

SH6 Series

Hardware Manual

Warning:

This device has been tested, certified by CE-EMC, and complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the device is operated in a commercial environment. This device 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. In this case, the user will be required to correct the interference at their own expense.

Note:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the device.

The copyright of this manual is held by SHENZHEN SINCEVISION TECHNOLOGY CO., LTD.

The product specifications and manual content are subject to change without prior notice.

We do not assume any responsibility for the results of using our product or applying this manual to any operation.

Introduction

Thank you for purchasing SSZN high-speed camera system "**SH6 series**" (hereinafter referred to as the System).

This manual contains the operating instructions and warnings required to use the System. Before using the System, please read the entire manual. If there are any unclear information in this manual, please contact SSZN using the contact information printed on the back of the manual.

After reading the manual, please store it associated with the warranty card in a safe place and review it if necessary.

Overview of the manual

- Introduction
This chapter provides an overview of the manual and safety precautions.
- **Chapter 1** - Settings
This chapter provides an overview of the various components that make up the system.
- **Chapter 2** - Specification
This chapter provides an overview of the system's specifications.
- **Chapter 3** - Warranty
This chapter provides an overview of warranty.
- **Chapter 4** - Contact SSZN
This chapter lists the contact information that should be used to contact SSZN when there is a system malfunction or when certain parts of the manual are unclear.

Symbols

The symbols used in this manual have the following meanings.

Icons / Symbols	Description
 IMPORTANT	This symbol indicates what should always be read.
 CAUTION	This symbol indicates instructions that should always be followed when using the software, or things to keep in mind when using the software.
 NOTE	This symbol indicates something that requires additional attention when using the system.
 REFERENCE	This symbol indicates the reference position.
" "	This quotation mark is used to indicate the name of the item on the screen, the reference, the dialog box name and the connector.
[]	This square bracket is used to indicate a menu name or a sub-menu name.

Safety and Proper Usage Instructions

To avoid harm to yourself and others, as well as damage to property, please carefully follow the following safety precautions.

SSZN has given full attention to the security of this system. However, ignoring the content of safety precautions and using this system incorrectly may result in potential losses and injuries, which will be explained below. Please pay careful attention to the safety precautions when using this system.

**Warning**

This symbol represents actions that may cause harm to people.
Serious injury.

**Attention**

This symbol represents actions that may cause harm to people.
May cause moderate injury or damage to physical property.

- The safety precautions to be followed are indicated by the following symbols.



The symbol indicates the need for cautious action.



The symbol indicates that attention must be paid.



The symbol indicates actions that are prohibited and must be avoided.



Warning

- Do not do anything that will damage the cable or plug.

(Do not damage the cable, do not modify the cable, do not use the cable near the heater, do not excessively bend, twist or pull the cable, do not place heavy objects on the cable, and do not bind the cable).

Using damaged cables may lead to fire, electric shock, or short circuits.

- Do not use power sources that exceed the rated value for power supply.

Exceeding the rated power may cause a fire due to overheating.

- Do not insert metal objects into the system or pour liquids such as water into the system.

To prevent fire, electric shock, or malfunctions caused by short circuits or heating.

- Do not disassemble or modify the system.

There is high voltage in the system, which may cause electric shock.

- Do not touch any conductive object with your hands when inserting or removing the power cord.

It may cause electric shock.

- Ensure that the power plug is fully inserted into the socket.

Not fully plugging in the power cord may cause a fire due to electric shock or heat.

- When there is a problem with the system, the power cord should be immediately unplugged.

- When foreign substances or liquids, such as metals or water, enter the system.

- When the outer box is damaged, such as due to falling.

- When the system emits smoke, strange odors, or strange sounds.

Using the system in these situations may lead to fire or electric shock.

- Do not use accessories for purposes not specified by the manufacturer.

It may cause damage to camera components of the system.



Notes

- When cleaning the system or not in use for a long time, be sure to unplug the power cord.

Connecting or keeping the system to a power source may cause a fire due to a decrease in insulation performance and discharge.

- When you are using laser or direct light, please consult us in advance.

- Do not place the system in areas with extremely high temperatures.

It may cause changes in the properties of the casing or internal components or cause a fire.

- Do not place the system in areas that are prone to producing oil fumes or steam, or in areas with a large amount of dust.

Oil, moisture, and dust can conduct electricity and may cause fire or electric shock.

- Work environment requirements: temperature $-10\sim 50\text{ }^{\circ}\text{C}$, humidity $\leq 95\%$ RH, altitude ≤ 2000 meters, no icing, no condensation.

Using the system beyond the above limits may cause malfunctions.

- Storage environment requirements: temperature $-20\sim 60\text{ }^{\circ}\text{C}$, no condensation.

- During transporting, please remove the connecting cable and use the original packaging or a dedicated suitcase.

Do not transport the system in environments with temperatures below $-20\text{ }^{\circ}\text{C}$ or above $60\text{ }^{\circ}\text{C}$. Additionally, it is important to prevent the condensation during transportation.

Electrostatic
sensors.



Clean the Surface of the Image Sensor

image

Please read the following instructions and be extra careful when cleaning the surface of the image sensor.



- Always take appropriate anti-static precautions when cleaning or working near image sensors.
- Do not use any form of cleaning tools that uses electrostatic or "charged fiber" technology.
- Before working near the camera sensor, please release any static electricity accumulation in your body by touching the grounded metal surface.
- Please clean the dust on the surface of the image sensor in a dry environment.



- To remove stubborn pollution, use pure Isopropyl Alcohol (IPA) in the highest grade (such as in VLSI grade) and an optical wiping cloth in "dust-free room" grade.
- Special care must be taken by gently wiping the entire sensor in one go.
- Do not rub to avoid abrasive damage to the fragile optical coating on the glass surface.

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1

Chapter 1 Settings

This chapter provides an overview of the various components that make up the system.

1.1. The Components and Accessories of the System

1.2.1. Components

Please refer to the attached packaging list for the standard components and accessories of this product.



NOTE

This system does not include a lens.

1.2.2. Accessories

The system has the following accessories.

1. Dedicated suitcase
2. Network cables and power adapter
3. DAQ options
4. USB flash drive (FastPhoto software installation package and related manuals)



NOTE

Lens, lighting equipment, and other types of options are available. Please contact our sales representative or distributor. Please refer to "4.1 Contact Information".



Only use the components and accessories specified in "1.1 The Components and Accessories of the System", such as AC power adapters/AC cables, and others.

1.2. Component Name

The system consists of components such as the camera, power adapter, and SSZN FastPhoto control software.



Cautions for camera and AC power adapter

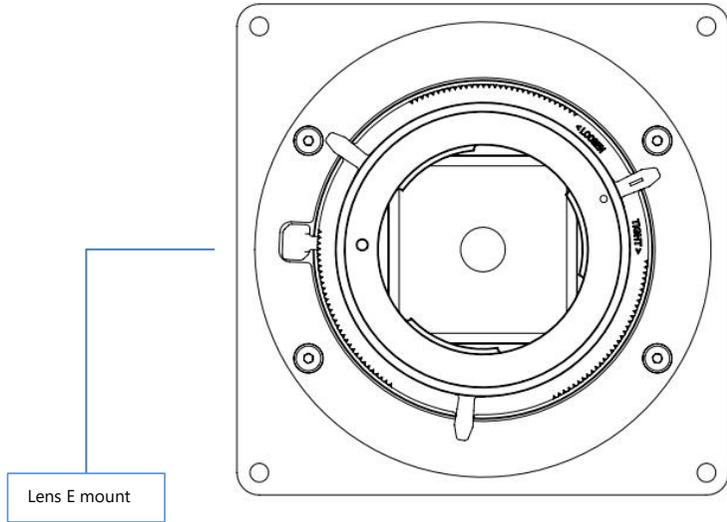
- Do not expose the camera, AC power adapter, and other optional components to impact.
- Do not use in areas with flammable gases or dust.
- Do not place it in unstable places, such as unstable platforms or slopes.
- Do not disassemble or modify the product.
- Do not expose the products to liquids such as water.

1.2.1. Camera body

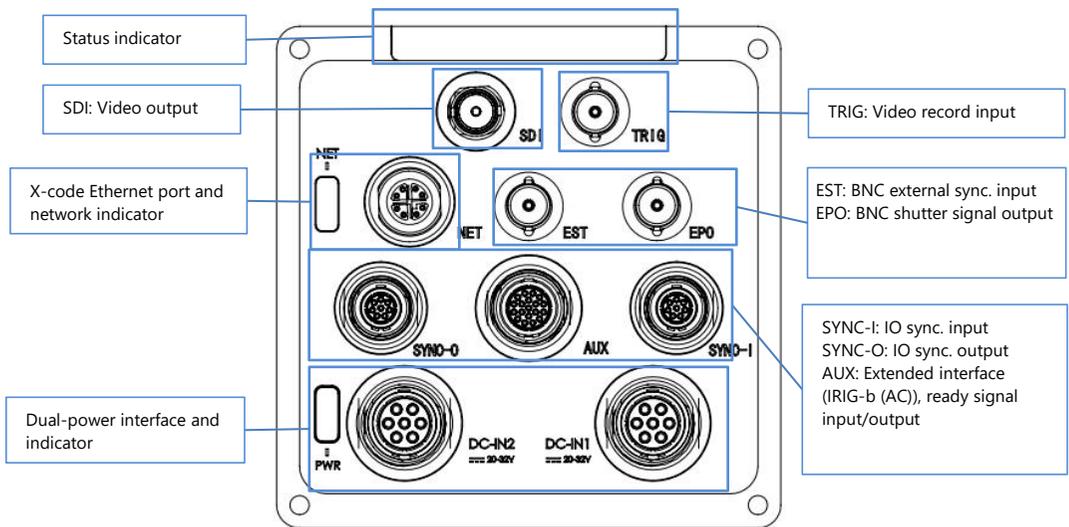
The camera body contains an IC memory for image recording and is designed to record uncompressed high-speed images. The back of the camera body is equipped with a video output terminal, which can playback the recorded images on the video monitor; Gigabit/10G Ethernet interface, allowing for comprehensive control and data download of cameras through connection to a PC; Input/output connectors that allow external synchronization signals, trigger signals, and IRIG time codes.

1.2.2. Name of Camera Parts

SH6-10X Series



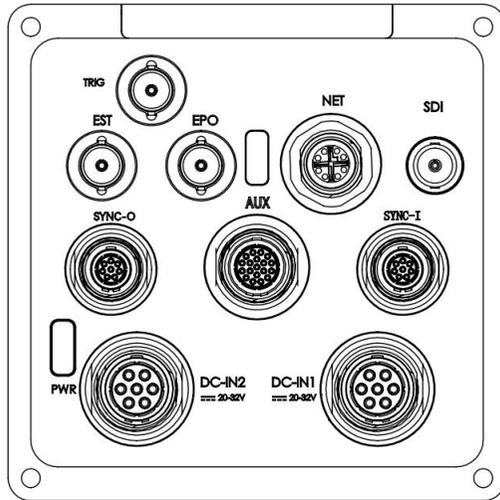
Front



Back

SH6-20X/50X Series

Except for changes in the location of the terminal interface, the functions are consistent. The specific arrangement is as follows:



1.2.3. Accessory Lens Mount Adapter

The lens of this camera has an E-mount, and the lens mount on the interface camera can use an adapter (such as E-to-F or E-to-C mount) according to the shooting purpose.



F-E Mount Adapter

1.2.4. The Status Indicator LED on the Back of the Camera

There are three indicator LEDs behind the camera. These LEDs display the status of the camera.

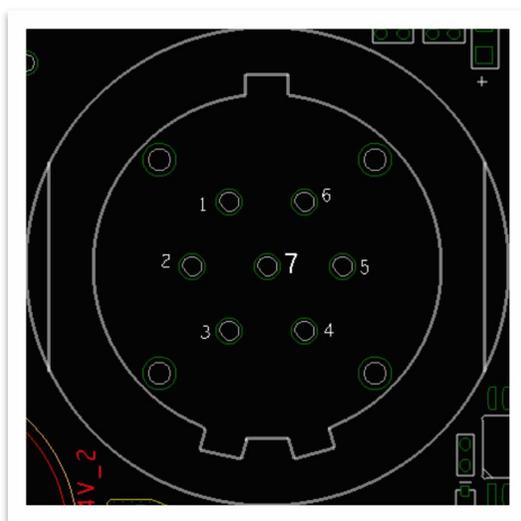


Purpose of LEDs	Color	Status
PWR (power indicator)		Power on
		Input voltage too low or faulty
NET (network indicator)		Normal network cable connection
		Abnormal network cable connection
Status indicator		Halted status
		Preview status
		Ready status
		Recording status
		Authorization expiration or camera malfunction

1.2.5. Power Input Interface

The camera power input interface can be connected with the AC power adapter in the product accessories or with a DC power supply (such as a UPS power pack).

When using other power sources, please strictly refer to the pin diagram below to construct the cable.



PIN NO.	Name	Input/Output	Description	Remark
1-3	DC24V IN	Input	DC +24V Input	
4-6	DC_GND	Input	DC +24V Ground Loop	
7	NC	/	Not connected	

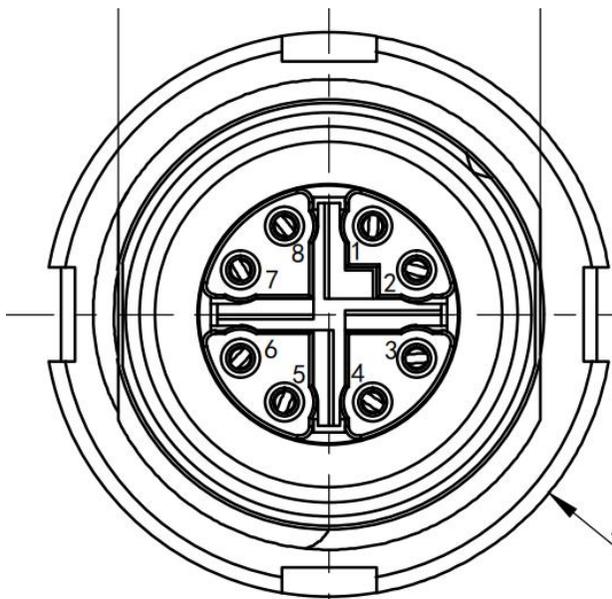
Power supply voltage: DC20~32V

Power consumption: About 55W for the version without SSD

Notes: There are two channels, DC-IN1 and DC-IN2 for the power input. Based on the input voltage, a more reliable power channel will be automatically selected as the power supply channel. It can withstand a maximum voltage input of 48V.

1.2.6. Ethernet Interface

The network interface of the camera end is X-code cnt12-m12-Z08X09W-Model



PIN NO.	Name	Input/Output	Description	Remark
1	TRX0+	Input		
2	TRX0	Input		
3	TRX1+	Input		
4	TRX1	Input		
5	TRX2+	Input		
6	TRX2	Input		
7	TRX3+	Input		
8	TRX3	Input		

The wiring method of the cable in the accessories is as follows:

Wiring method				
Signal	Core wire	A end 8 pin aviation plug	Core wire color	B end RJ45 plug (T- 568B)
TRX0+	23AWG, copper core, white-orange, stranded	1	White-orange	1
TRX0-	23AWG, copper core, orange, stranded	2	orange-orange	2
TRX1+	23AWG, copper core, white-green, stranded	3	White-green	3
TRX1-	23AWG, copper core, green, stranded	4	Green	6
TRX2+	23AWG, copper core, blue, stranded	7	Blue	4
TRX2-	23AWG, copper core, white-blue stranded	8	White-blue	5
TRX3+	23AWG, copper core, white-brown, stranded	5	White-brown	7
TRX3-	23AWG, copper core, brown, stranded	6	Brown	8

	Braided shield and foil shield	Outer case	Braided shield and foil shield are connected respectively at A end and B end	Outer case
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1.3. Input/output Signal Type

This camera can input and output through I/O cables, and the signals that can be input and output from the I/O cables are as follows.



Do not input signals other than the specified ones into each connector.

Be particularly careful when using, as there is a risk of damage to both input and output devices.



REFERENCE

Please refer to "10.4 I/O Settings" in the "FastPhoto User Manual" for detailed settings.

The following are I/O connectors and related signals.

1.3.1. TRIG Signal Input Interface

Function: TRIG signal input

Interface type: BNC connector

TRIG Input	Signal Logic Level: CMOS Level, 5V pull up Low Logic Level: -0.5V~1V High Logic Level: 3.5V~5V
	Function: In the READY state, the trigger enters the recording state through the contact input between the shielding layer of the BNC connector and the center pin (switch on/off). The center pin usually has voltage flowing through it. Be careful to avoid contact with other pins.

Pin Description:

PIN NO.	Name	Input/output	Description	Remark
1	TRIG1 IN	Input	5V CMOS	Isolated Inputs
Outer case	TRIG1 IN RTN	Input	5V CMOS	Isolated loop circuit

1.3.2. EST Signal Input Interface

Function: EST signal input

Interface type: BNC connector

EST Input	Signal Logic Level: CMOS Level, 5V pull up Low Logic Level: -0.5V~1V High Logic Level: 3.5V~5V
	Function: Control the input signal of the camera frame triggering (Note: it needs to be set to "External" in the trigger settings)

Pin Description:

PIN NO.	Name	Input/output	Description	Remark
1	EST1 IN	Input	5V CMOS	Isolated Inputs
Outer case	EST1 IN RTN	Input	5V CMOS	Isolated loop circuit

1.3.3. EPO Signal Output Interface

Function: Exposure signal input

Interface type: BNC connector

EPO Input	Signal Logic Level: 5V CMOS output
	Function: Output signal triggered by camera frame (pulse width controlled by shutter)

Pin Description:

PIN NO.	Name	Input/output	Description	Remark
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1	EPO IN	Input	5V CMOS	Isolated Inputs
Outer case	EPO IN RTN	Input	5V CMOS	Isolated loop circuit

1.3.4. SDI Signal Output Interface

Function: Monitoring video output interface

Interface type: BNC connector

SDI Output	Output signal: 3G-SDI
	Function: Image monitoring

1.3.5. SYNC-I Auxiliary interface

This interface cable is independently designed by our company and is mainly used for synchronous shooting with multiple cameras of our company.

If you need, please contact our sales department.

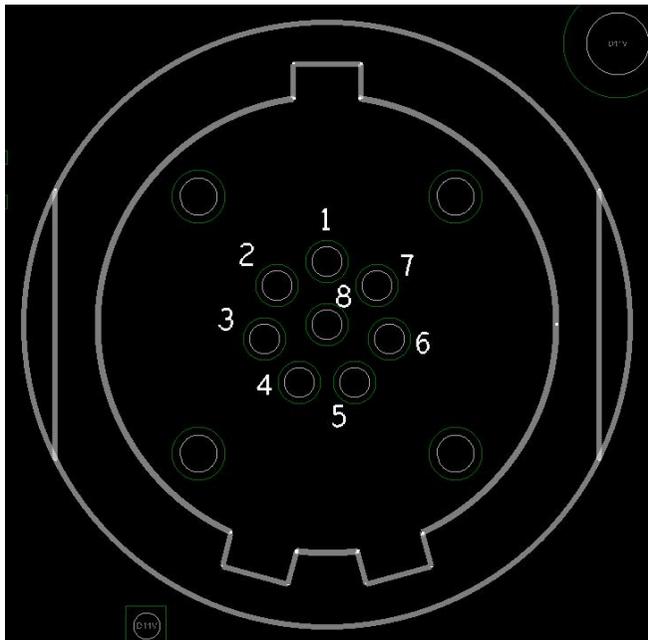
Function: As a connection port for the slave. Includes synchronous signal input, TRIG trigger signal input, EST signal input, and IRIG-B input.

TRIG Input	Signal Logic Level: CMOS Level, 5V pull up Low Logic Level: -0.5V~1V High Logic Level: 3.5V~5V
	Function: Control camera state switching from "Ready" to "Record".
EST Input	Signal Logic Level: CMOS Level, 5V pull up Low Logic Level: -0.5V~1V High Logic Level: 3.5V~5V
	Function: Control the input signal of the camera frame triggering (Note: it needs to be set to "External" in the trigger settings)
IRIG-B Input	Signal Logic Level: CMOS Level, 5V pull up Low Logic Level: -0.5V~1V High Logic Level: 3.5V~5V
	Function: IRIG-B (B002/B122) DCLS signal, which can add IRIG code to each recorded image frame
SYNC-I Input	Signal Logic Level: CMOS Level, 5V pull up Low Logic Level: -0.5V~1V High Logic Level: 3.5V~5V

Function:

Input low logic level and select TRIG and EST signals from the SYNC-I interface.

Input high logic level, select TRIG and EST signals from BNC interface.



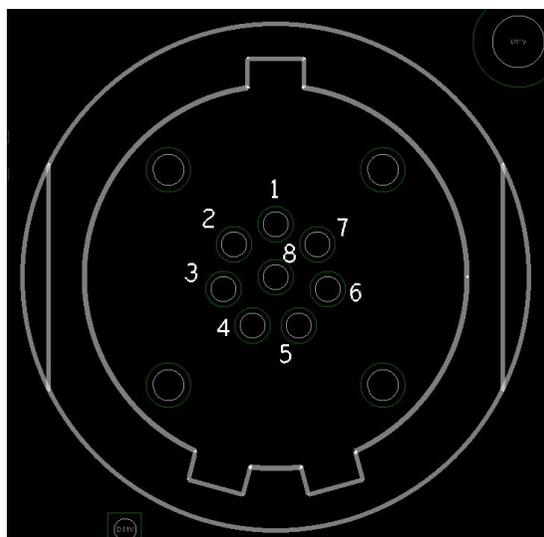
Pin Description:

PIN NO.	Name	Input/output	Description	Remark
1	TRIG IN	Input	5V CMOS	
2	TRIG IN RTN	Input	5V CMOS	
3	EST IN	Input	5V CMOS	
4	EST IN RTN	Input	5V CMOS	
5	NC			
6	IRIG IN	Input	5V CMOS	
7	IRIG IN RTN	Input	5V CMOS	
8	SYNC-I_IN	Input	5V CMOS	
Outer case	GND		GND	

1.3.6. SYNC-O Auxiliary interface

Function: As a connection port for the host. Including synchronization signal, TRIG trigger signal output, EPO signal output, IRIG-B output.

TRIG Output	Signal logic level: 5V CMOS output
	Function: Video recording status signal output.
EPO Output	Signal logic level: 5V CMOS output
	Function: Output signal triggered by camera frame (pulse width controlled by shutter)
IRIG-B Output	Signal logic level: 5V CMOS output
	Function: IRIG-B DCLS signal output (this signal can only be used to reproduce IRIG-B code signals, and the camera itself cannot generate such a signal)
SYNC-I Output	Signal logic level: output 0V
	Function: Control another high-speed camera



Pin Description:

PIN NO.	Name	Input/output	Description	Remark
1	TRIG IN	Output	5V CMOS	
2	TRIG IN RTN	Output	5V CMOS	
3	EPO IN	Output	5V CMOS	
4	EPO IN RTN	Output	5V CMOS	
5	NC			
6	IRIG IN	Output	5V CMOS	
7	IRIG IN RTN	Output	5V CMOS	

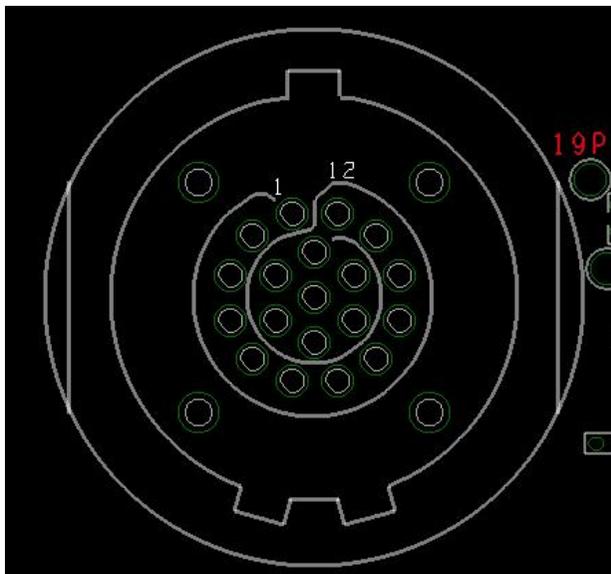
8	SYNC-I_IN	Output	5V CMOS	
Outer case	GND		GND	

1.3.7. AUX Auxiliary interface

AUX, as an extension interface for cameras, is reserved for future addition of I/O to the camera. Currently, AC input for IRIG-B code, Ready signal input, and custom output signal are supported.

Function: Extending input/output control signals

GENERAL- IN (Universal Input)	Signal Logic Level: CMOS Level, 5V pull up Low Logic Level: -0.5V~1V High Logic Level: 3.5V~5V
	Function: Control the camera to enter the ready state signal.
GENERAL- OUT (Universal Output)	Signal logic level: 5V CMOS output
	Define output signals for READY, TRIG, and FAULT on the software side.
AUX_EST input	Signal Logic Level: CMOS Level, 5V pull up Low Logic Level: -0.5V~1V High Logic Level: 3.5V~5V
	Function: Set the EST signal input from the AUX interface on the application software.
AUX_IRIG- B(AC)	Signal level: 3-10Vpp, input impedance of approximately 110ohm, isolated transformer input
	Function: IRIG-B (AC) (B002/B122) signal input
AUX_TRIG2 input	Signal logic level: current driven optocoupler, isolated input Withstand voltage 32V MAX. Current limiting resistor 1200ohm.
	Function: Set the TRIG signal input from the AUX interface on the application software.
AUX_EPO2	Signal logic level: 5V CMOS output
	Function: Set the EPO signal input from the AUX interface on the application software.



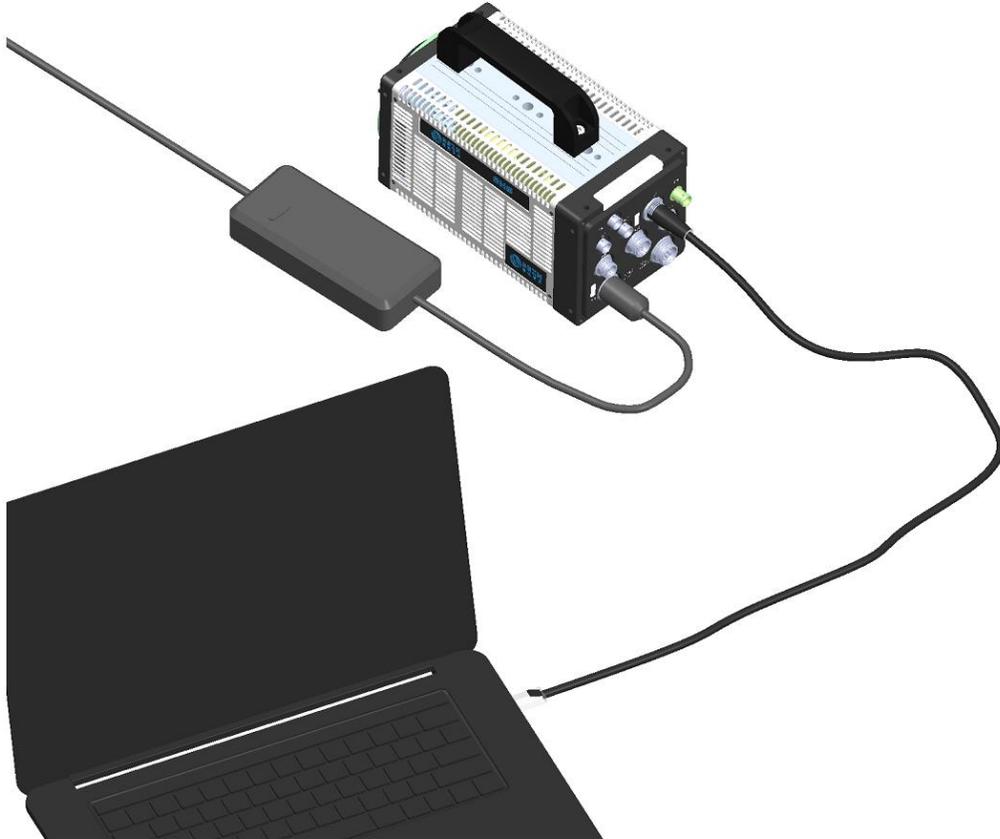
Pin Description:

PIN NO.	Name	Input/output	Description	Remark
1	GENERAL IN	Input	5V CMOS	
2	GENERAL IN RTN	Input	5V CMOS	
3	GENERAL OUT1	Output	5V CMOS	
4	GENERAL OUT1 RTN	Output	5V CMOS	
5	GENERAL OUT2	Output	5V CMOS	
6	GENERAL OUT2 RTN	Output	5V CMOS	
7	GENERAL OUT3	Output	5V CMOS	
8	GENERAL OUT3 RTN	Output	5V CMOS	
9	EST2	Input	5V CMOS	
10	EST2 RTN	Input	5V CMOS	
11	IRIG-B IN	Input	Transformer isolated input	
12	IRIG-B IN RTN	Input	Transformer isolated input	
13	TRIG2 IN A	Input	Current driven, positive	
14	TRIG2 IN C	Input	Current driven, negative	
15	EPO2	Output	5V CMOS	
16	EPO2 RTN	Output	5V CMOS	
17	NC	/	/	
18	NC	/	/	
19	NC	/	/	/

1.4. Device Connection

1.4.1. The Least Device Connection

- The least device connection for using a camera is as follows.



1. Network cable (the network cable attached to this product).
2. Power adapter (the accessory adapter of this product).
3. The computer needs to install the FastPhoto software package, and the computer network card needs to support 1Gb or 10Gb types.

1.4.2. Connecting AC Power Supply

Connect the provided AC power supply device.



1. Connect the DC end of the power adapter to the "DC-IN1 or DC-IN2 (20-32V)" interface on the back of the camera.
2. Connect the AC end to the power outlet.

2

Chapter 2 Specifications

This chapter provides an overview of the system's specifications.

2.1. Specifications

2.1.1. Camera Type and Specifications

For SH6 series cameras, there are monochrome and color versions, each with version options 40GB standard memory, 80GB and 160GB high-capacity memory. When purchasing, you can choose from these versions according to your application or your own requirements. The versions and specifications of each model are as follows.

SH6-109

Model	SH3-109
Max. Resolution	1280×1024
Full Frame Rate	9500fps
Maximum Frame Rate	750000fps
Minimum Exposure Time	100ns
Exposure Frame Interval	210ns
Cell Size	14.6μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	60dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO67000(M), ISO23000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-113

Model	SH3-113
Max. Resolution	1280×1024
Full Frame Rate	13800fps
Maximum Frame Rate	1000000fps
Minimum Exposure Time	100ns
Exposure Frame Interval	210ns
Cell Size	14.6μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	60dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO67000(M), ISO23000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-116

Model	SH3-116
Max. Resolution	1280×1024
Full Frame Rate	15800fps
Maximum Frame Rate	1150000fps
Minimum Exposure Time	100ns
Exposure Frame Interval	210ns
Cell Size	14.6μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	60dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO67000(M), ISO23000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-201

Model	SH3-201
Max. Resolution	2048×1024
Full Frame Rate	1000fps
Maximum Frame Rate	10000fps
Minimum Exposure Time	1μs
Cell Size	9μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-202

Model	SH3-202
Max. Resolution	2048×1024
Full Frame Rate	2000fps
Maximum Frame Rate	14000fps
Minimum Exposure Time	1μs
Cell Size	9μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-204

Model	SH3-204
Max. Resolution	2048×1024
Full Frame Rate	4000fps
Maximum Frame Rate	25000fps
Minimum Exposure Time	1μs
Cell Size	9μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-207

Model	SH3-207
Max. Resolution	2048×1024
Full Frame Rate	6600fps
Maximum Frame Rate	50000fps
Minimum Exposure Time	1μs
Cell Size	9μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-501

Model	SH3-501
Max. Resolution	2560×2016
Full Frame Rate	1000fps
Maximum Frame Rate	14000fps
Minimum Exposure Time	1μs
Cell Size	9μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-502

Model	SH3-502
Max. Resolution	2560×2016
Full Frame Rate	2000fps
Maximum Frame Rate	25000fps
Minimum Exposure Time	1μs
Cell Size	9μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-504

Model	SH3-504
Max. Resolution	2560×2016
Full Frame Rate	3600fps
Maximum Frame Rate	50000fps
Minimum Exposure Time	1μs
Cell Size	9μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-505

Model	SH3-505
Max. Resolution	2560×2016
Full Frame Rate	4500fps
Maximum Frame Rate	60000fps
Minimum Exposure Time	1μs
Cell Size	9μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-802

Model	SH3-802
Max. Resolution	4096×2048
Full Frame Rate	2000fps
Maximum Frame Rate	20000fps
Minimum Exposure Time	1μs
Cell Size	4.5μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

SH6-2101

Model	SH3-2101
Max. Resolution	5120×4096
Full Frame Rate	1000fps
Maximum Frame Rate	20000fps
Minimum Exposure Time	1μs
Cell Size	4.5μm
Standard RAM	40GB, 80GB,160GB, 320GB (Optional)
Extended Memory	4T, 12T, 24T (Optional)
Dynamic Range	64dB
Analog Gain	×2, ×4, ×8
Bit Depth	8bit/10bit/12bit
Shutte Mode	Global
Color	Monochrome (M) / Color (C)
ROI	Support
Lens Mount	E Port, adaptable to F Port, C Port, EF Port
Data Interface	10 Gigabit Ethernet, compatible with Gigabit Ethernet
Sensitivity	ISO10000(M), ISO3000(C)
Fan Control	Support turning on / off, adaptive rotary speed according to temperature
Operating Temperature/Humidity	Standard -10~50°C, below 95%(no condensation), customizable -40~65°C wide temperature range version
Video Signal Output	SDI, Ethernet
Recording Mode	Start, End, Center, Random, Manual
Trigger Mode	Manual, IO, Image
External Signal	Input: trigger (TTL/switch) signal, sync signal, ready signal, event signal, IRIGB code signal. Output: trigger (TTL/switch) signal, sync signal, ready signal, exposing signal, recording signal.
Power Supply	Dual power, DC24V
Dimensions (excluding lens)	217D×110W×110H, excluding protrusion parts
Weight	3.8kg
Power Consumption	55W
Standard Accessories	Power cord×1, AC Adaptor×1, Network cable×1, Camera Control Software×1, Product Manual×1, Qualified Certificate×1

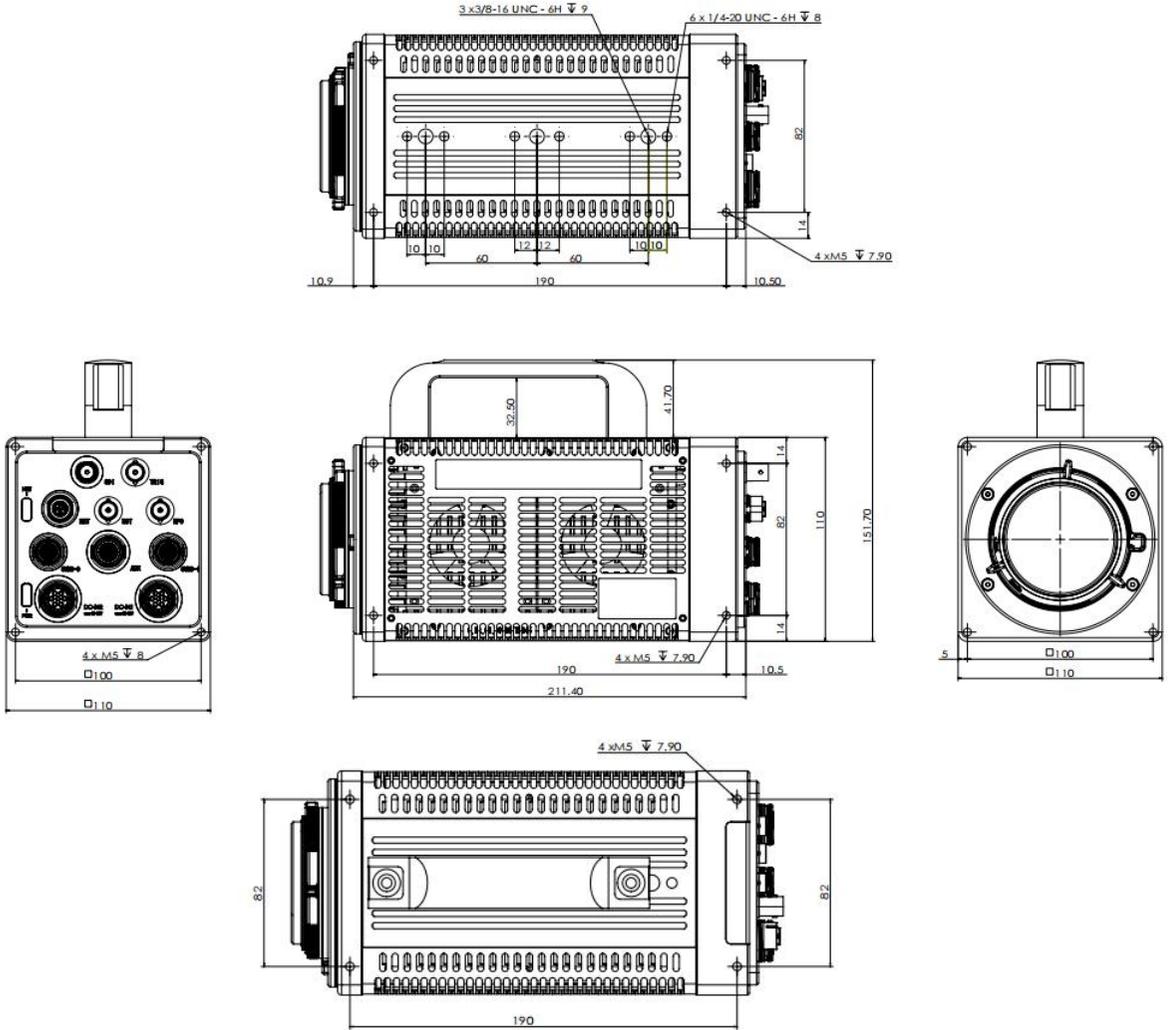
※ Some models of hard disk versions support real-time storage of restricted parameters. Please refer to the product manual for details.

Manufacturer		Dongguan City Gangqi Electronics Co., Ltd.
Type		GQ120-2400500-E4
Rating	Input	AC100-240V, 50-60Hz, Max. 2A
	Output	DC24V, 5.0A
Dimensions		153.5(L) x 66.2(W) x 32.35(H)mm, excluding protrusion parts
Weight		556.4g

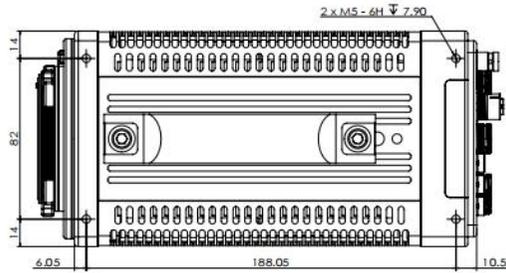
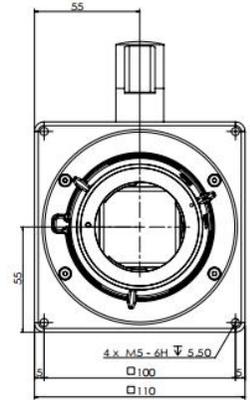
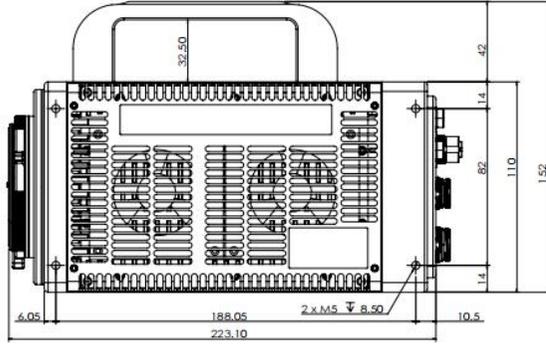
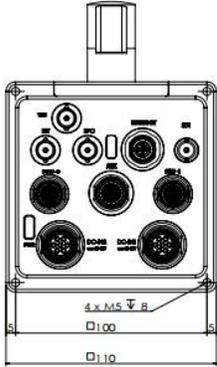
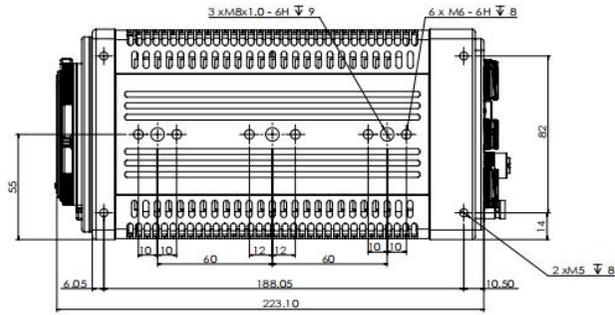
2.2. Dimensions

2.2.1. Dimensions of the Camera

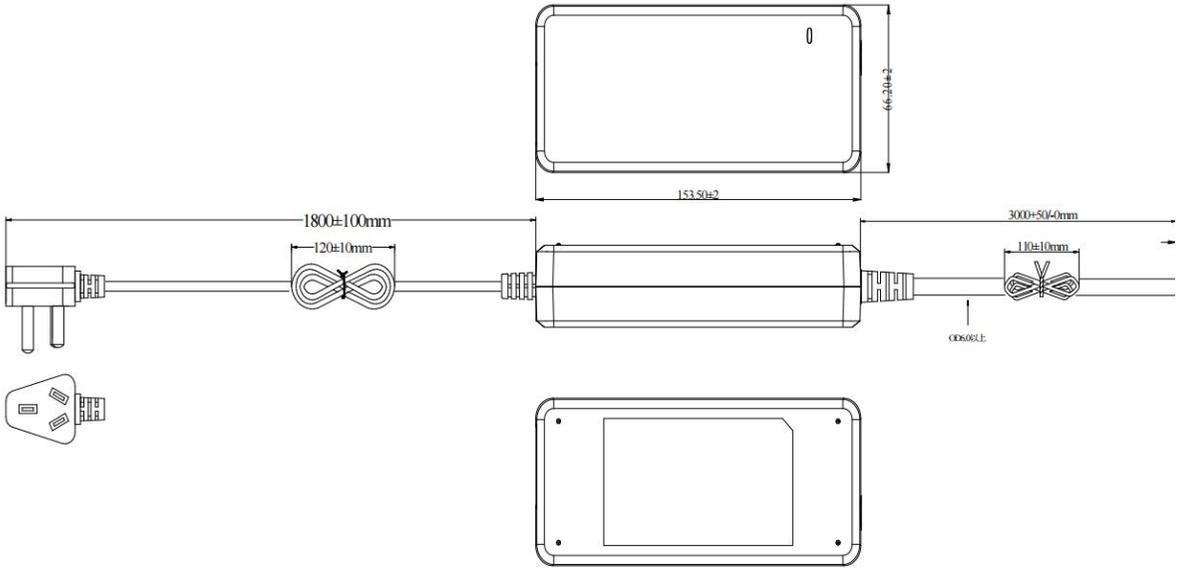
10X Series



20X/50X Series



2.2.2. Dimensions of the AC Power Supply Device



3

Chapter 3 Warranty

This chapter provides an overview of warranty.

3.1. About Warranty

This system has been rigorously tested at the factory. However, in case of failure due to manufacturing defects, it will be repaired free of charge during the warranty period.

■ Exceptions

The following exceptions will result in paid repairs, even within the warranty period.

1. Damage or failure caused by fire, earthquake, flood, lightning, other natural disasters, pollution or abnormal voltage.
2. Damage or malfunction or maloperation caused by falling or improper handling during transportation or moving after purchase.
3. Consumables (e.g. cables)
4. When the system is repaired, adjusted or replaced by an entity other than SSZN service, and subsequent damage or failure is caused by using the product.

Please contact the dealer from whom you purchased the product or the nearest SSZN office if you have any questions regarding malfunctions.



REFERENCE

For inquiries related to our products, please refer to "4.1 Contact Information".

4

Chapter 4 Contact SSZN

This chapter lists the contact information that should be used to contact SSZN when there is a system malfunction or when certain parts of the manual are unclear.

4.1. Contact Information

For inquiries about SH6 high-speed cameras, please contact SSZN through the following information. In addition, you are kindly required to verify and prepare the following items before the inquiry.

Items that need to be verified	Required information
Contact Information	Company, school, or organization name, contact person's name, contact phone number, contact email address.
Product name	SH6-10x\20x\50x\80x\21XX
Product ID	Displayed at the nameplate seal.
The condition of the system, the description of the problem, and so on.	

Contact us	
The headquarters	<p>SHENZHEN SINCEVISION TECHNOLOGY CO., LTD. Address: 5th Floor, Building 2, Chongwen Industrial Park, Nanshan Zhiyuan, Nanshan District, Shenzhen, China TEL: 0755-29655425, 4009660626 Website: www.cnsszn.com</p>
Dongguan Office	Address: Room 406, Building F4, Tian'an Digital City, Nancheng District, Dongguan City, Guangdong Province, China
East China Office	Address: Room 1305, Building 7, Xiangyu Liang'an Trade Center, No.1588, Chuangye Road, Kunshan, Jiangsu Province, China
North China Office	Address: Unit 922, Building 4, Times Fortune World, Courtyard 1, Hangfeng Road, Fengtai District, Beijing, China
Southwest China Office	Address: Room 604, Block B, Yingchuang Interational Building, No. 66, Chuangzhi South 1st Road, Pidu District, Chengdu, China
Xi'an Office	Address: 601, Qujiang Chuangke Avenue, No. 2, Cuihua Road, Qujiang New Area, Changyanbao Street, Yanta District, Xi'an City, Shaanxi Province
Hefei Office	Address: C3-207, Phase I, Innovation Industry Park, High tech Zone, Hefei City