



# WIRELESS HDMI/SDI VIDEO TRANSMISSION SUITE

## MANUAL BOOK



## ■ Trademarks

Ghost-Eye Wireless Video Transmission Systems™ are trademarks of Cine Gears Inc. Web Interface.

## ■ Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, Cine Gears Inc. reserves the right to make changes to the products described in this document without notice.

Cine Gears Inc. does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

## ■ FCC Compliance Notice: Radio Frequency Notice

The device has met the FCC 15.247 requirement. In order to comply with the FCC RF exposure requirement, the user must keep 20cm away from the antenna.

This device 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 device 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 device 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.

## ■ Information to the user

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

■ <b>Cautions</b>	<b>2</b>
■ <b>Ghost Eye Wireless Video Transmission Systems</b>	<b>3</b>
■ <b>Ghost Eye 150M Kit</b>	<b>4</b>
About the 150M	<b>5</b>
150M User Manual	<b>10</b>
■ <b>Ghost Eye 300M Kit</b>	<b>12</b>
About the 300M	<b>13</b>
300M User Manual	<b>16</b>
■ <b>Ghost Eye 400M Kit</b>	<b>18</b>
About the 400M	<b>19</b>
400M User Manual	<b>24</b>
■ <b>Troubleshooting</b>	<b>27</b>
■ <b>Disclaimers</b>	<b>28</b>
■ <b>Customer Support</b>	<b>30</b>

### **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 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 Cinegears. These safety guidelines contain instructions for installation, operation, and maintenance. It is essential to read and follow all of the instructions in the manual, and all the notices and warnings regarding Ghost Eye series products prior to assembly, set up, or use to prevent any damage or interference.

1. Do not use this product in extreme heat, cold, humidity, or environments with dust.
2. Do not drop the unit or cause impact against hard surfaces.
3. These products are not waterproof: do not expose the units to moisture.
4. Do not dismantle, assemble, or otherwise alter the products.

### **Electrical Considerations**

1. When this device is sharing a power supply or battery with other equipment, please ensure all signal and power cables are well connected before turning on the Ghost Eye units' power.
2. When this device is sharing a power supply or battery with other equipment, please ensure the power switch is turned off before connecting or disconnecting any signal or power cables from the Ghost Eye units.
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 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 HD Wireless Video Transmission Systems

Here at Cinegears, we supply some of the best wireless HD video transmitters and receivers available. During the development of the Ghost Eye line of products, we subjected our prototypes to rigorous testing on set with professional film crews, and took customer feedback and suggestions into serious consideration. After careful review, the Ghost Eye products have integrated all of 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 under 1 millisecond of latency.



# WIRELESS HDMI/SDI VIDEO TRANSMISSION SUITE

## GHOST EYE 150M V2.03 KIT



FULL HD  
VIDEO

SDI &  
HDMI

<1MS  
LATENCY

PLUG &  
PLAY

RUGGED  
DESIGN

### EU Environmental Protection

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice.



### ■ Product Description

The Ghost-Eye 150M Wireless HDMI/SDI Transmission Suite utilizes today's most advanced wireless video transmission technology, broadcasting uncompressed 3G SDI/HDMI HD video signals with zero delay. The suite includes one transmitter and one receiver; where the transmitter provides a 3G SDI/HDMI HD input, the receiver provides 3G SDI/HDMI output. The Ghost-Eye 150M suite has 2 external stick antennas on the transmitter and 5 internal antennas inside the receiver. The transmission suite functions in the 5.1-5.9GHz frequency band and can be flexibly configured to licensed or ISM band frequencies around the globe. The side panel of the transmitter and receiver units have a frequency selection knob that provides a maximum of 4 workable frequency channels, and supports a maximum of 4 simultaneous receiver units per transmitter unit. The wireless suite can accommodate a wide range of DC power input, including many kinds of camera battery models. The suite can also sustain ~8kV ESD (HBM, contact discharge), the industry class metal case and professional heatsink design guarantees robust reliability.

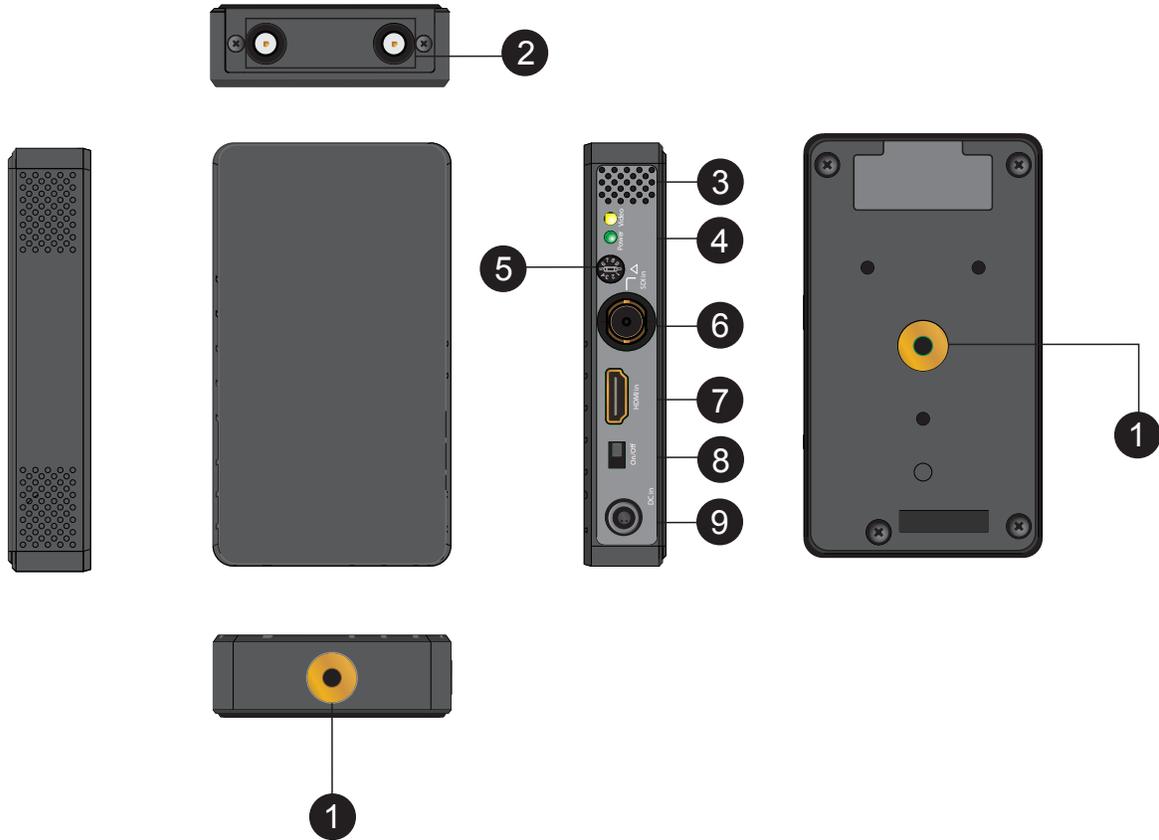
### ■ What is Included

- Transmitter Unit x 1
- Receiver Unit x 1
- 5GHz Omni-Directional High Efficiency Antennas (SMA Female) x 2
- 15-27mm Mounting Bracket x 1
- 2-Pin Lemo Power Cable x 2
- User Manual x 1
- Waterproof Custom Fit Hard Case (310x190x93mm) x 1

### ■ Features

- Uses License-Free 5GHz ISM frequency band, maximum 4 frequency channels manual selection, coexist with WIFI.
- Highest resolution 10bits color depth 4:4:4, 1080p 60FPS HDMI and SD/HD/3G SDI input and output, HDMI SDI cross conversion is supported.
- Supports wireless 10 bit HD video with no compression and no delay up to 300m (984ft).
- Uncompromised picture quality with very low latency, <1ms
- Supports point to point, and point to multi points network topology, multiple receiver is supported with up to 4 receivers.
- Cross compatibility with all Ghost Eye models.
- Support professional audio formats include Dolby True HD, DTS-master, etc.
- AES-128 encryption with air interface HD video data stream.
- Time Code, tally is supported for broadcast or live event streaming production.
- Wide range power voltage input, compatible with most kinds of camera batteries, optional Standard V-mount, Anton Bauer, or ¼ bolt Mount battery plate can be installed.
- Sony F970 battery buckle, convenient for field battery install and replacement.
- All input and output ports have ±8 kV ESD protection level (HBM, contact discharge).
- Plug & Play - no software is required.
- Professional standard 2-pin LEMO power plugs.
- Each RX (receiver) paired to the unique TX(transmitter) in factory Industrial metal case, stable and reliable.
- RX built-in directional antenna.
- Signal indicators for wireless power status, Video status and receiver RSSI.
- Water and mist proof, shock proof production case with form insert ready for traveling
- CE, FCC, RoHS certified product, safe to use worldwide.

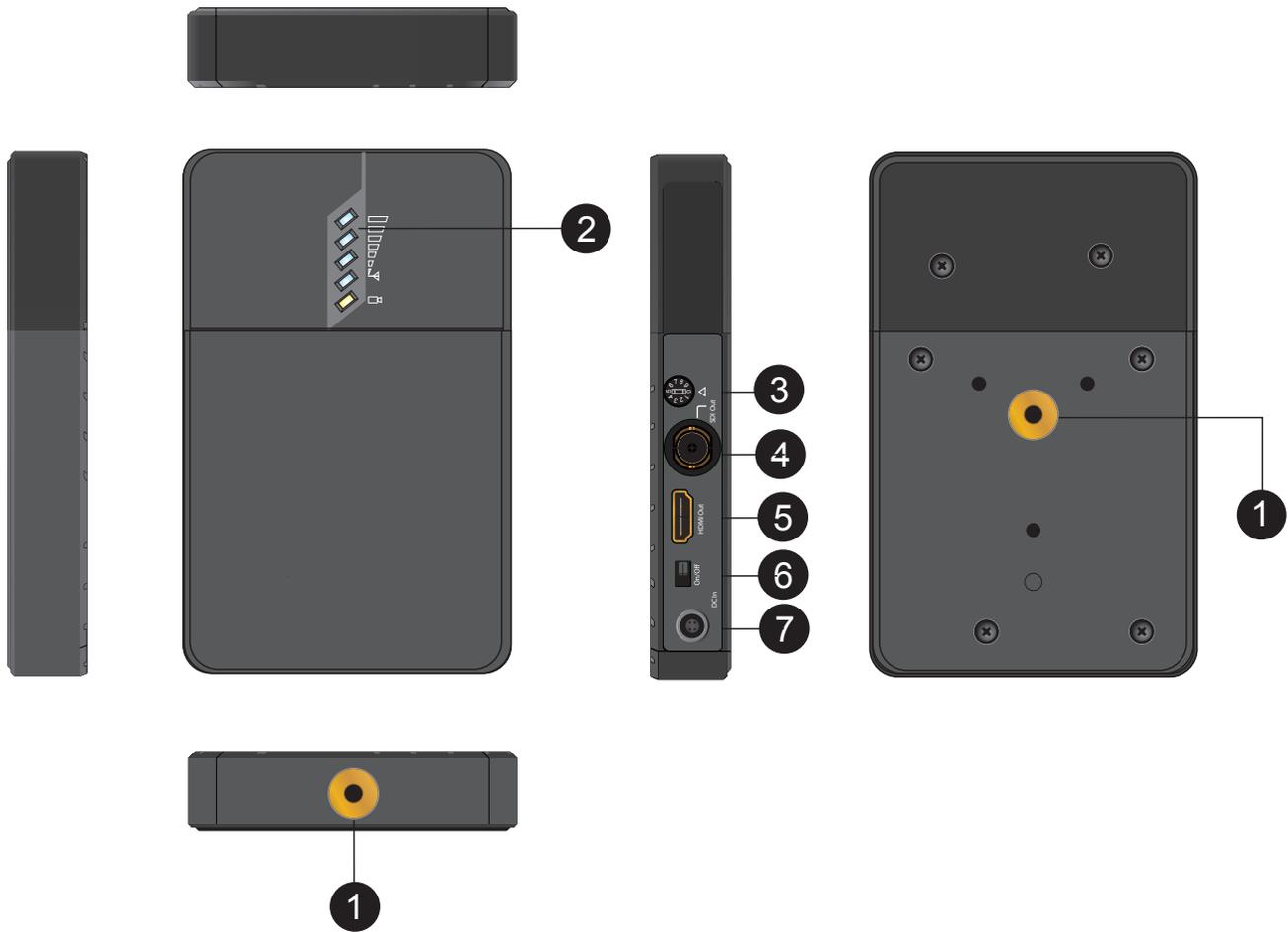
■ Diagram - Transmitter



Transmitter

- 1) 1/4-20 Screw Hole
- 2) RP-SMA male antenna connector
- 3) Video input indicator, 1 yellow LED
- 4) Power indicator, 1 green LED
- 5) Frequency selection knob, 1-4
- 6) SD/HD/3G SDI input
- 7) HDMI Input
- 8) DC power switch
- 9) DC input, LEMO 4-pin B series connector

## ■ Diagram - Receiver



### Receiver

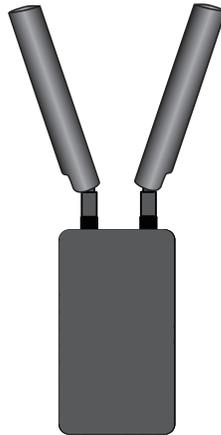
- 1) 1/4-20 Screw Hole
- 2) LED status indication(4 blue LED for RSSI & 1 LED yellow for POWER/VIDEO)
- 3) Frequency selection knob,1-4
- 4) SD/HD/3G SDI output
- 5) HDMI output
- 6) DC power switch
- 7) DC input, LEMO 4-pin B series connector

## ■ Specifications

	Transmitter	Receiver
Interface	SDI Input(BNC Female); HDMI Input (Type A female); 2 Antenna port(PR-SMA male); DC input	SDI Output(BNC Female); HDMI Output (Type A female); DC input
Supply voltage range	6.5-16.8V DC	6.5-16.8V DC
Power consumption	< 6.5 W	< 6 W
Size	(L x W x H):115 x 67 x 23mm excluding antennas	(L x W x H): 160 x 110 x 25mm
Mass Weight	270g	355g
Input Video Format	SDI:3G,HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; HDMI Type A: 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; SMPTE 259/274/292/296/372/424/425;	/
Output Video Format	/	SDI:3G,HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; HDMI Type A: 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; SMPTE 259/274/292/296/372/424/425;
Input Audio Format	SDI embedded 2 channel 24 bit/48KHz	/
Output Audio	/	SDI embedded 2 channel 24 bit/48KHz
Signal Indicator	POWER-Green; VIDEO-Yellow	POWER-Green; Wireless RSSI-Blue (4 LEDs); POWER/VIDEO-Yellow
Frequency Band	5.1-5.9GHz,configurable with China, North American, Europe,etc	5.1-5.9GHz,configurable with China, North American, Europe,etc
Modulation Mode	OFDM 16QAM	OFDM 16QAM
Transmission Power	<18dBm	/
Receiver Sensitivity	/	-75dBm
Occupied Bandwidth	40MHz	40MHz
Temperature Range	0~40°C(operating condition); -20~60°C(Storage)	0 ~ 40°C (operating condition); -20~60°C(Storage)
Compliance	FCC; CE; RoHS	FCC; CE; RoHS
Transmission Range	>300 Meters (984 feet)	>300 Meters (984 feet)
Video Processing Color Depth	8bit;10 bit;(4:0:0);(4:2:2);(4:4:4)	8bit;10 bit;(4:0:0);(4:2:2);(4:4:4)
Transmission Cross Compatibility	Ghost-Eye 100M;150M;300M;400M	Ghost-Eye 100M;150M;300M;400M

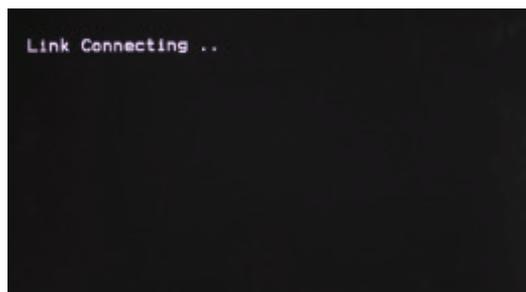
## ■ Getting Started

- 1) Ensure the video source output of the camera is OK, and the HD monitor is powered on and switched to connected video input port.
- 2) Ensure 2 TX antennas are installed, preferably with an orthogonal angle to each other for best RF performance, as in figure below.



Transmitter

- 3) Ensure all input, output SDI or HDMI cables are connected.
- 4) Ensure both the transmitter and receiver are powered via battery or DC input. Then turn power switch of the transmitter and receiver, respectively, to 'ON'. The 'Power' indicator will then light.
- 5) Ensure the frequency knobs of transmitter and receiver are set with the same number, this will make sure the transmitter and receiver work with same RF frequency.
- 6) If the camera is on and video input is OK, TX side 'video' indicator will light
- 7) Before RX finished wireless link with TX, 4 "RSSI" indicators and "Video" indicators are off; when wireless link is OK, "RSSI" indicators will light first, and "RSSI" will indicate the received RF signal strength. If the receiver detects wireless video normal internally from air interface, "Video" indicator will light. Before that, if SDI or HDMI video out port of the receiver has HD monitor connected, it will display an OSD of "Link Connecting....." as in the figure below.



### ■ Getting Started

- 8) The system will spend 20-30 seconds constructing the link, depending on link strength and the signal channel condition. When wireless link is established the “RSSI” light will illuminate, indicating the current wireless signal strength, “Video” indicators will light, and the connected HD monitor will be playing the real-time video and audio.

### ■ Frequency Selection

The wireless suite works in the 5.1-5.9GHz frequency band and can be flexibly configured to other licensed or ISM bands to accommodate different global regions. The side panel of the transmitter features a frequency selection knob (see below illustration), which provides a maximum of 4 workable frequency channels, and supports a maximum of 4 simultaneous receiver units.





# WIRELESS HDMI/SDI VIDEO TRANSMISSION SUITE

## GHOST EYE 300M KIT



FULL HD  
VIDEO

SDI &  
HDMI

<1MS  
LATENCY

PLUG &  
PLAY

RUGGED  
DESIGN

### EU Environmental Protection

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice.



### ■ Product Description

The Ghost-Eye 300M Wireless HDMI/SDI Transmission Suite utilizes today's most advanced wireless video transmission technology, broadcasting uncompressed 3G SDI/HDMI HD video signals with zero delay up to 700 meters (line of sight). The suite includes one transmitter and one receiver; where the transmitter provides a 3G SDI/HDMI HD input, the receiver provides 3G SDI/HDMI output. The Ghost-Eye 300M suite has 5 external stick antennas on the receiver and 2 external stick antennas on the transmitter. The transmission suite functions in the 5.1-5.9GHz frequency band and can be flexibly configured to licensed or ISM band frequencies around the globe. The side panel of the transmitter and receiver units have a frequency selection knob that provides a maximum of 4 workable frequency channels, and supports a maximum of 4 receiver units per transmitter unit. The wireless suite can accommodate a wide range of DC power input, including many kinds of camera battery models. The suite can also sustain ~8kV ESD (HBM, contact discharge), the industry class metal case and professional heatsink design guarantees robust reliability.

### ■ What is Included

- Transmitter Unit x 1
- Receiver Unit x 1
- Omni-Directional High Efficiency Antennas (SMA Female) x 7
- 15-27mm Mounting Bracket x 1
- 2-Pin Lemo Power Cable x 2
- User Manual x 1
- Waterproof Custom Fit Hard Case (310x190x93mm) x 1

### ■ Features

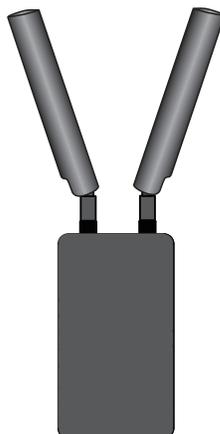
- 5GHz ISM Band wireless HD video transmission up to 700m (2297ft) depending on line of sight
- HDMI and SD/HD/3G SDI input and output
- Highest resolution 10bits color depth 4:4:4, 1080p 60FPS HDMI and SD/HD/3G SDI input and output, HDMI SDI cross conversion is supported.
- Signal status indicators for power, video, and receiver RSSI
- AES-128/256 encryption with air interface HD video data stream
- Supports point to point, and point to multi points network topology, multiple receiver is supported with up to 4 receivers .
- Cross compatibility with all Ghost Eye models.
- HDMI 1.4 with EDID support
- Uncompromised picture quality with very low latency <1ms
- Wide range power voltage input, suitable for most kinds of camera batteries
- Plug & Play - no software is required
- Standard V-mount, Anton Bauer, or 1/4" bolt
- All input and output ports with  $\pm 8$  kV ESD protection level (HBM, contact discharge)

## ■ Specifications

	Transmitter	Receiver
Interface	SDI Input(BNC Female); HDMI Input (Type A female); 2 Antenna port(PR-SMA male); DC input (4 Pin Lemo Female)	SDI Output(BNC Female); HDMI Output (Type A female); DC input (4 Pin Lemo Female)
Supply voltage range	6.5-16.8V DC	6.5-16.8V DC
Power consumption	< 6.5 W	< 6W
Size	(L x W x H):120 x 70 x 25mm excluding antennas	(L x W x H): 160 x 110 x 25mm
Mass Weight	380g	540g
Input Video Format	SDI:3G,HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; HDMI Type A: 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; SMPTE 259/274/292/296/372/424/425;	/
Output Video Format	/	SDI:3G,HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; HDMI Type A: 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; SMPTE 259/274/292/296/372/424/425;
Input Audio Format	SDI embedded 4 channel 24 bit/48KHz	/
Output Audio	/	SDI embedded 4 channel 24 bit/48KHz
Signal Indicator	POWER-Green; VIDEO-Yellow	POWER-Green; Wireless RSSI-Blue (4 LEDs); POWER/VIDEO-Yellow
Frequency Band	5.1-5.9GHz,configurable with China, North American, Europe,etc	5.1-5.9GHz,configurable with China, North American, Europe,etc
Modulation Mode	OFDM 16QAM	OFDM 16QAM
Transmission Power	<21dBm	/
Receiver Sensitivity	/	-75dBm
Occupied Bandwidth	20/40MHz	20/40MHz
Temperature Range	0~40°C(operating condition); -20~60°C(Storage)	0 ~ 40°C (operating condition); -20~60°C(Storage)
Compliance	FCC; CE; RoHS	FCC; CE; RoHS
Transmission Range	>700 Meters (2297 feet)	>700 Meters (2297 feet)
Video Processing Color Depth	8bit;10 bit;(4:0:0);(4:2:2);(4:4:4)	8bit;10 bit;(4:0:0);(4:2:2);(4:4:4)
Transmission Cross Compatibility	Ghost-Eye 100M;150M;300M;400M	Ghost-Eye 100M;150M;300M;400M
Time Code	Every 10 Seconds	Every 10 Seconds

### ■ Getting Started

- 1) Ensure the video source output of the camera is OK, and the HD monitor is powered on and switched to connected video input port.
- 2) Ensure 2 TX antennas are installed, preferably with an orthogonal angle to each other for best RF performance, as in figure below.



Transmitter

- 3) Ensure all input, output SDI or HDMI cables are connected.
- 4) Ensure both the transmitter and receiver are powered via battery or DC input. Then turn power switch of the transmitter and receiver, respectively, to 'ON'. The 'Power' indicator will then light.
- 5) Select the broadcasting channel via the "CH" button on both RX and TX, ensuring that both are set to the same channel. Press "OK" to confirm channel selection. When the network connection is established, the LCD display will display "LINK". When the video begins transmission the LCD screen will display "VIDEO". At this point the connected monitors will display the live feed from your camera via the TX to RX connection.

## ■ Frequency Selection

The wireless suite works in the 5.1-5.9GHz frequency band and can be flexibly configured to other licensed or ISM bands to accommodate different global regions. The side panel of the transmitter features a frequency selection knob (see below illustration), which provides a maximum of 4 workable frequency channels, and supports a maximum of 4 simultaneous receiver units.





# WIRELESS HDMI/SDI VIDEO TRANSMISSION SUITE

## GHOST EYE 400M KIT



FULL HD  
VIDEO

SDI &  
HDMI

<1MS  
LATENCY

PLUG &  
PLAY

RUGGED  
DESIGN

### EU Environmental Protection

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your local authority or retailer for recycling advice.



### ■ Product Description

The Ghost-Eye 400M Wireless HDMI/SDI Transmission Suite utilizes today's most advanced wireless video transmission technology, broadcasting uncompressed 3G SDI/HDMI HD video signals with zero delay up to 1000 meters (line of sight). The suite includes one transmitter and one receiver; where the transmitter provides a 3G SDI/HDMI HD input, the receiver provides 3G SDI/HDMI output. The Ghost-Eye 400M suite has 5 external stick antennas on the receiver and 2 external stick antennas on the transmitter. The transmission suite functions in the 5.1-5.9GHz frequency band and can be flexibly configured to licensed or ISM band frequencies around the globe. The side panel of the transmitter and receiver units have a frequency selection knob that provides a maximum of 4 workable frequency channels, and supports a maximum of 4 receiver units per transmitter unit. The wireless suite can accommodate a wide range of DC power input, including many kinds of camera battery models. The suite can also sustain ~8kV ESD (HBM, contact discharge), the industry class metal case and professional heatsink design guarantees robust reliability.

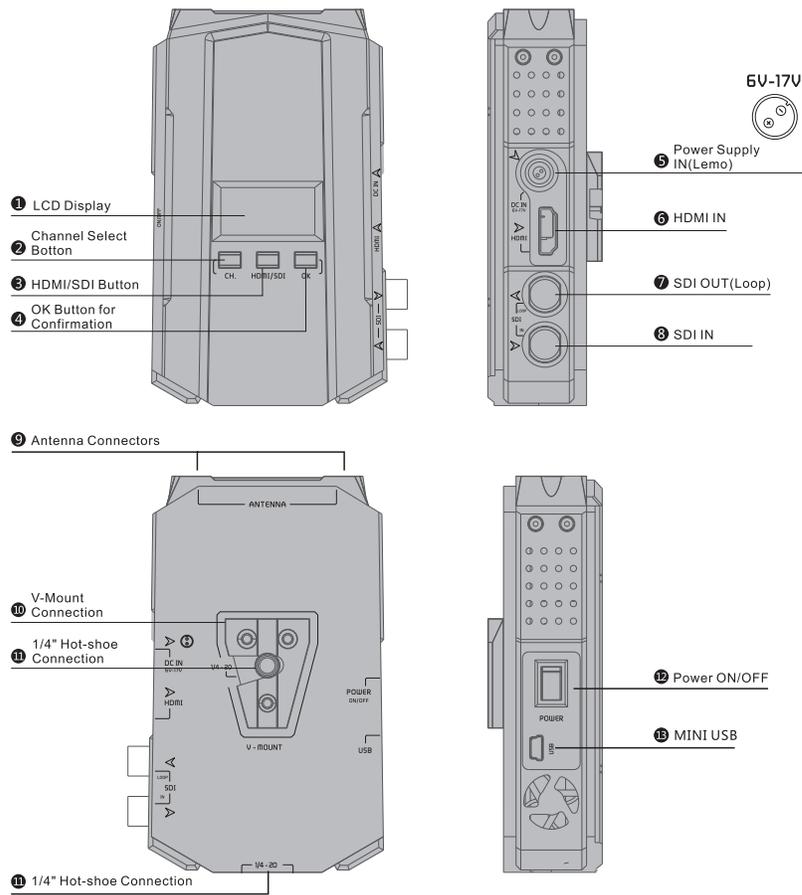
### ■ What is Included

- Transmitter Unit x 1
- Receiver Unit x 1
- Omni-Directional High Efficiency Antennas (SMA Female) x 7
- 15-27mm Mounting Bracket x 1
- 2-Pin Lemo Power Cable x 2
- User Manual x 1
- Waterproof Custom Fit Hard Case (310x190x93mm) x 1

### ■ Features

- Uses License-Free 5GHz ISM frequency band, maximum 4 channels automatic or manual selection, coexisting with WIFI.
- Supports wireless 10 bit HD video with no compression and no delay up to 1000m (3280ft).
- Uncompromised picture quality with very low latency <1ms.
- Support point to point, and point to multi points network topology, Multiple receiver is supported with up to 4 receivers .
- Cross compatibility with all Ghost Eye models.
- Highest resolution 10bits color depth 4:4:4, 1080p 60FPS HDMI and SD/HD/3G SDI input and output, HDMI SDI cross conversion is supported.
- Support professional audio formats include Dolby True HD, DTS-master, etc.
- AES-128/256 encryption with air interface HD video data stream.
- HDMI 1.4 with EDID support.
- Time Code, tally is supported for broadcast or live event streaming production.
- Build-in ultra silent intelligent fan prevent heat and moisture damage.
- Wide range power voltage input, adapt most kinds of camera battery, optional Standard V-mount, Anton Bauer, or ¼ bolt Mount battery plate can be installed.
- Any input and output ports with  $\pm 8$  kV ESD protection level (HBM, contact discharge).
- Plug & Play - no software is required, firmware upgradable via mini USB port.
- Professional standard 2-pin LEMO power plugs.
- Built-in LCD screen displays for device and signal status.
- Water and mist proof, shock proof production case with form insert ready for traveling.
- CE, FCC, RoHS certified product, safe to use worldwide.

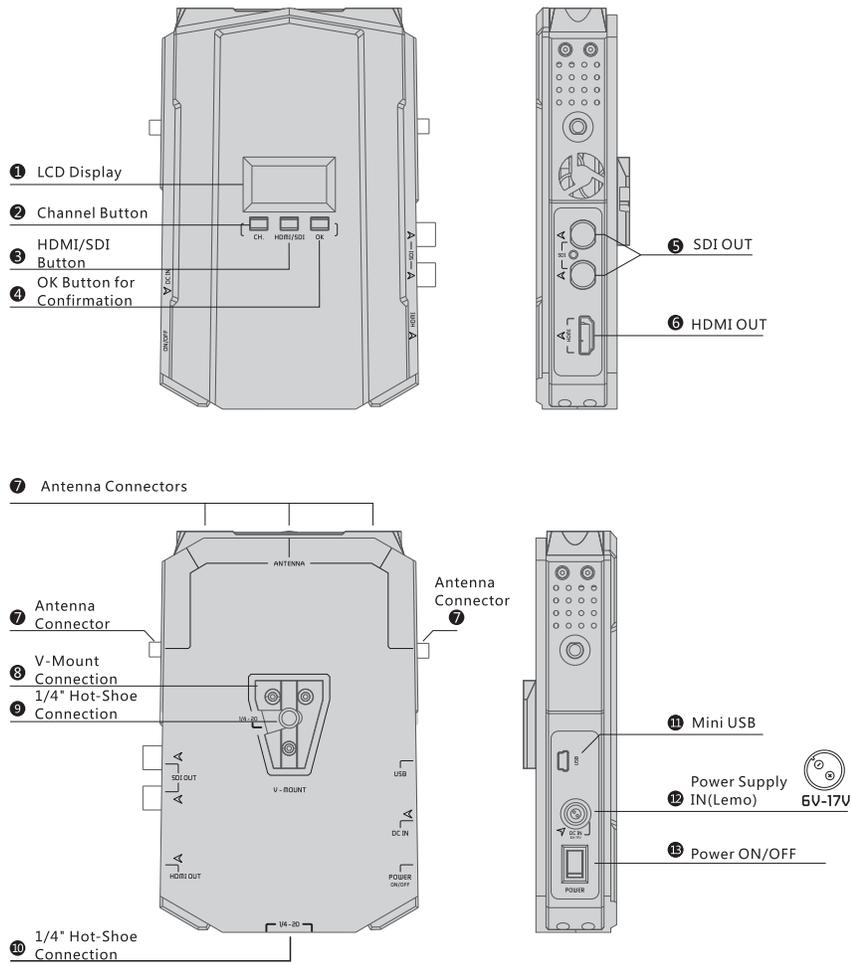
## ■ Diagram - Transmitter



## Transmitter

- 1) LCD display
- 2) Channel selection button
- 3) HDMI/SDI selection button
- 4) OK button for option confirmation
- 5) Power supply in (Lemo, 6-17V)
- 6) HDMI input
- 7) SDI out (monitor loop)
- 8) SDI input
- 9) Antenna connectors
- 10) V-mount connection (optional)
- 11) 1/4" hot-shoe connector
- 12) Power on/off
- 13) Mini USB

## Diagram - Receiver



### Receiver

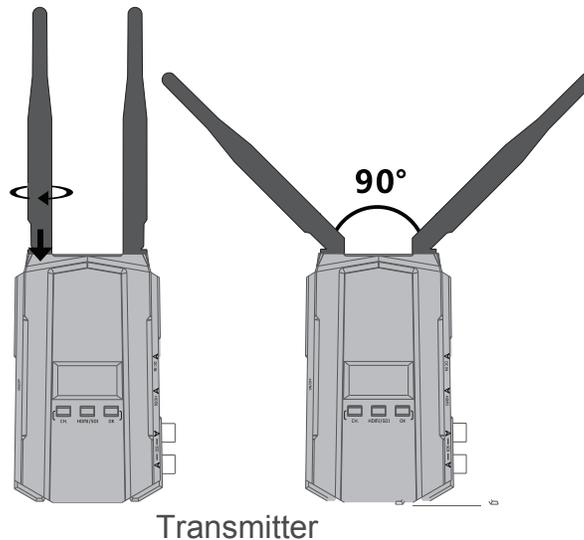
- 1) LCD display
- 2) Channel selection box
- 3) HDMI/SDI selection button
- 4) OK button for option confirmation
- 5) SDI output
- 6) HDMI output
- 7) Antenna connectors
- 8) V-mount connections (optional)
- 9) 1/4" hot-shoe connection
- 10) 1/4" hot-shoe connection
- 11) Mini USB
- 12) Power supply in (Lemo, 6-17V)
- 13) Power on/off

## ■ Specifications

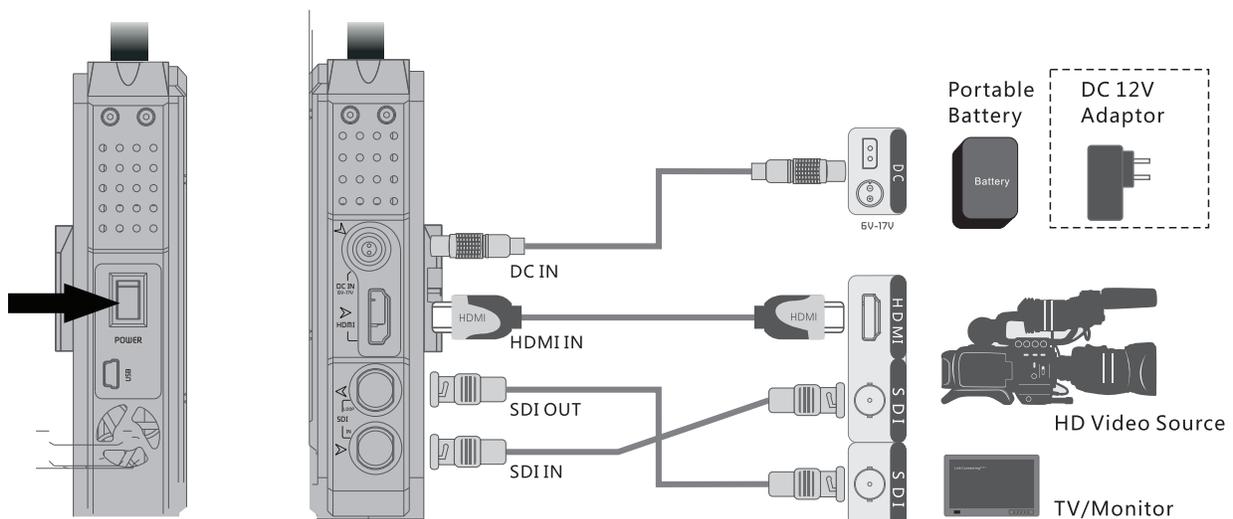
	Transmitter	Receiver
Interface	SDI Input(BNC Female); HDMI Input (Type A female); SDI LOOP Out; LEMO (0B/2 core); POWER IN; RP5MA Antenna; Power Switch	SDI Output(BNC Female); HDMI Output (Type A female); SDI LOOP Out; LEMO (0B/2 core); POWER IN; RP5MA Antenna; Power Switch
Supply voltage range	6.5-16.8V DC	6.5-16.8V DC
Power consumption	< 6.5 W	< 6 W
Size	(L x W x H):108 x 60 x 23mm	(L x W x H):126.5 x 75 x 31.5 mm
Mass Weight	360g	480g
Input Video Format	SDI:3G,HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; HDMI Type A: 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; SMPTE 259/274/292/296/372/424/425;	/
Output Video Format	SDI input loop out	SDI:3G,HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; HDMI Type A: 525i, 625i, 720p 50/59.94/60, 1080i 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60; SMPTE 259/274/292/296/372/424/425;
Input Audio Format	SDI embedded 4 channel 24 bit/48Khz; PCM, DTS-HD, Dolby True HD	/
Output Audio	SDI Embedded Audio Loop Out	SDI embedded 4 channel 24 bit/48Khz; PCM, DTS-HD, Dolby True HD
Signal Indicator	POWER-Green; VIDEO-Yellow	POWER-Green; Wireless RSSI-Blue (4 LEDs); POWER/VIDEO-Yellow
Frequency Band	5.1-5.9GHz,configurable with China, North American, Europe,etc	5.1-5.9GHz,configurable with China, North American, Europe,etc
Modulation Mode	OFDM 16QAM	OFDM 16QAM
Transmission Power	<21dBm	/
Receiver Sensitivity	/	-75dBm
Occupied Bandwidth	40MHz	40MHz
Temperature Range	0~40°C(operating condition); -20~60°C(Storage)	0 ~ 40°C (operating condition); -20~60°C(Storage)
Compliance	FCC; CE; RoHS	FCC; CE; RoHS
Transmission Range	>1000 Meters (3280 feet)	>1000 Meters (3280 feet)
Video Processing Color Depth	8bit;10 bit;(4:0:0);(4:2:2);(4:4:4)	8bit;10 bit;(4:0:0);(4:2:2);(4:4:4)
Transmission Cross Compatibility	Ghost-Eye 100M;150M;300M;400M	Ghost-Eye 100M;150M;300M;400M
Time Code	Every 10 Seconds	Every 10 Seconds

## ■ Getting Started

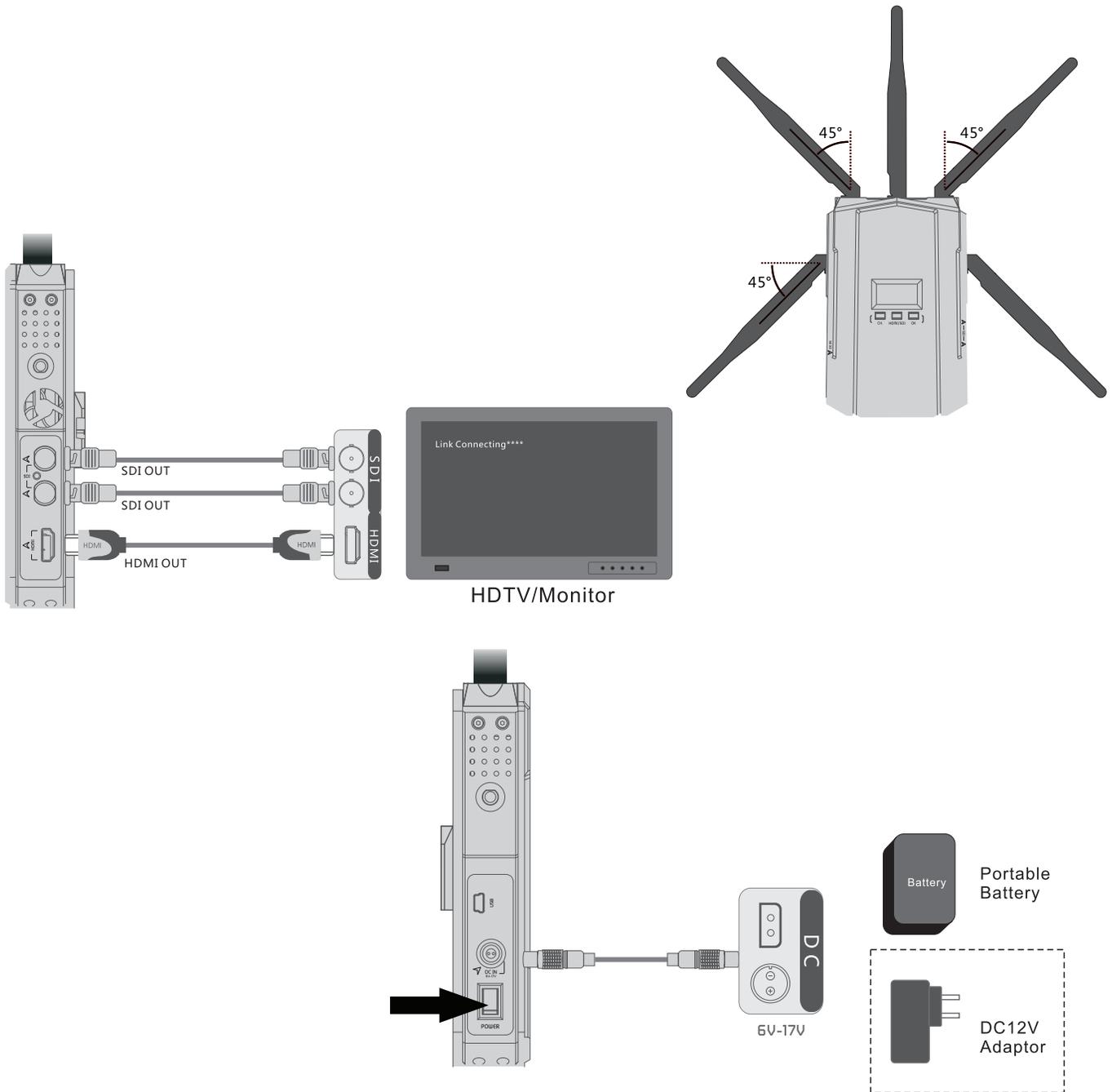
- 1) Ensure the video source output of the camera is OK, and the HD monitor is powered on and switched to connected video input port.
- 2) Ensure all 7 RX and all 2 TX antennas are installed, preferably with an orthogonal angle to each other for best RF performance, as in figure below.



- 3) Ensure all input, output SDI or HDMI cables are connected.
- 4) Ensure both the transmitter and receiver are powered via battery or DC input. Then turn power switch of the transmitter and receiver, respectively, to 'ON'.

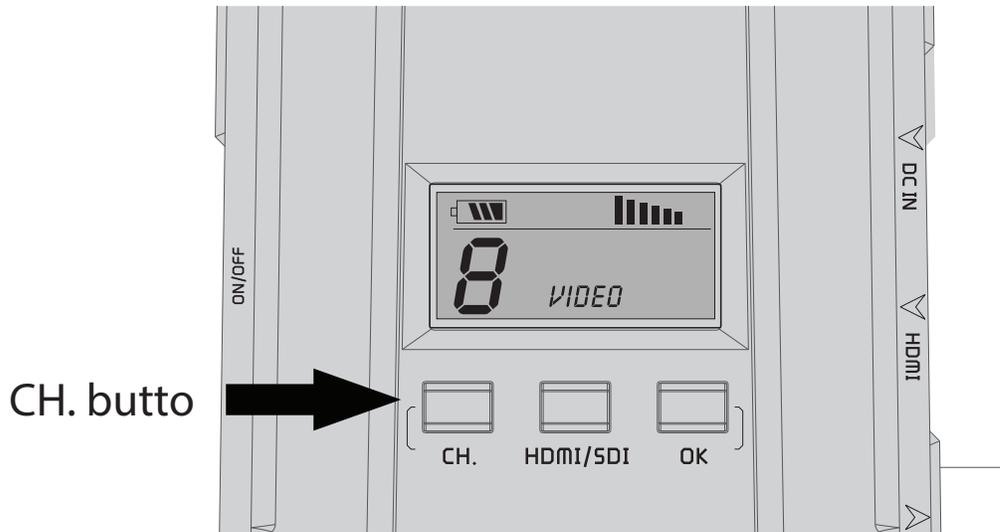


5) Select the broadcasting channel via the "CH" button on both RX and TX, ensuring that both are set to the same channel. Press "OK" to confirm channel selection. When the network connection is established, the LCD display will display "LINK". When the video begins transmission the LCD screen will display "VIDEO". At this point the connected monitors will display the live feed from your camera via the TX to RX connection.



## ■ Frequency Selection

The wireless suite works in the 5.1-5.9GHz frequency band and can be flexibly configured to other licensed or ISM bands to accommodate different global regions. The front LED panel of the transmitter features a frequency selection button (see below illustration), which provides a maximum of 4 workable frequency channels, and supports a maximum of 4 simultaneous receiver units.



### ■ No Output on Display

Check the TX and RX power first, then check if TX antenna and RX antenna is installed correctly.

Next, check 'Video' indicator. If TX 'Video' indicator is not lit, check if the SDI or HDMI cable is plugged in and the video source is ready.

Finally, confirm that the input video format is compatible with the product specifications.

### ■ Poor Quality Output Video

Ensure the SDI or HDMI input cable is properly connected, then check how many receiver-side 'RSSI' LEDs are lit. Ideally, 2 or more LEDs should be lit for optimal video quality. If there is 1 or 0 LEDs lit, the received wireless signal is too weak for proper transmission. Try to reduce transmission distance, or try changing the broadcast frequency channel in case the current channel is experience interference.

# Disclaimers

## ■ 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 polices 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](http://WWW.CINEGEARS.COM) for the latest version.
2. CINEGEARS reserves the right of final interpretation of this disclaimer.

CINEGEARS and the Follow Focus Kit are registered trademarks of Littlecent International Trading Corp. as names of product, brand, etc., appearing in this manual are trademarks or registered trademarks of their respective owner companies. This product and manual are copyrighted by CINEGEARS with all rights reserved. No part of this product or manual shall be reproduced in any form without the prior written consent or authorization of CINEGEARS.

## About Cine Gears Inc.

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.**

CINE GEARS INC. (USA)  
47 East South Street, Suite 401  
Frederick, Maryland 21701, USA  
Tel: 1 206 462 2858  
Toll Free: 1 800 693 8883

CINE GEARS INC. (Canada)  
2nd floor 2010-9111 Beckwith Road  
Richmond, V6X 1V7, Canada  
Tel: 1 604 243 9995