

600TC WIRELESS HDMI/SDI VIDEO TRANSMISSION SYSTEM

MANUAL BOOK



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Warning

Please read this user introduction manual to become familiar with the features of the Ghost-Eye series products before operation. Failure to operate the product correctly can result in damage to the product, or interference with other devices. This is a sophisticated product which must be operated with caution and common sense. Failure to operate this product properly might result in disturbing other film equipment on set. This product is not intended for use by children without direct adult supervision. Do not use with incompatible components, or alter this product in any way outside of the documents provided by Ghost-Eye. These safety guidelines contain instructions for installation, operation, and maintenance. It is essential to read and follow all of the instruction in the manual, and all the notices and warnings regarding Ghost-Eye series products prior to assembly, setup, or use to prevent any damage or interference.

1. Do not use this product in extreme heat, cold, dusty, or humid environments.
2. Prevent friction against hard objects.
3. Prevent jarring, such as from falling from high places, or from improper packaging during transportation.
4. These products are not waterproof; prevent moisture from getting in, on, or around the unit(s).
5. Do not dismantle, assemble, or otherwise alter the product(s) arbitrarily.

Electrical Considerations

1. When this device is sharing a power supply or battery with other equipment, please make sure all signal and power cables are well connected before turning on the Ghost-Eye unit power.
2. When this device is sharing a power supply or battery with other equipment, please make cables from the Ghost-Eye unit.
3. When this device is sharing a power supply or battery with other equipment, please check the polarity of the power connectors of all equipment to ensure the inside conductor is positive. If the polarity of the power connector is unknown, please check the user manual to make sure the outer conductor of the SDI or HDMI connector is connected to the negative of the power supply. Otherwise, the equipment will not be able to share the same power supply with the Ghost-Eye unit.

Ghost Eye Wireless Video Transmission Systems

Here at Cine Gears Inc., we supply some of the best wireless HD video transmitters and receivers available. During the development of Ghost-Eye units, we subjected our prototypes to rigorous testing on set with professional film crews, and took customer feedback and suggestions into serious consideration. After careful consideration, Ghost-Eye products have integrated all the in-demand wireless video transmission features recommended by you, the user. The fruit of our efforts are catalogued below in the form of our unique Ghost-Eye Wireless Video Transmission kits, across the affordable price range spectrum.

Ghost Eye wireless video transmission kits each fit a different set of wireless HD video transmission needs. The most powerful video transmitters and receivers will satisfy even the most high end professional film crew, and our lightweight models fit a more versatile brand of film set. Ghost-Eye transmission kits transmit and receive 10 bit, 4:4:4 video, support both HD and SD, and can broadcast with less than 1ms/1 frame latency.

The transmitter's output power can be adjusted between 10dBm to 21dBm to suit your shooting environment. At 100% power, the transmission range is at it's maximum of 600 meters (1968 feet). At 50% power, the transmission range is up to 200-300 meters (656-984 feet). The 2.4G tally and talk-back range reaches up to 600 meters (1968 feet).

Product Features

- Transmits 10-bit color, YCbCr, 4:2:2 color depth, proprietary color matching algorithm on OFDM chips.
- Optimized uncompressed 10-bit 4:2:2 2GBps video stream, or 12-bit 4:4:4 3GBPs wireless video transmission on other models.
- Optimized video processor for on-screen movement.
- Fully supports all audio formats.
- Static channel selection. The channel number and frequency can be modified by software to avoid interference from other devices. Supports multiple receivers and AES 128 bit video encryption.
- FPGA technology adopting American IRTA programmable logic matrix chips.
- Follows the international film association time code protocols. Accurate time code extraction, transmission, and encryption using embedded time code transmission method. Hardware encrypted time code to IRTA chips.
- Software allows user to adjust transmission output power to avoid interference.
- Uses a separate channel to transmit tally information. Fully supports different intercom interfaces.
- Integrated wireless intercom feature supports up to 300 meters for microphone and speakers. Supports external bluetooth audio devices. Wireless microphones can be adapted.
- Certified software and technical support provided. For organizations, customized frequency, power and products available for organizations.

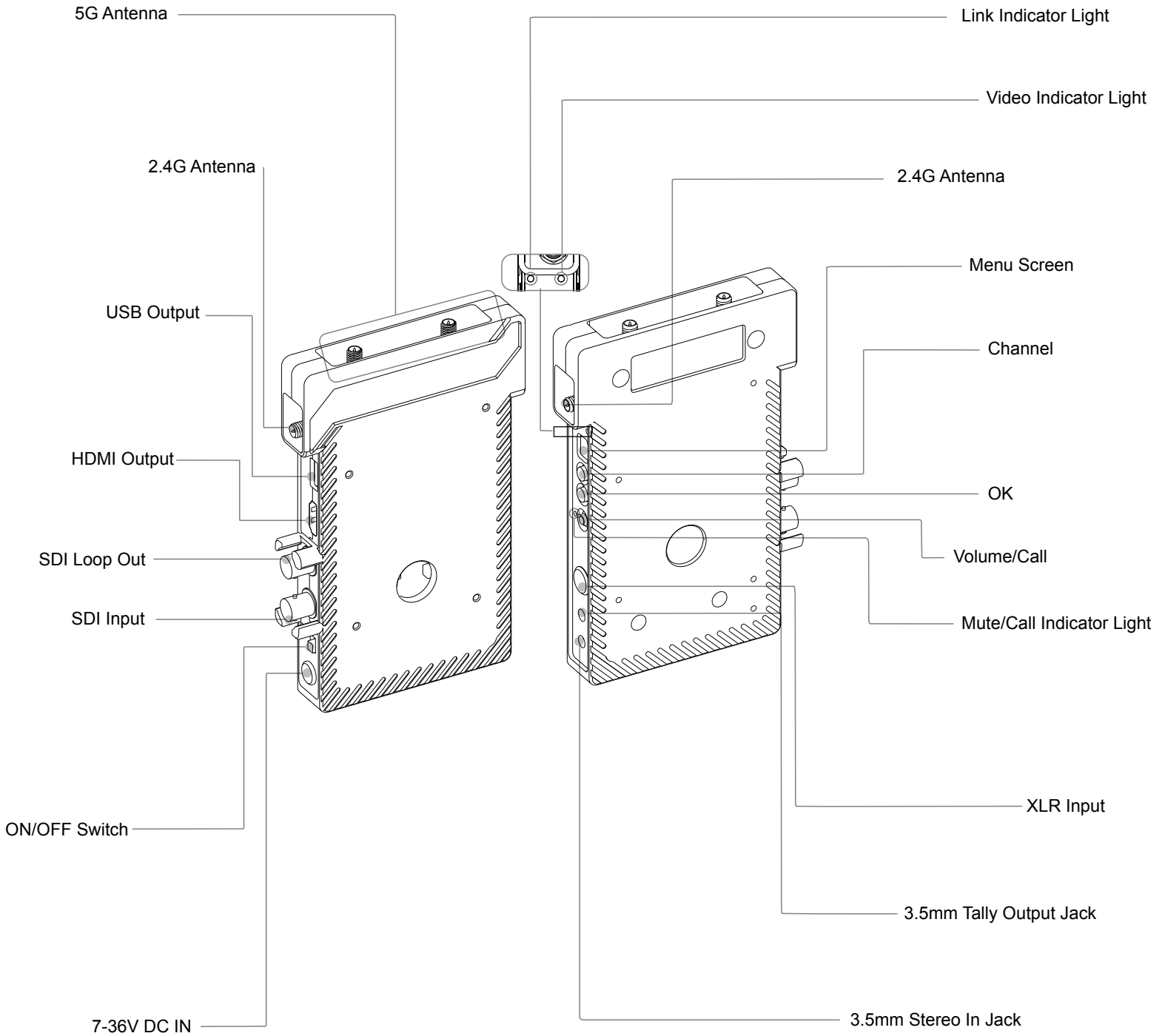
ITEM	SPECIFICATION
Frequency range	5.1-5.9(GHz)*Subject to different RF regulations in different regions.
	2.4-2.483GHz with ISM band
Occupied Bandwidth	Up: 40MHz
	Down: 1MHz
Video Formats Supported	HDMI: 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p 23.98/24/25/29.9/30/50/59.94/60; HDMI Type A SDI: 3G, HD, SD-SDI (auto-selected), SMPTE 259/274/292/296/372/424/425; BNC x2
Audio Formats Supported	PCM, DTS-HD, Dolby TrueHD; SDI embedded 2 channels 24bits/48KHz input/output
Time Code	SMPTE-12M
Transmission Range	1968ft(Line of sight)
Transmitter	
Antenna	External Antenna 5G × 2pcs
	External Antenna 2.4G x1pcs
Transmission Power	23 dB m
Functional Interface	SDI Input/Output(BNC Female); HDMI Input (Type A Female); 4xSMA Antenna Port; 1xA type USB3.0 port; DC input (4-pin Lemo Female)
Mounting Structure	1/4" Hot-shoe connection
Power Source	7-36V for DC input
Power Consumption	<8W

Specifications

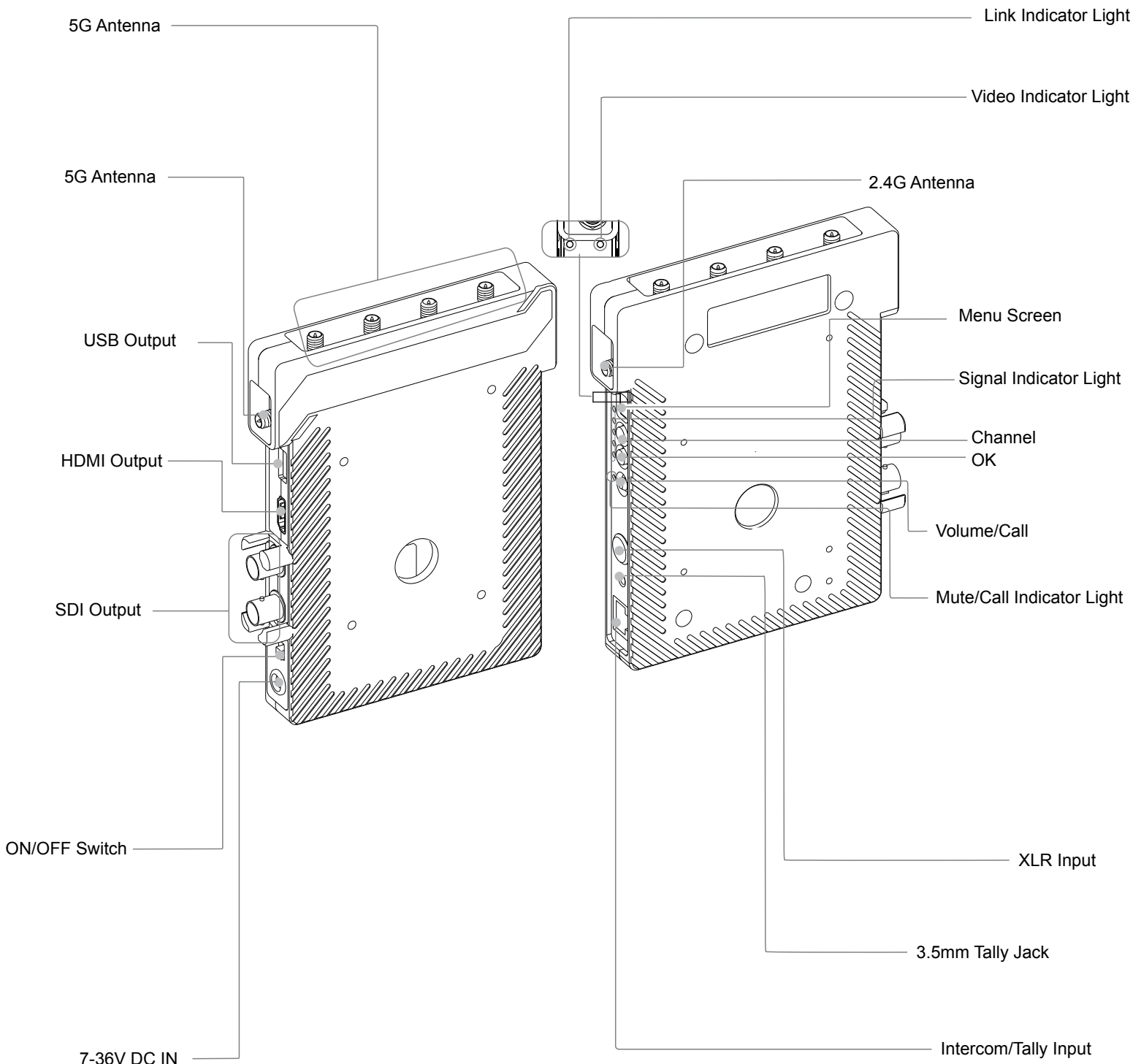
Net Weight(with antenna)	418g
Dimensions	163mm(L)×105mm(W)×22mm(H)
Temperature	-10-50° (Operating); -40-80° (Storage)
Receiver	
Antenna	External Antenna 5G × 5pcs
	External Antenna 2G x1pcs
Receiving Sensitivity	-75dBm
Functional Interface	SDI Output (BNC Female); HDMI Output (Type A Female); 6x Antenna Port; 3x3.5mm Headset Port; 1xA Type USB3.0 Port; 1xRJ45 Port; DC Input (4-Pin Lemo Female)
Locating Structure	1/4" Hot-shoe connection
Power Source	7-36V for DC input
Power Consumption	<10W
Net Weight(with antenna)	484g
Dimensions	163mm(L)×125mm(W)×22mm(H)
Temperature	-10-50° (Operating); -40-80° (Storage)

*Since the product's improving process, all the performance, design and specifications of our products are subject to minor change without prior notice.

Transmitter



Receiver



1. Fix the four antennas to the transmitter and arrange them to be a right angle as below figure to get better performance.



2. On transmitter side, when both SDI and HDMI source are inputted, the transmitter will automatically select the SDI source for transmission
3. Fix the six antennas to receiver and arrange them to a right angle as figure to get better performance.



4. Setting the receiver higher will enhance the transmission distance.

Transmitter

- Fix the four antennas respectively.
- Connect the SDI or HDMI video source to the “SDI IN”/“HDMI IN” of transmitter (when both SDI and HDMI video are inputted, it will auto select the SDI video for transmission).
- If needed, you can connect the SDI out (loop through) to other equipment as well.
- Connect the DC power to the transmitter or use a battery on the battery plate.
- Power on the transmitter.
- Set the Channel (must set both transmitter and receiver to the same channel)

Receiver

- Fix the six antennas respectively.
- Connect the “SDI OUT”/“HDMI OUT” port of the receiver to the monitor or other device.
- Connect DC power via power cable or use V-lock battery on the battery plate.
- Power on the receiver.
- Set the Channel (must set both transmitter and receiver to the same channel).
- The “Link” indicator light will glow green and the screen will read “Scanning...” After 10-20s, the video transmission will be shown on the monitor, and the “Video” indicator light will glow orange on both the transmitter and the receiver.

Signal Indicator Light

- The signal indicator light on the receiver will indicate how strong the transmission signal is between the transmitter and the receiver. Use the table below to determine the signal strength:

4-5 lights	Signal is very strong.
2-3 lights	Signal is average. Try changing the channels and checking the cable connections on the units.
0-1 lights	Signal is very weak. Try changing the channels and checking the cable connections on the units.

Changing Channel on Transmitter

- Power on the Transmitter
- Press the “CH” button to unlock channels, then press “CH” to scroll through channels.
- Press “OK” to confirm.
- Transmitter channel setting accomplished.

Changing the Channel on Receiver

- Power on the Receiver.
- Press “OK” button to unlock channels, then press “OK” to scroll through channels.
- Press “CH” to confirm.
- Receiver channel setting accomplished.

Scanning Channels

- Press “OK” on the receiver for 3 seconds.
- Monitor will read “Scanning...”
- Monitor will read suggested channels for optimal transmission (i.e. “recommended channel 3”)
- In 10-20 seconds transmitter and receiver will relink and video will be shown on the monitor.

Mute and Call on Intercom

- Press “Mute” button on the receiver to open communication between transmitter and receiver. When communication is open, “Mute/Call” light will not glow.
- Press “Mute” button on the receiver again to mute communication. When communication is muted, “Mute/Call” light will glow red.
- Intercom communication may only be opened or muted via the receiver. However, while communication is muted, user may press “Mute” button on the transmitter and the “Mute/Call” light will begin flashing on both units to alert the user on the receiver’s end that they wish to talk.
- On both the receiver and the transmitter, push “VOL” up or down to increase or decrease the volume.

Display Transmission Information

- Press “CH” on the receiver for 3 seconds.
- Transmission information will be displayed on the monitor.
- To dismiss information, press “CH” on the receiver for 3 seconds again.

Troubleshooting

If the Receiver fails to output video correctly, follow the chart below to find possible causes and solutions.

	ISSUE	SOLUTION
OSD Information on TV	Displaying “Waiting for Connection...” for a Prolonged Period	
	Transmitter is not powered up.	Turn on the transmitter.
	Transmitter or receiver is not placed correctly.	Place the TX or RX correctly.
	The transmitter and receiver are too far away.	Move the receiver closer to the transmitter.
	Several solid wall partition on TX and RX.	Reduce the number of obstructions between the TX and RX.
	There are too many obstacles between TX and RX.	Move the receiver closer to the transmitter.
	Other transmitter is working on the same or adjacent channel	Turn off other transmitter, or change channel.
	No Video Signal Received	
	Transmitter and video source are not connected.	Connect the transmitter to video source by SDI/HDMI cable.
	The video source is turned OFF	Turn on the video source.
	Bad connection of transmitter cable	Disconnect and re-connect the transmitter.
	Transmitter is working abnormally	Restart the transmitter.
	Problem with the cable between TX and video source	Change the SDI/HDMI cable.
	Player does not support the output resolution format	Switch the output video resolution to other modes.
The TV/Monitor does not support HDCP authentication	Replace TV/Monitor with HDCP-Certified TV/Monitor.	

Image	No Signal Input to Receiver or TV/Monitor	
	Receiver is turned off.	Turn on the receiver.
	Receiver and TV are not connected.	Connect receiver and TV/Monitor via SDI/HDMI input.
	TV/Monitor not switched to SDI/HDMI input	Switch TV/Monitor to SDI/HDMI input.
	Bad cable connection of receiver or TV/Monitor.	Disconnect and re-connect the SDI/HDMI cable.
	TV/Monitor turned to standby mode.	Switch the TV/Monitor to normal operation mode.
	Receiver is working abnormally.	Restart the receiver.
	No Image Appears on the TV/Monitor	
	Bad connection from receiver or cable.	Reconnect the cable of the receiver or TV/Monitor.
	Receiver is working abnormally.	Restart the receiver.
	Receiver failure.	Please contact your retailer.
	Abnormal Color on TV Screen	
	Bad connection from receiver cable or TV/Monitor.	Disconnect and re-connect the HDMI cable of the receiver or TV.
	Bad connection from transmitter cable or video source.	Disconnect and re-connect the HDMI cable of the transmitter and player.
	Transmitter or receiver working abnormally.	Restart transmitter and receiver.

■ FCC Statement

This equipment has been tested and found to comply 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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Cautions

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.

■ Terms and Conditions

Congratulations on purchasing your new CINEGEARS product. Please read this manual carefully before using the product. By using this product, you hereby agree to this disclaimer and signify that you have read it in full. You agree that you are responsible for your own conduct and any content created while using CINEGEARS products, and for any consequence thereof. You agree to use this product only for purposes that are proper and in accordance with local regulations, terms and any applicable policies and guidelines.

By reading this disclaimer, you also agree:

1. Any part of this disclaimer is subject to change without prior notice. Refer to WWW.CINEGEARS.COM for the latest version.
2. CINEGEARS reserves the right of final interpretation of this disclaimer.

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About Cinegears

Cine Gears Inc. is an industry leading company that designs and manufactures digital wireless follow focus systems, lens control systems, camera motion control systems and accessories for film and broadcast industry. As a big believer in the power of creativity and ideas, we designed the Pegasus cablecam, the wireless motor drive that integrated a built in wireless transmitter, and the wireless finger wheel controller. The Cine Gears Inc. wireless lens control system has the international CE certification on all its equipment. Cine Gears lens control system can achieve the finest minutia of focus pulling, with extreme accuracy and control. This very same technology is what drives the Pegasus for ultra-smooth, highly controlled, programmed movement.

We have been working from Vancouver, B.C. for five years and our equipment has been used on hundreds of movies. Filmmakers of all experience levels will benefit greatly from a simple, professional, and well rounded follow focus system. The Single Axis and Multi Axis models provide greater ease, with less crew, and less wires. You can achieve professional film quality scenes on a shoestring budget. Camera operators, assistant camera operators, and jib operators can use the wireless follow focus to attain that perfect shot.

Customer Support



If you encounter any issues with any of our products please contact us directly via the details provided below. DO NOT CONTACT THE RETAIL STORE.

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