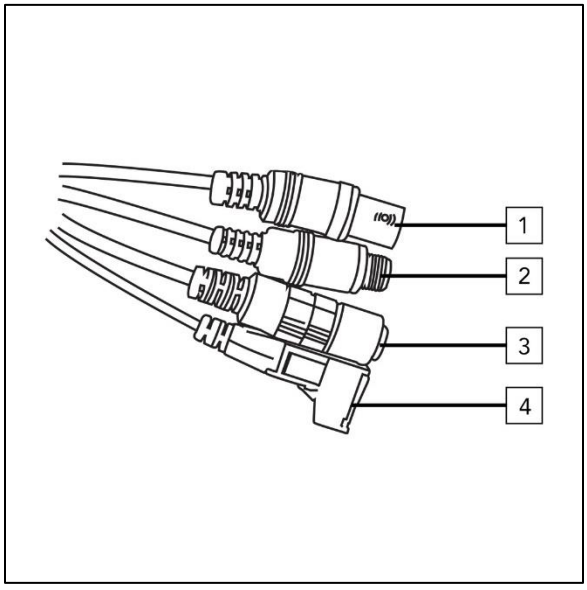
4. 3.5mm Line Input

If you want to embed audio over the SDI input, you can insert your line in microphone output into here. Microphones will require pre-amps if not at line level.

5. RS485 Connection

To use RS485 serial connection, the green terminal block at the end of the I/O cable can be used to communicate serial VISCA to the camera.

GEN3G-IPC-200 I/O



1. Genlock IN

Sync up the GEN3G-IPC-200 by inputting a tri-level sync signal into this BNC connector.

2. DC12V Input

The red barrel is the DC12V input, to be used with the supplied power adapter or PoE+ injector. Remember that power should be within the 12V+/-(10%) tolerance range.

3. 3.5mm Line Input

If you want to embed audio over the SDI input, you can insert your line in microphone output into here. Microphones will require pre-amps if not at line level.

4. RS485 Connection

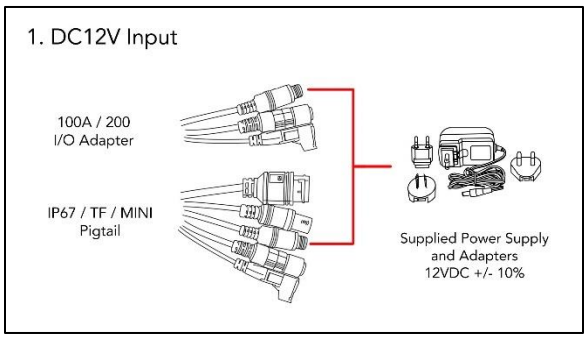
To use RS485 serial connection, the green terminal block at the end of the I/O cable can be used to communicate serial VISCA to the camera.

Connecting and Operating

Powering the Camera

Connecting to the supplied DC12V power supply

Use the supplied factory adapter and preferred plug type to sufficiently supply power to the cameras.



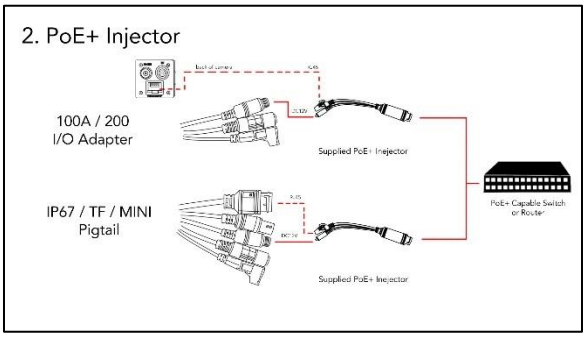
1 Pick your preferred plug type out of the adapters securely fasten the end with the supplied factory adapter.

2 Fasten the barrel portion of the supplied factory adapter into the red barrel of either the I/O adapter, or pigtail of the camera.

⚠We highly recommend using the supplied factory adapter, and not a third party adapter. Doing so may cause internal damage to the camera. If you are missing the adapter, please visit aidaimaging.shop to purchase a replacement.

Connecting the camera via PoE+ (Power over Ethernet Plus/ IEEE802.3at standard)

Every purchase comes with a PoE+ injector, which you can use to make the camera PoE+ adaptable. Please refer to the power supply of the switch you use for more info on power and wattage.



1 Use a Cat5e or better patch cable to connect to a PoE+ compliant switch or router.

2 Fasten the PoE+ injector's male barrel into the female red barrel of the I/O adapter or pigtail. Next, fasten the male RJ45 portion into the back of the camera, or pigtail RJ45 of the camera.

3 Lastly, insert the male Ethernet connection going from the PoE+ switch

into the female adapter of the PoE+ injector.

⚠ If the camera does not turn on, please check the PoE+ injector to see if a there is a LED light lit up. If it is lit up, then power is being processed through the injector.

⚠ The PoE+ injectors are not perfect products, and are known to fail if neglected and exposed to aggressive weather elements. If you think the PoE+ injector is causing an issue, try swapping it with another one, or purchase one from our store at aidaimaging.shop.

◊ NOTE: In some cases, PoE can be known to power the camera (if the wattage exceeds the 18+ initial draw.) We recommend PoE+ as it's the most reliable with the adapter.

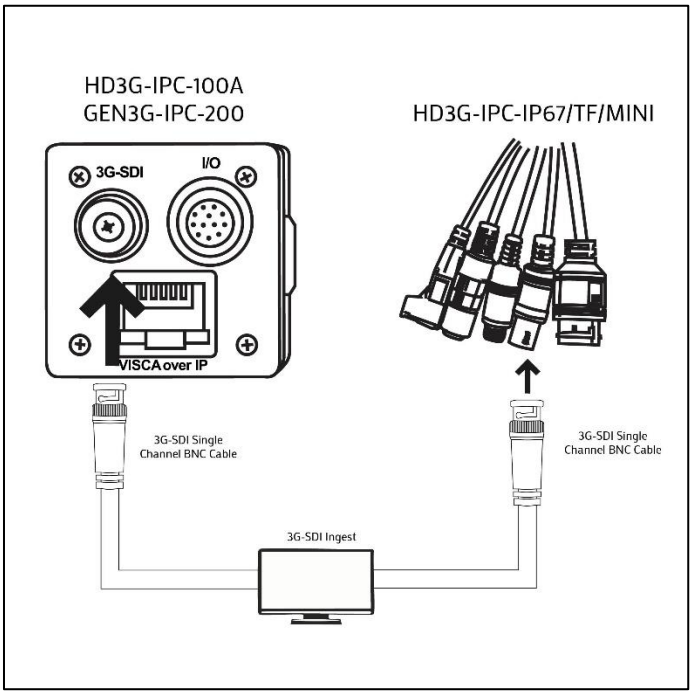
Connecting to a Ingest

Connecting to an SDI Ingest

Easily connect to a field monitor, SDI broadcast equipment, or adapter by securely connecting the SDI port to the ingest.

1 Securely fasten a 3G-SDI cable to the output of the camera / pigtail, and securely fasten the other end to your ingest.

◊ NOTE: Some SDI monitoring equipment will display a "out of range" or blank image. This is most likely due to the incorrect resolution between the camera and equipment. The cameras are default at 1080p 30fps. If you need to change it, we recommend plugging it into a device that can read all resolutions, or using VISCA over IP to change the resolution of the camera if you don't have a device that can connect.

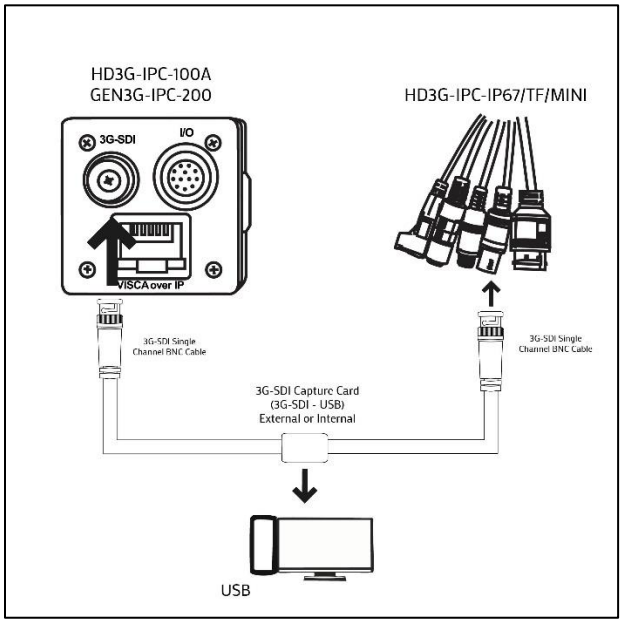


Connecting to a Computer or Laptop via SDI

Laptops and Computers don't directly ingest video. You will need an 3G-SDI to USB adapter. (sold by various retailers)

1 Connect 3G-SDI cable to the SDI output on the back of the camera or pigtail. Plug the other end into your 3G-SDI capture card.

2 Follow the instructions from your 3G-SDI capture card and plug into your computer / laptop.



◊ NOTE: Not all 3G-SDI capture cards are built the same. Please ensure you have a capture card that matches your production needs, such as HD, 60fps, etc.

Connecting an Ethernet Cable for VISCA over IP

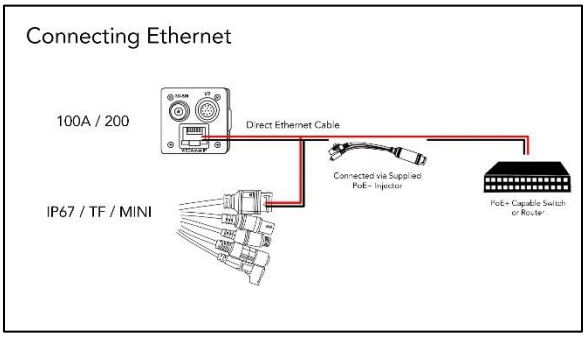
To utilize VISCA over IP, an ethernet cable establishing connection to your switch or router is required.

1 Connect a ethernet cable to the back of the camera, or RJ45 port located on the pigtail of the camera.

2 Connect the other end of the Ethernet cable back into your designated switch, network or router.

◊ NOTE: To avoid packet loss and communication errors, we recommend keeping these VISCA over IP devices on a separate network from your internet. This is not required, but can be helpful for situations where the cameras are having a hard time with commands.

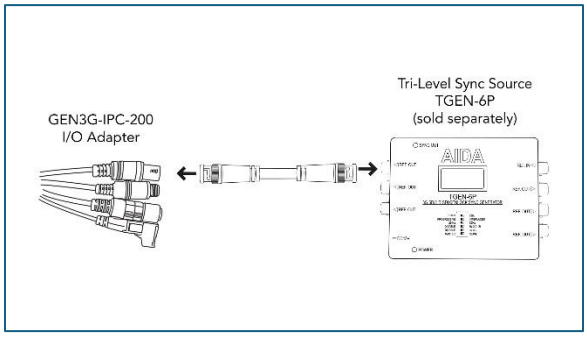
◊ NOTE: The default VISCA over IP address of the cameras are 192.168.1.188. If you want to connect multiple of these, you would need to set them up in the OSD menu via the 3G-SDI video.



Connecting an SDI Cable for Genlock Sync (GEN3G-IPC-200 ONLY)

You can easily connect a BNC cable to the I/O connector of the GEN3G-IPC-200 to initiate a synced SDI output.

1 Securely fasten a 3G-SDI cable to the output of the camera's I/O cable labeled "GEN." Securely fasten the other end to your tri-level sync generator, such as our TGEN-6P (sold separately.)



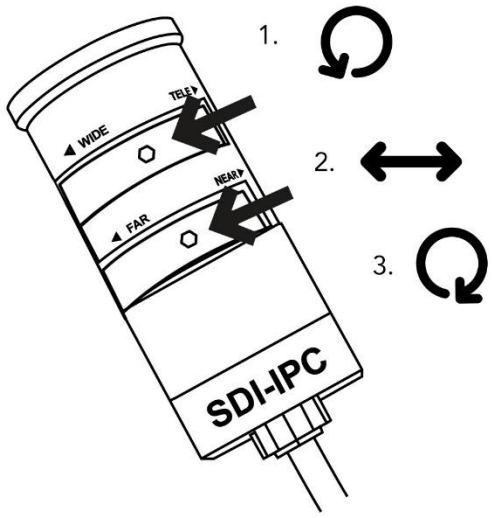
◊ NOTE: GENLOCK is not natively ON for the GEN3G-IPC-200. You need to enter the menu, select genlock and turn the feature on to utilize it.

Adjusting the Zoom Lens (TF only)

Utilizing the 0550V Lens

The 0550V lens adjustment requires the hextool (or hex shape female tool) to adjust the focus. We recommend locking these in case of vibrations of drift.

1 Gently uncap the rubber silicon protecting the locking screws for the focus and zoom.



2 Once exposed, use the hex tool given to slightly unscrew (don't remove) the knob. This will give leeway to adjust the zoom and focus. We recommend setting the zoom first, then focusing afterward.

3 Once complete, lock the knobs by screwing them back in clockwise, and locking them into position. Gently replace

the rubber silicon protecting the knobs, and make sure it covers the whole area. Failure to do so will get water and moisture into the lens, and potentially damage the camera.

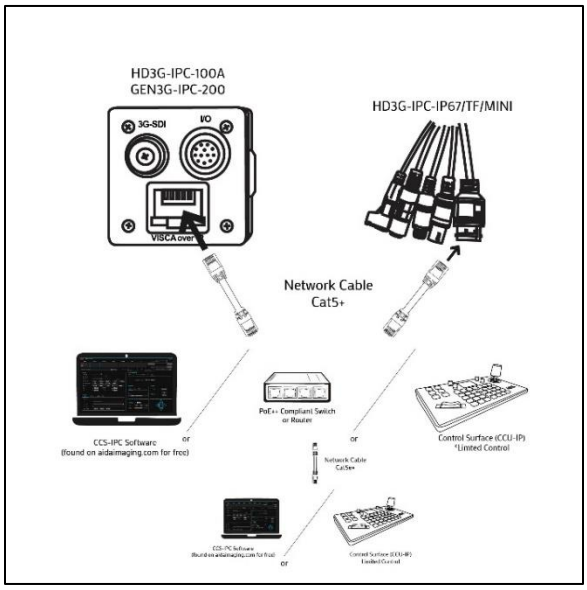
⚠If a tight seal is not made, you risk moisture and damage to the lens. Please double check this is securely on!

Connecting to a Controller

The SDI-IPC can be controlled via the RS845 and the RJ45 port on the cameras. The camera supports both VISCA Serial, and VISCA over IP (UDP).

Connecting to a VISCA over IP device

The main feature of the IPC cameras allows for easier setup of VISCA over IP cameras for a micro-POV camera.



1 You can directly connect a ethernet cable to the back of the camera, or pigtail of the camera to a computer, control surface, or switch/router to get VISCA over IP running. You could also connect to other devices on the same network using a network switch.

2 Once you are connected, ensure that the cameras are on the same network as the devices. If DHCP is not available, you will need to change the cameras to match your devices IP on the network, or change your device's IP to match the cameras IP. The default IP will be 192.168.1.188. If you want to change the IP address of the camera, please visit the OSD options under settings -> network to change any of these settings.

3 When connecting for control, the following settings usually work:

Communication / Type: VISCA UDP, SONY VISCA
IP Address – IP Address of your camera.
VISCA port Number: 52381

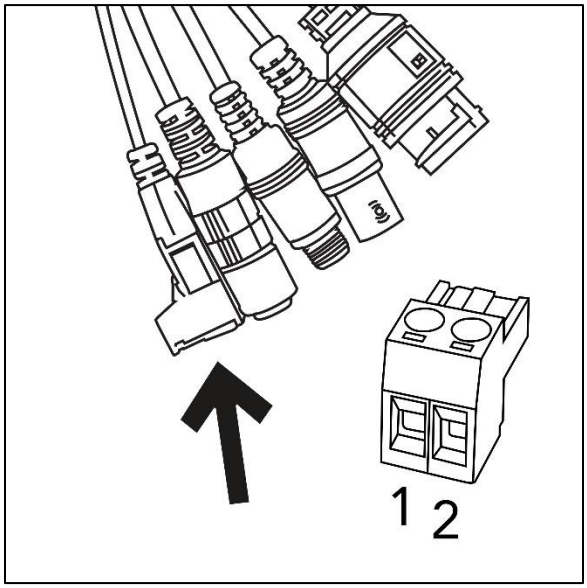
You can change any of these settings in the web UI of the camera.

◊ NOTE: Majority of the time, errors in connection are usually because the IP of the devices are not in the same range. Ensure that the first 3 triplets match the cameras, with the last triplet being a different number to make a unique network ID.

Ex:
Camera – **192.168.1.**188
Controller / PC – **192.168.1.**(2-254)

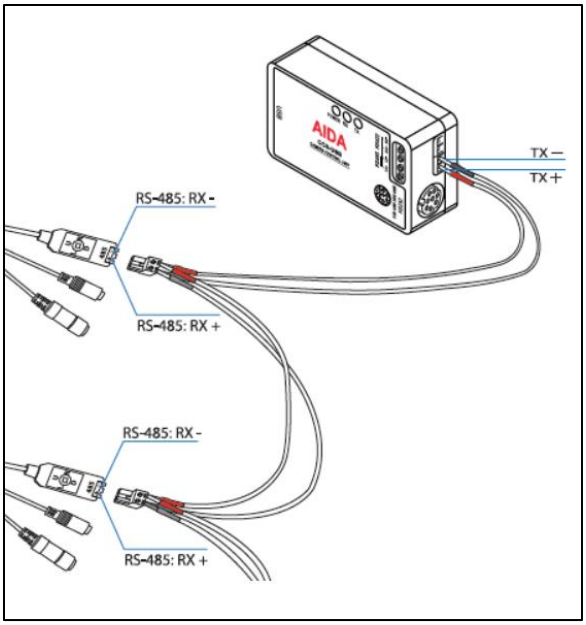
Connecting to a RS485 device

The IPC series cameras can connect to the traditional RS485 workflows if necessary! Each I/O cable or pigtail comes with a green RS485 terminal block you can use to communicate serial Visca.



1 For RS485 control, there are only 2 ports – the TX A+, and TX B- (we will refer to them as +/-.)

2 Connection to these ports will require conductive wire, such as spliced ethernet wire, or fine copper wire. The guide to connecting these to devices (Such as our CCS-USB) will require a match between the +/+ and -/- of the devices.



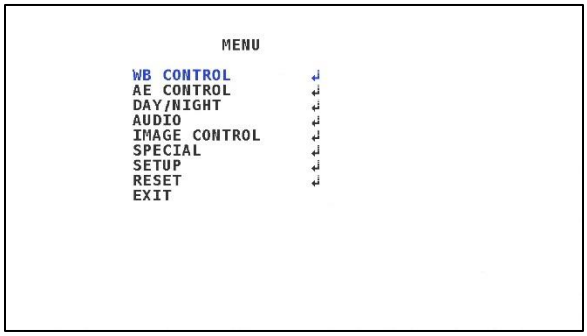
3 Once connected, you can change the settings of the serial settings on the camera via the OSD menu, where you can find the baudrate, address ID, etc.

◊ NOTE: Serial VISCA requires a bit more attention, as the baudrate, address ID, and system settings for most devices need to match. Double check wiring, and when in doubt, just flip the wires! You got a 50/50 chance anyway.. 😁

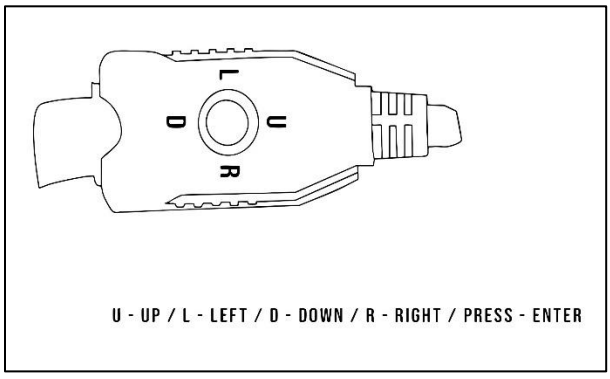
OSD Menu Operation

The OSD menu operation is the best way to fully change all the settings on your camera. Here we will explore the options you have at your disposal to get the most out of your AIDA camera!

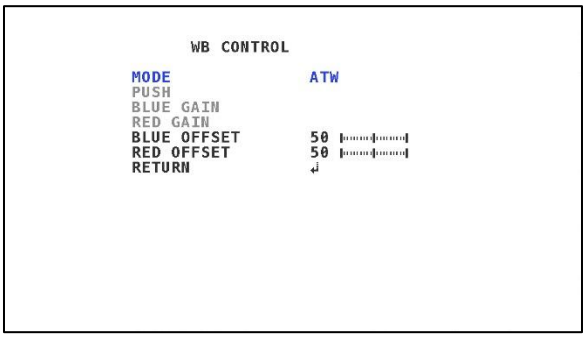
If you have any questions or need more info on any of these settings, please feel free to message our support team.



Using the joystick attached on the I/O cable, or pigtail of the camera, you can navigate through the menu using the U, D, L, R movements, and click of the joystick in neutral position.

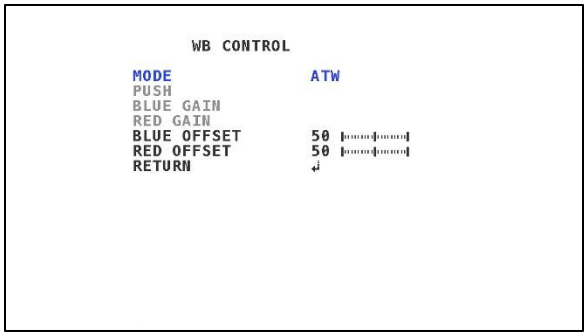


WB Control (White Balance)



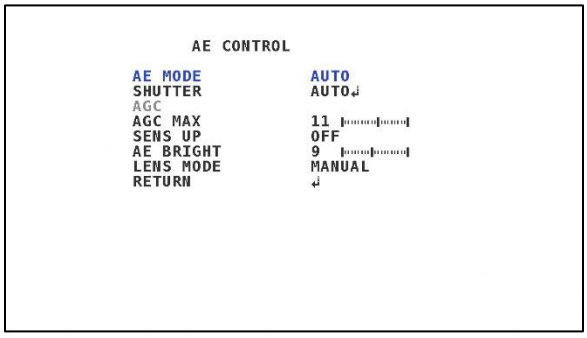
- **Mode:** Changes in between the white balance modes of the camera.
  - **ATW:** Autotracking allows the temperatures to rise up to the 11000K mark.
  - **AWB:** Auto white balance allows temperatures to rise up to the 7000K mark.
  - **PUSH:** A calibration setting for One Push mode. Hold a blank white piece of paper in front of the lens (within focus distance) and click this button. Best option for shading multi-cameras.
  - **INDOOR:** Keeps the white balance cooler (higher K)
  - **OUTDOOR:** Keeps the white balance warmer (lower K)
  - **MANUAL:** Manually adjust the white balance red and blue.
- **PUSH:** Push becomes available in PUSH WB mode. Use when ready to calibrate the white balance.
- **BLUE GAIN:** Change the blue gain of the white balance when MANAUL mode is selected.

Cont.



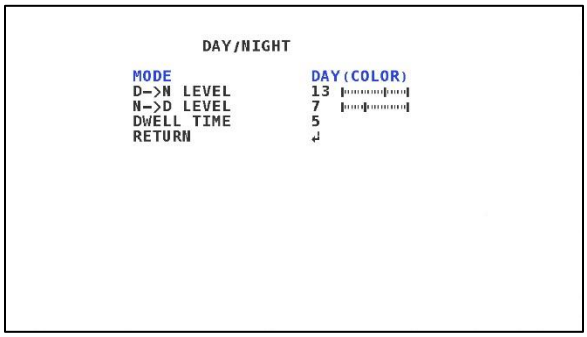
- **RED GAIN:** Change the red gain of the white balance when MANAUL mode is selected.
- **BLUE OFFSET:** When AWB is selected, adjust the blue coloring if the image appears to be slightly off.
- **RED OFFSET:** When AWB is selected, adjust the red coloring if the image appears to be slightly off.
- **RETURN:** Head back to the main menu.

AE Control (AutoExposure)



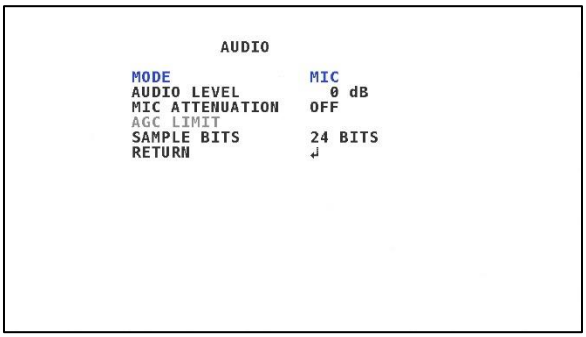
- **AE Mode:** Changes in between the AE modes of the camera.
  - **AUTO:** Automatically adjusts the exposure no matter the lighting condition.
  - **MANUAL:** Manually adjust the camera's exposure, such as shutter, AGC and brightness.
  - **SHUT FIX:** Manually adjust the electronic shutter speed, max AGC and brightness.
- **SHUTTER:** Depending on the mode, the shutter speed can be adjusted. Auto gives you a deblur option, while manual and shutter fix allow you to manually set the electronic shutter speed.
- **AGC:** AutoGainControl helps assist in adding light to darker areas on scene. By raising this, you will be brightening the darker portions of the scene.
- **AGC MAX:** AGC Max sets a top limit on how much AGC can be added to a scene. Perfect for when the AGC over-assists, you can keep a threshold just in case.
- **SENS UP:** Sensitivity up allows the sensor to increase light intake, but sacrifices frame capture in scene.
- **AE BRIGHT:** Adjusts the overall brightness of the scene, regardless of how well-lit the target is.
- **LENS MODE:** A quick-select way to adjust the AE, without the hassle of changing a lot of settings.
- **RETURN:** Head back to the main menu.

Day/Night Settings



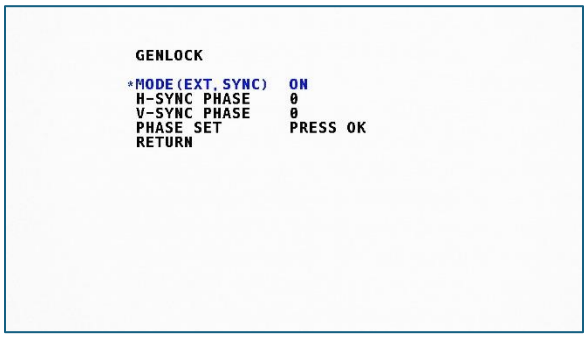
- **MODE:** Swap between the camera's day and night function. Activating night removes the IR filter, and increases IR receptivity in the dark.
  - **DAY (COLOR):** Normal setting amongst operation of the camera. IR filter is activated in this mode.
  - **NIGHT(B&W):** Toggles the IR filter out so the camera because sensitive to IR lighting. This effectively removes color from the image.
  - **AUTO:** Depending on the amount of light the sensor captures, this will automatically toggle the IR filter without having to change settings.
- **D->N LEVEL:** Change the change amount of sensitivity to light it requires to swap from day to night.
- **N->D LEVEL:** Change the change amount of sensitivity to light it requires to swap from night to day.
- **DWELL TIME:** Change the amount of time before the initiation of transition is done. The higher the dwell time, the longer it takes to swap between the modes.
- **RETURN:** Head back to the main menu.

Audio Settings



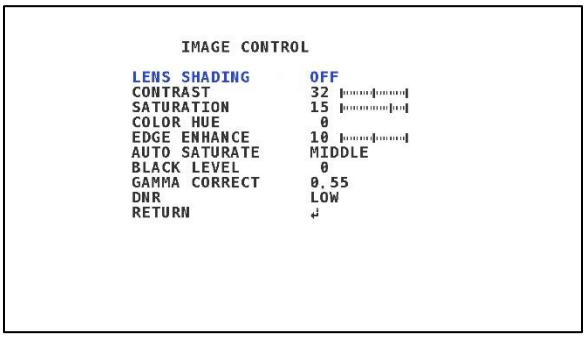
- **MODE:** Toggle on or off the camera's audio embedment feature.
  - **OFF:** Audio embedment is off
  - **MIC:** Use if the audio you are using is a microphone.
  - **LINE:** Use if the audio you are using is at line level.
- **AUDIO LEVEL:** Increase or decrease the input's source audio. We recommend not increasing too high as unwanted noise may accumulate / be produced.
- **MIC ATTENUATION:** Reduces the intensity of the audio signal over embedment.
- **AGC LIMIT:** Sets a threshold for how much gain is added to the signal, to stop from producing unwanted noise.
- **SAMPLE BITS:** Change the sample audio size up to 32 bit.
- **RETURN:** Head back to the main menu.

Genlock (GEN3G-IPC-200 ONLY)



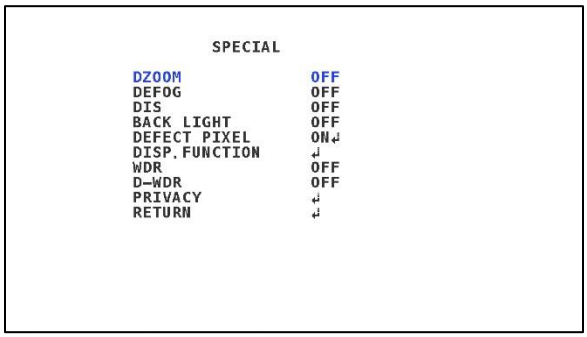
- **MODE (EXT. SYNC):** Enables Genlock – the default is off.
- **H-SYNC PHASE:** Adjust the horizontal line phase set.
- **V-SYNC PHASE:** Adjust the vertical line phase set.
- **PHASE SET:** One you adjust both the H and V phases, click this to set them.
- **RETURN:** Head back to the main menu.

Image Control



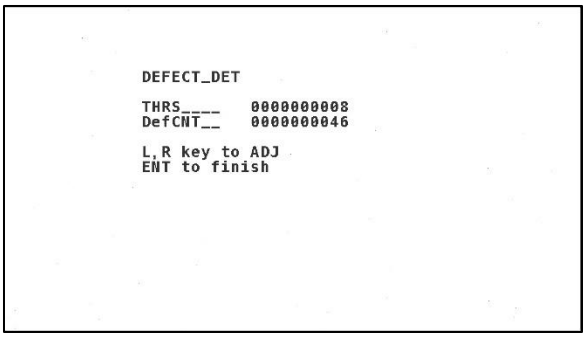
- **LENS SHADING:** Adds a slight lens shade around the edges of the image.
- **CONTRAST:** Adjust the contrast of the overall image.
- **SATURATION:** Adjust the saturation of the overall image.
- **COLOR HUE:** Adjust the overall color hue of the image.
- **EDGE ENHANCE:** Adjust the sharpness of the overall image
- **AUTO SATURATE:** Automatically have the camera adjust the saturation by level.
- **BLACK LEVEL:** Adjust the black level of the camera by increase or decreasing the appearance of black on the image.
- **GAMMA CORRECT:** Adjust the gamma correction with this setting.
- **DNR:** Digital noise reductions helps reduce noise within the image.
- **RETURN:** Head back to the main menu.

Special



- **DZOOM:** Allows the camera to slightly zoom in, effectively cropping the picture. This setting can be changed by turning the option on, and entering the menu to adjust the zoom level.
- **DEFOG:** Allows the option to defog a scene, adding clarity in foggy environments.
- **DIS:** Digital Image Stabilization allows the camera to slightly crop to lessen the impact of vibrations capture on video.
- **BACK LIGHT:** Gives options to help improve scene quality between the subject and background being captured.
- **DEFECT PIXEL:** This option helps remove dead/stuck pixels on screen. By entering it, you will be met with the following screen:

Cont.

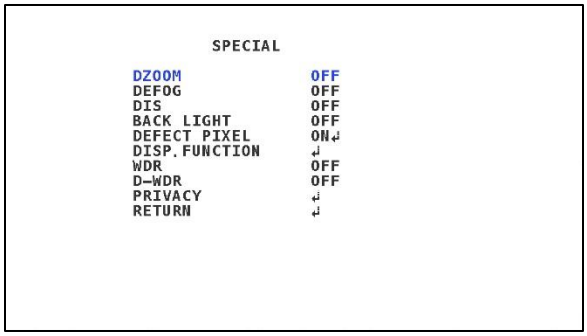


First, you will start off by completely blacking out the image on the camera (covering the camera lens, or blocking any light from hitting the lens)

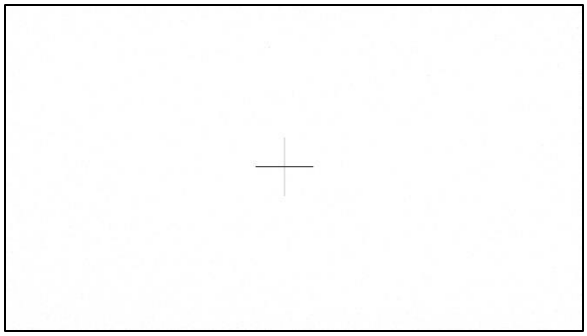
Next, take a look at DefCNT – this is the amount of pixels that are “defective” or blinking in a sense.

You will then click R on the joystick to raise the THRS (threshold.) Raising this number will eventually get rid of the majority of defective pixels on screen. Once done, you just need to press the joystick once or twice to get out of the menu.

◊ NOTE: Once you set this setting, if you enter the defect pixel setting, it will revert back to the original setting.

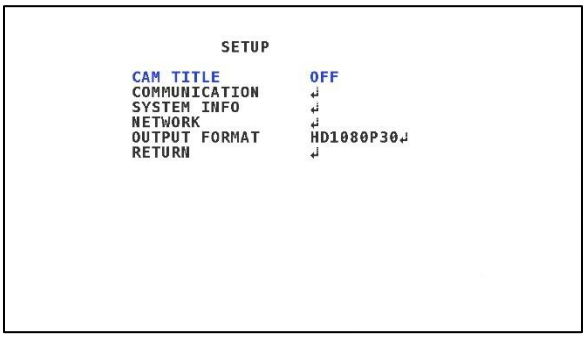


- **WDR:** Wide Dynamic Range allows you to adjust the difference between a scene with a lot of light, and very little light. This helps match the scenes to the best of the cameras ability.
- **D-WDR:** Digital Wide Dynamic Range acts the same as WDR, but is done via the cameras software, and not via the camera sensor side. Effectively the same as WDR but less effect.
- **PRIVACY:** Allows you to set up privacy bars and shapes to block out certain information. These privacy shapes can be manipulated by size, color and placement. Some creative examples that privacy shapes can create our crosshairs in the center of screen.

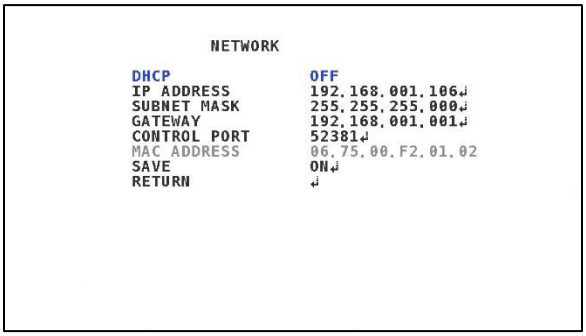


- **RETURN:** Head back to the main menu.

Setup

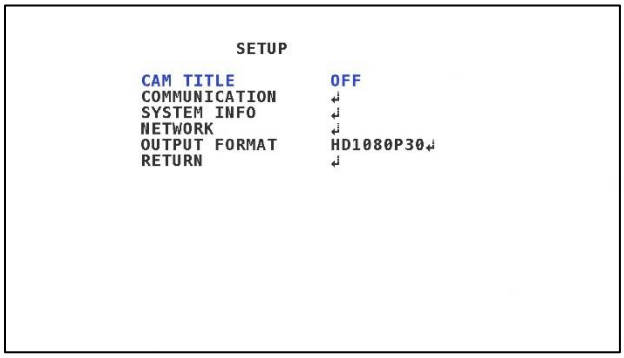


- CAM TITLE: Adds a small bar at the top of the screen that shows the address ID.
- COMMUNICATION: Adjust the camera ID and baudrate for serial VISCA here.
- SYSTEM INFO: Gives you the model name and software version of the camera.
- NETWORK: Adjust the camera's IP and VISCA over IP information here.



- **DHCP:** Enable DHCP services, to automatically assign a IP Address to the camera
- **IP ADDRESS:** Change the IP address of the camera here. By entering this selection, you can use the UDLR to change each number, and head back to this menu by clicking once.

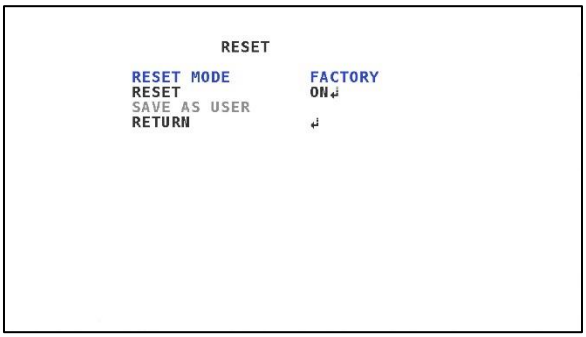
- **SUBNET MASK:** Adjust the subnet mask of the camera here.
- **GATEWAY:** Adjust the gateway of the camera here.
- **CONTROL PORT:** Adjust the VISCA over IP port for the camera here.
- **MAC ADDRESS:** You cannot change the mac address of the camera, but you can view it here.
- **RETURN:** Head back to the SETUP menu.



- OUTPUT FORMAT: Scroll left and right through the formats to choose the desired output you want. Clicking once will confirm the setting, which will then tell you to confirm the setting.

- **RETURN:** Head back to the main menu.

Reset (Factory Reset)



- RESET MODE: Choose between factory and user reset.

- RESET: Choose if you want to reset the camera. There is no confirmation, so clicking so will reset right away.

- SAVE AS USER: If USER reset is saved, the desired profile saved on the camera will be recalled to those specific settings.

- **RETURN:** Head back to the main menu.

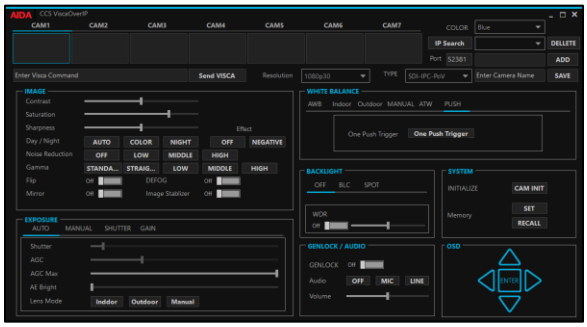
Setting up the CCS-IPC Software

With VISCA over IP, you make controlling the camera easier than RS485! To commemorate such a feat, we made a free software available via the Microsoft store (sorry Apple users ☹).

IPC Software Link Here:

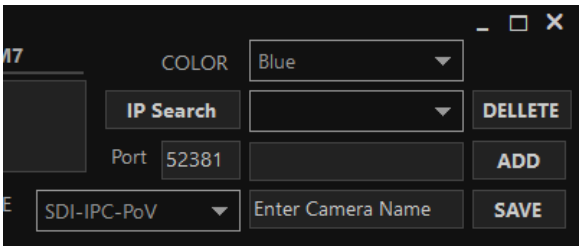
For setup – please refer to page 24 on how to connect your camera to your network to get VISCA over IP started.

When opening the software for the first time, you will be met with a plethora of features:



The first step to setting up a camera is to select which CAM you want to get started with. Usually, a normal person would click Camera 1, but feel free to click whichever camera you want to set up first.

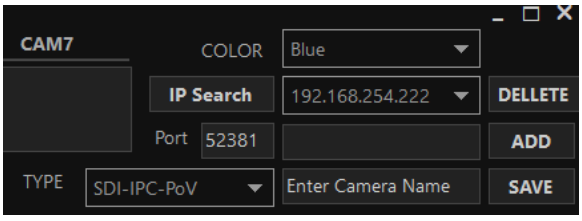
Once highlighted, you will look at the top right section.



Ignoring color, IP search is an automatic way to help find AIDA cameras on the network. Once you click it, it will scan the network for AIDA cameras. If you set up everything properly, then IP addresses will populate here and make your job easier!

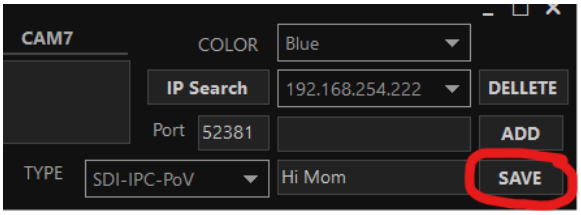
If you don't, don't feel bad! You can enter the manual IP next to the ADD section.

Once your IP is loaded up, you will then check the next two slots: PORT and TYPE:

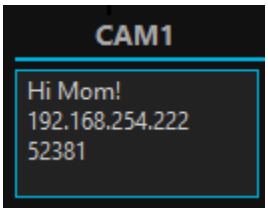


Port should be the standard VISCA over IP port AIDA uses, 52381. Type refers to the type of AIDA Camera you are trying to use. Since this is a SDI-IPC guide, you will most likely have a SDI-IPC camera, so SDI-IPC-POV is the type to choose.

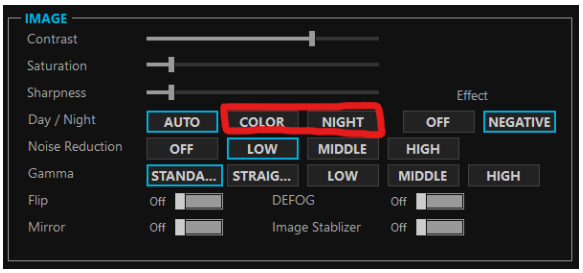
Once you set those two settings, all that's left to do is set up a name and save the setting!



After clicking save, you will notice whichever camera you chose to save on should now have settings populated:



Congrats! You connected to your first camera. The best way to test connectivity arguably is using the NIGHT / COLOR effect. By toggling between these two settings, your camera should go in and out of color.

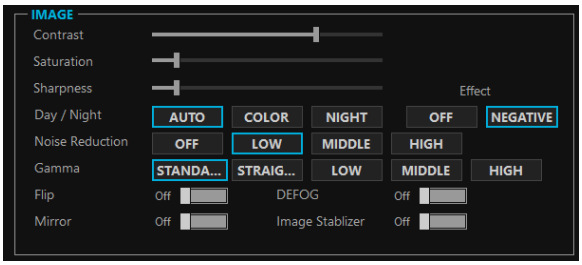


If not, double check your connection, IP addresses, and connections to the camera. Its most likely something was inputted correctly!

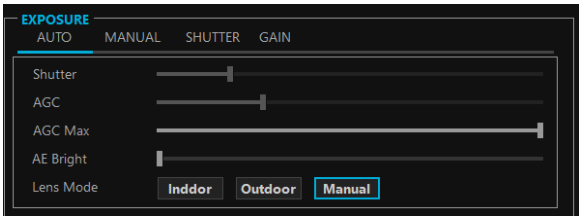
If you have multiple cameras, this is where you set them up individually. Don't forget to choose a different CAM, or you may overwrite your settings on another camera. This software allows you to only control up to 7 cameras, so choose wisely!

Touring the CCS-IPC Software

With the CCS-IPC software, you almost all settings from the OSD in the software.



Under image, you have all the settings you find in image control of the camera.



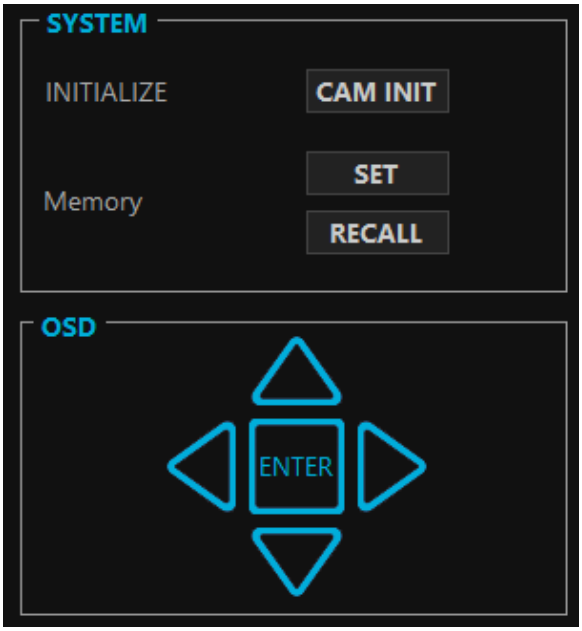
Exposure gives you all the options in the auto exposure settings of the menu.

Choose a white balance on the fly using the white balance sliders!

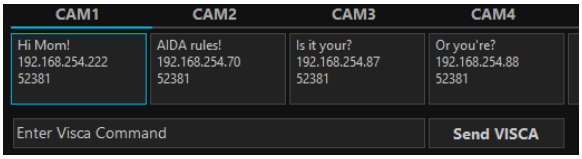
Here you can set the backlight, or genlock if you are using the GEN3G-IPC-200 settings!

Resolution allows you to change the resolution of the camera easily! Note that some resolutions aren't available for all cameras, so don't use one that's not available to your camera!

If you see something you want to control on the OSD, but cant get into the menu you can use the OSD directional pads to navigate the menu just like you would using the joystick!



You also have access to CAM INIT (factory reset) and setting and recalling the cameras status. Do note that SET and RECALL are PC based, so if you use this program on another computer but same camera, those saved settings WONT be saved.



Lastly, if you want to enter a specific VISCA command not found, then you can enter it in the line below.

Protocols and Appendix

VISCA Protocol

For the full extensive VISCA protocol list, please download the file found here, or our download page at aidaimaging.com/download.

Troubleshooting

How do I tell if my camera is on?

The best way to find out if your SDI-IPC camera is on is via the RJ45 port – if you see a green light on the pigtail, or lights out the RJ45 connector of the back of the 100A and genlock camera, then the camera is on!

I'm not getting any video out of the SDI?

Since the camera comes default at 1080p 30fps, some monitors or devices that are set to a different resolution / framerate will not display the video. The best option is to change the ingest resolution to match the camera first, then change it to your desired setting. If that doesn't work, you can always use VISCA over IP to connect to the camera and change the resolution via our CCS-IPC program!

I can't connect my camera to my network.

If you are using VISCA over IP, the majority of issues that pop up are networking. Since the cameras come at the 192.168.1.188 IP address, if you connect multiple cameras at the same time to your network, they will all be fighting for that IP address. Its best if you connect one at a time, change each individually, and then set up your network.

If set up properly, you should be able to ping each address of the camera (since it doesn't have a web UI.) You can then use the CCS-IPC to control the cameras.

Can this camera be powered on forever?

Our cameras are stress test for extended periods of time before being sent out!

Theoretically under perfect conditions, yes the camera can stay on forever. We recommend power cycling the camera once in awhile, as electronics do tend to glitch when on for long periods of time. We also cant promise that extreme conditions like power outages, voltage surges, and other dangers wont effect the camera, so its best to practice turning off the camera when you can!

How do I get rid of the fisheye on the camera?

Firstly, the curvature is from the LENS and not the camera. Since the lens have a wide HFOV, the slight distortion is normal amongst wide angle CS-mount / M12 lenses. To get rid of this, we recommend choosing an alternative lens like our CS6.0F, or M12-6.0F to keep get rid of the distortion.

How do I replace the lens on the camera?

Here is a small tutorial on how to remove the lens:

How do I swap out the lens in a WP model?

The only cameras that allow a swappable lens and are weatherproof are the HD3G-IPC-IP67 and HD3G-IPC-MINI.

They are 2 different mount lens, with the IP67 being a CS-Mount camera, while the MINI is a M-12 mount lens. As mentioned in the manual, the limitation you get with swappable lenses is from the size of the lens (needs to fit in the cap) and HFOV. If the HFOV is too wide, you will get image vignetting (since the circular cap is built for the default lens) so the only option you have is to get a more zoomed in lens.

If you abide by these two rules, then replacing them is easy!

Start by removing the weatherproof cap on the products. You can do this by twisting the caps counter clockwise to expose the bare lens. Keep note of the rubber seal on the caps – as those are needed for the IP67 rating. Failure to have those back on will result in moisture getting out, and damaging the camera.

Once you swap out the lens as seen in the previous message, you can throw back the cap on. We recommend focusing the camera before putting the cap back on, or else you will have a lot of fun removing and placing the weatherproof cap back on.

Warranty and Support

Warranty:

AIDA Imaging warrants its cameras and items to be free from defects under normal use. With that in mind, we fulfill 2 years of warranty from the date of purchase unless otherwise noted. Please refer to our website for more information at: aidaimaging.com/support

Support:

If you would like additional support or explanation on anything on this manual, please feel free to go to our FAQ page on our website at aidaimaging.com/support.

If you are in need of additional help, or have any
general questions, please feel free to contact us in these various ways:

Telephone: 909.333.7421

Email: Support@aidaimaging.com

Website: aidaimaging.com/support

We are open yearly, Mon-Fri 8A.M. to 5P.M. PST, excluding major U.S.A holidays and events.

Also, keep up to date with firmwares and new releases from AIDA Imaging by signing up for our newsletter, found on our website.

We do showcases on how our customers use our products on our Linkedin. If you are interested in submitting your case, we will happily extend the warranty of your product for another year if all criteria is met for your use case. For more info, please reach out to our marketing team at marketing@aidaimaging.com