

WIRELESS HDMI/SDI VIDEO TRANSMISSION SUITE

GHOSTEYE M-SERIES

MANUAL BOOK

© 2016 Cine Gears INC. All Rights Reserved

Cautions

This instructional user manual and all the related documents are subject to change at the sole discretion of SFAIMO (Guangzhou SunFieldAimo Electron Technology Co., Ltd.). SFAIMO inc. reserves the right to make changes and improvements to any of the products described without prior notice. Under no circumstances shall SFAIMO be responsible for any loss of income or any special, incidental, consequential, or indirect damages howsoever caused. For up-to-date product information, visit https://www.ghosteye.com and navigate to the support page.

FCC ID: 2ADZC-HLWH005.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

\Lambda 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 sure the power switch is turned off before connecting or disconnecting any signal or power 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.

About Cine Gears Inc.

Cine Gears Inc. was originally founded in 2010, specializing in designing and producing advanced wireless transmission technologies for professional film production. All of the products that we offer, from when we were founded to this day, are custom designed in Canada and China.

With years of development preceding Cinegears opening up for business, we hit the ground running with our custom designed wireless follow focus systems. Now, we not only continue to innovate our wireless follow focus systems, but also adopt and develop new and exciting film technologies! Now, we distribute Ghost-Eye wireless video transmission systems which provide HD video broadcast with virtually no latency. With years of feedback from film producers we continue to not only innovate new technologies, but to improve on our existing designs. At Cinegears we are not satisfied until our products reach perfection! Our equipment is widely adopted, allowing us to expand to our current size, with 3 branches; our original Canadian branch, a branch in the USA, a branch in China, and service centers around the globe. Our wireless transmission technologies are in film productions around the world!

Cine Gears Inc. Service Guarantee

You don't need to send your Ghost-Eye products across the globe, just to your nearest service center! To ensure that you receive world-class service, we have service centers worldwide. We guarantee that your units are fully functional upon receipt, or else we will exchange it for a brand new unit within two weeks of purchase. After that, we will service any issue arising from manufacturing defect for up to 1-year. Contact Cinegears to find out which service center is best for you.

Reach us at 1-800-693-8883, or check out our website Cinegears.com.

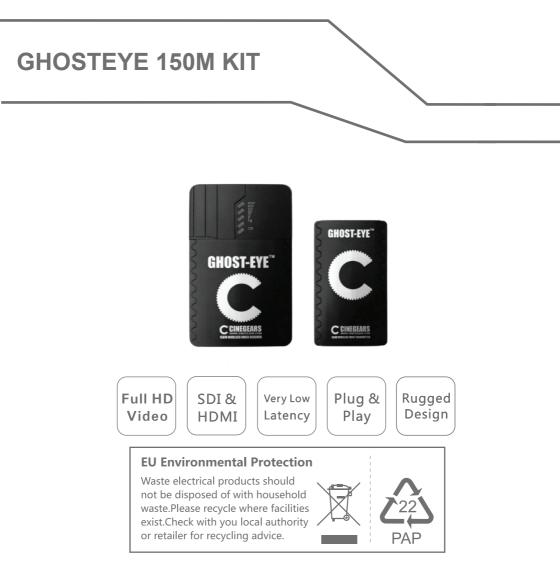
Ghost-Eye HD Wireless Video Transmission Systems

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 in to 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 latency.



WIRELESS HDMI/SDI VIDEO TRANSMISSION SUITE



Product description

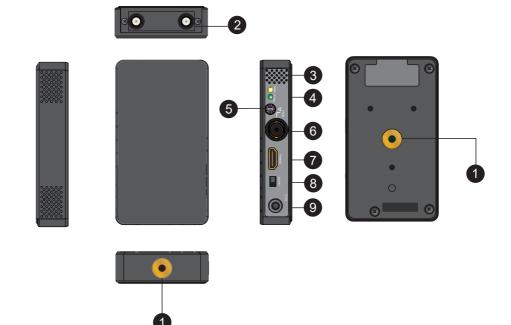
The Ghost-Eve 150M Wireless HDMI/SDI Transmission Suite utilizes today's most advanced wireless video transmission technology, broadcasting uncompressed 3G SDI/HDMI HD video signals with zero delay. The suite includes one transmitter and one receiver; where the transmitter provides a 3G SDI/HDMI HD input, the receiver provides 3G SDI//HDMI output. The Ghost-Eye 150M suite has 2 external stick antennas on the receiver and 5 internal antennas inside 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 10 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 and high efficiency antennas (SMA female) x 2
 - 15mm-27mm mounting bracket x 1
 - 2-Pin lemo power cable x 2
 - User manual x 1
 - Waterproof custom-fit hard case (310mm*190mm*93mm)

Features

- Uses License-Free 5GHz ISM frequency band, maximum 10 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 150m (500ft).
- Uncompromised picture quality with very low latency, <30ms
- Supports point to point, and point to multi points network topology, multiple receiver is supported with up to 4 receivers .
- Cross compatibility between Cinegears Ghost-eye 100M, 300M, and 400M transmitter and receivers.
- 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 ½ 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

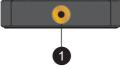


Transmitter

- 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,0-9
- 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
- LED status indication(4 blue LED for RSSI &1 LED yellow for POWER/VIDEO)
- 3) Frequency selection knob,0-9
- 4) SD/HD/3G SDI output
- 5) HDMI output
- 6) DC power switch
- 7) DC input, LEMO 4-pin B series connector

Specifications:

Interface (Type A female); DC input SMA male); DC input (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 Di 3G, HD SD-SDI(Auto/Manual-Selected); 526, 625; 720; 5059 9460, 1080 50759 , Juput Video Format 5013G, HD SD-SDI(Auto/Manual-Selected); 526, 625; 720; 5059 6460, 1080 50759, 9460, 1080 5059 8460; 1080 6023 88/24/25/29, 9 3050/59 8460; 5050/59 8460; 5050/59 8460; 5050/59 8460; 5050/59 8460; 5050/59 8460; 5050/59 8460; 5050/59 82/4222, 99 3050/59 9460, 1080 5059 8460; 5050/59 82/4222, 99 3050/59 9460, 1080 5059 82/4222, 99 3050/59 9460, 1080 5059 82/4222, 99 3050/59 9460, 5050/59 8460, 1080/2202/24/252, 99 3050/59 9460, 5050/59 8460, 1080/2202/24/252, 99 3050/59 9460, 5050/59 8460, 1080/2202/24/252, 99 3050/59 9460, 5050/59 8400, 1080/2202/24/252, 99 3050/500, 5050/59 8400, 108		Transmitter	Receiver
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): 528,628,720,905/59.94/60,1080/50/59.94/60, 1080/50/69.94/60,1080/623.89/24/25/29.93/050/59.94/60, 1080/50/69.94/60,1080/623.89/24/25/29.93/050/59.94/60, 1080/50/69.94/60,1080/623.89/24/25/29.93/050/59.94/60, 1080/50/69.94/60,1080/623.89/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/623.98/24/25/29.93/050/59.94/60, 1080/50/59.94/60,1080/62 Output Audio / SDI embedded 2 channel 24 bit/48/Hz / Signal Indicator POWER-Green; VIDEO-Yellow 5.1-5.9GHz, configurable with China, North American, Europe,etc 5.1-5.9GHz, configurable with China,	Interface	(Type A female); 2 Antenna port(PR-	SDI Output(BNC Female); HDMI Output (Type A female); DC input
Size(L x W x H):115 x 67 x 23mm excluding antennas(L x W x H): 160 x 110 x 25mmMass Weight270g355gMass Weight270g355gInput Video FormatSDI:3G,HD SD-SDI(Auto/Manual-Selected): 526; 625; 720 50/59 94/60, 1080 50/59, 94/60, 1080 50/59 94/60, 1080 523, 98/24/25/29, 9 1/0/50/59 94/60, 1080 50/59,	Supply voltage range	6.5-16.8V DC	6.5-16.8V DC
SIZE excluding antennas (L × W × H): 160 × 110 × 25mm Mass Weight 270g 355g Input Video Format SDI:3G,HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720 50/59 94/60, 1080 50/59. 94/60, 1080 23 98/24/25/29 9 /30/50/59 94/60, 1080 23 98/24/25/29 9 /30/50/59 94/60; SMPTE 259/274/29/29/30/50/59 94/60; 1080 50/59 94/60; SMPTE 259/274/29/29/372/424/425; SDI:3G,HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720 50/59 94/60, 1080 23 98/24/25/29 9 /80, 1080 23 98/24/25/29 9 /80, 1080 23 98/24/25/29 9 /80/1080 50/59 94/60, 1080 24/25/29 9 /80/1080 50/59 94/60, 1080/1500 feet) Transm	Power consumption	< 6.5 W	< 6 W
Input Video FormatDInput Video FormatSDI:3G, HD SD-SDI(Auto/Manual-Selected): 525i, 625i, 720p 50/59 94/60, 1080 50/59, 94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080 50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/59.94/60, 1080p23.98/24/25/29.9/30/50/59.94/60, 1080/50/59.94/60, 1080p23.98/24/25/29.9/30/24/24/25;Input Audio/SDI embedded 2 channel 24 bit/48KHz/Signal IndicatorPOWER-Green; VIDEO-Yellow5.1-5.9GHz, configurable with China, North American, Europe,etcModulation ModeOFDM 16QAMOFDM 16QAMOccupied Bandwidth40MHz40MHzOccupied Bandwidth40MHz40MHzOccupied Bandwidth40MHz40MHz <td>Size</td> <td></td> <td>(L x W x H): 160 x 110 x 25mm</td>	Size		(L x W x H): 160 x 110 x 25mm
Input Video Format525i, 625i, 720p 50/59 94/60, 1080, 50/59, 93/60, 79 93/60, 1080, 50/59, 93/60, 79 93/50/59 93/60, 70 93/50/59 93/60, 70 93/50/59 93/60, 500 SMPTE 259/274/292/296/372/424/425;Output Video Format/\$\$D1:3G, HD SD-SDI(Auto/Manual-Selected); 525i, 625i, 720p 50/59 94/60, 1080 150/59, 94/60, 1080 150/59, 94/60, 1080/23, 98/24/25/29, 97/30/50/59, 94/60, 1080 150/59, 94/60, 1080/23, 98/24/25/29, 97/30/50/69, 97/24/24/25 1080 160/24Input Audio//SDI embedded 2 channel 24 bit/48/HzSignal IndicatorPOWER-Green; VIDEO-Yellow SI-5.9GHz, configurable with China, North American, Europe, etcS1-5.9GHz, configurable with China, North American, Europe, etc </td <td>Mass Weight</td> <td>270g</td> <td>355g</td>	Mass Weight	270g	355g
Output Video Format/525i, 625i, 720 50'59, 94/60, 1080 j23.98/24/25/29.91/30/50/59.94/60, 1080 j23.98/24/25/29.9Output Audio FormatSDI embedded 2 channel 24 bit/48KHz/Output Audio/SDI embedded 2 channel 24 bit/48KHz/Output Audio/SDI embedded 2 channel 24 bit/48KHz/Signal IndicatorPOWER-Green; VIDEO-YellowPOWER-Green; Wireless RSSI-Blue (4 LEDs); POWER/VIDEO-YellowFrequency Band5.1-5.9GHz, configurable with China, North American, Europe, etc5.1-5.9GHz, configurable with China, North American, Europe, etcModulation ModeOFDM 16QAMOFDM 16QAMTransmission Power<18dBm	Input Video Format	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;	
Output Audio/SDI embedded 2 channel 24 bit/48KHzSignal IndicatorPOWER-Green; VIDEO-YellowPOWER-Green; Wireless RSSI-Blue (4 LEDs); POWER/VIDEO-YellowFrequency Band5.1-5.9GHz,configurable with China, North American, Europe,etc5.1-5.9GHz,configurable with China, North American, Europe,etcModulation ModeOFDM 16QAMOFDM 16QAMTransmission Power<18dBm	Output Video Format	1	/30/50/59.94/60;
Signal IndicatorPOWER-Green; VIDEO-YellowPOWER-Green; Wireless RSSI-Blue (4 LEDs); POWER/VIDEO-YellowFrequency Band5.1-5.9GHz,configurable with China, North American, Europe,etc5.1-5.9GHz,configurable with China, North American, Europe,etcModulation ModeOFDM 16QAMOFDM 16QAMTransmission Power<18dBm	Input Audio Format	SDI embedded 2 channel 24 bit/48KHz	1
Signal IndicatorPOWER-Green; VIDEO-YellowLEDs); POWER/VIDEO-YellowFrequency Band5.1-5.9GHz, configurable with China, North American, Europe,etc5.1-5.9GHz, configurable with China, North American, Europe,etcModulation ModeOFDM 16QAMOFDM 16QAMTransmission Power<18dBm	Output Audio	1	SDI embedded 2 channel 24 bit/48KHz
Frequency BandNorth American, Europe,etcNorth American, Europe,etcModulation ModeOFDM 16QAMOFDM 16QAMTransmission Power<18dBm	Signal Indicator	POWER-Green; VIDEO-Yellow	
Transmission Power<18dBm/Receiver Sensitivity/-75dBmOccupied Bandwidth40MHz40MHzTemperature Range0~40°C (operating condition); -20~60°C (Storage)0 ~ 40°C (operating condition); -20~60°C (Storage)ComplianceFCC; CE; RoHSFCC; CE; RoHSTransmission Range>150 Meter(500 feet)>150 Meter(500 feet)Video Processing Color Depth8bit; 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 CompatibilityGhost-Eye 100M; 150M; 300M; 400MGhost-Eye 100M; 150M; 300M; 400M	Frequency Band		· •
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 >150 Meter(500 feet) >150 Meter(500 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	Modulation Mode	OFDM 16QAM	OFDM 16QAM
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 >150 Meter(500 feet) >150 Meter(500 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	Transmission Power	<18dBm	1
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 >150 Meter(500 feet) >150 Meter(500 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	Receiver Sensitivity	1	-75dBm
Temperature Range -20~60°C(Storage) -20~60°C(Storage) Compliance FCC; CE; RoHS FCC; CE; RoHS Transmission Range >150 Meter(500 feet) >150 Meter(500 feet) Video Processing Color 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 Ghost-Eye 100M;150M;300M;400M Ghost-Eye 100M;150M;300M;400M	Occupied Bandwidth	40MHz	40MHz
Transmission Range >150 Meter(500 feet) >150 Meter(500 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	Temperature Range		
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	Compliance	FCC; CE; RoHS	FCC; CE; RoHS
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	Transmission Range	>150 Meter(500 feet)	>150 Meter(500 feet)
Compatibility Ghost-Eye 100M;150M;300M;400M Ghost-Eye 100M;150M;300M;400M		8bit;10 bit;(4:0:0);(4:2:2);(4:4:4)	8bit;10 bit;(4:0:0);(4:2:2);(4:4:4)
Time Code Every 10 Seconds Every 10 Seconds	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) 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

- 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
- 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.



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 10 workable frequency channels, and supports a maximum of 4 simultaneous receiver units.





WIRELESS HDMI/SDI VIDEO TRANSMISSION SUITE



Product description

The Ghost-Eve 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 300 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 10 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
 - 15mm-27mm mounting bracket x 1
 - 2-Pin lemo power cable x 2
 - User manual x 1
 - Waterproof custom-fit hard case

Features

- 5GHz ISM Band wireless HD video transmission up to 300m (980ft) 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 between Cinegears Ghost-eye 100M, 300M, and 400M transmitter and receivers.
- HDMI 1.4 with EDID support
- Uncompromised picture quality with very low latency <30ms
- 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 ±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;	1
Output Video Format	1	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	1
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	1
Receiver Sensitivity	1	-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	>150 Meter(500 feet)	>150 Meter(500 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

 Ensure the video source output of the camera is OK, and the HD monitor is powered on and switched to connected video input port.
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.

Frequencey 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 10 workable frequency channels, and supports a maximum of 4 simultaneous receiver units.





WIRELESS HDMI/SDI VIDEO TRANSMISSION SUITE



Product description

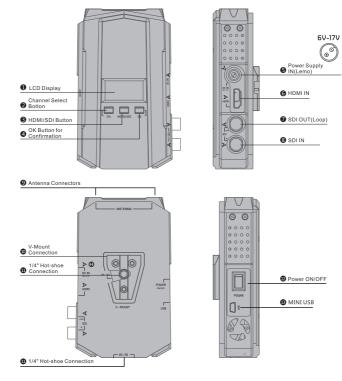
The Ghost-Eve 400M Wireless HDMI/SDI Transmission Suite utilizes today's most advanced wireless video transmission technology, broadcasting uncompressed 3G SDI/HDMI HD video signals with zero delay up to 400 meters (line of sight). The suite includes one transmitter and one receiver; where the transmitter 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 or 10 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
 - 15mm-27mm mounting bracket x 1
 - 2-Pin lemo power cable x 2
 - User manual x 1
 - Waterproof custom-fit hard case

Features

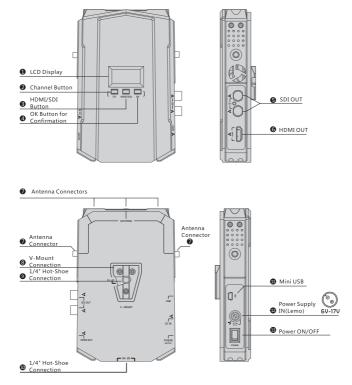
- Uses License-Free 5GHz ISM frequency band, maximum 4 channels automatic or manual selection, coexisting with WIFI.
- Supports wireless 10 bit HD video with no compression and no delay up to 400m (1300ft).
- Uncompromised picture quality with very low latency <30ms.
- Support point to point, and point to multi points network topology, Multiple receiver is supported with up to 4 receivers .
- Cross compatibility between Cinegears Ghost-eye 100M, 150M, and 300M transmitter and receivers.
- 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 fun prevent heat and moisture damage.
- Wide range power voltage input, adapt most kinds of camera battery, optional Standard V-mount, Anton Bauer, or ½ bolt Mount battery plate can be installed.
- Any input and output ports with ±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



- 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



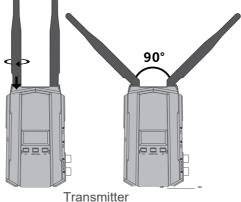
- 1) LCD display
- 2) Channel selection box
- 3) HDMI/SDI selection button
- 4) OK button for option confirmation
- 5) SDI output
- 6) HDMI output
- 7) Antenna connectors
- 8) V-mount connections (optional)
- 9) 1/4" hot-shoe connection
- 10) 1/4" hot-shoe connection
- 11) Mini USB
- 12) Power supply 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;	1
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	1
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	1
Receiver Sensitivity	1	-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	>400 Meter(1500 feet)	>400 Meter(1500 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

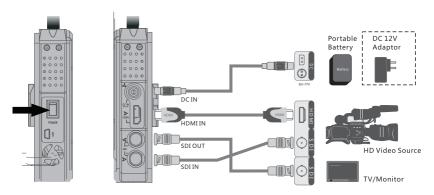
Getting started

- 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.

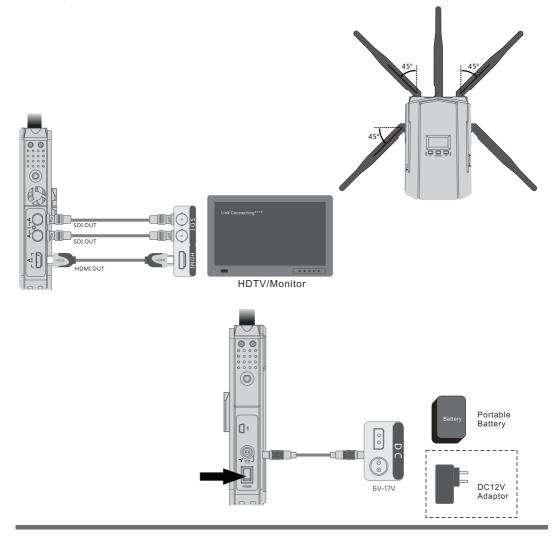


3) Ensure all input, output SDI or HDMI cables are connected.

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'.

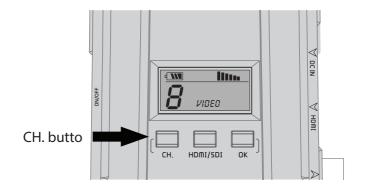


5) Select the broadcasting channel via the "CH" button on both RX and TX, ensuring that both are set to the same channel. Press "OK" to confirm channel selection. When the network connection is established, the LCD display will display "LINK". When the video begins transmission the LCD screen will display "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.



Troubleshooting

No output on display

Check 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 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.

Customer Support

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

CINE GEARS INC.(USA) 205-8105 Birch Bay Square ST, Blaine, WA. 98230 USA. Tel: 1 206 462 2858 Toll Free: 1 800 693 8883 CINE GEARS Inc. (Canada) 201- 6700 No. 3 Road. Richmond, BC,V6Y 2C3,Canada. Tel: 1 604 243 9995