



Cosmo 400 User manual



Long Range Wireless HDMI/SDI HD Video Transmission Suite

Preface

Thanks for purchasing Hollyland Cosmo 400 Long Range Wireless HDMI/SDI HD Video Transmission Suite. Before using this product, read this user manual carefully please. Follow the instruction to keep your safety and avoid products damage. This user manual might be modified irregularly because of updated products. And the manual is for instruction only; we do not guarantee the information and the suggestions.

■ Cautions

1. Do not use this product in the extreme hot, cold, dusty or humid environments.
2. Prevent friction with hard objects.
3. Avoid the product falling down from a high place, or it may damage the hardware.
4. The product is not water proofed. So do not get any liquid into the unit please.
5. Do not dismantle, assemble or alter the product arbitrarily.

■ Product model and standard

Hollyland Cosmo 400 Long Range Wireless HDMI/SDI Transmission Suite utilize today's most advanced wireless video transmission technology, which can realize the broadcast-class and uncompressed 3G SDI/HDMI HD video signal transmitted with no compression and zero delay. The suite include one transmitter and one receiver, where the transmitter provides a 3G/HD SDI input and a HDMI input, and the receiver also provide a 3G/HD SDI output and a HDMI output. The wireless HD suite has 2 stick antennas in transmitter side, and 5 internal antennas in receiver side, and it can work in 5.1-5.9GHz frequency band and be flexibly software configured to licensed or ISM band of global different regions, as well as the side panel of both transmitter and receiver has been installed a frequency select knob, which provide maximum 10 workable frequency channels, and support maximum 4 sets working simultaneously. The wireless suite can accept wide range DC power input, which is suitable for many kinds of camera battery model. The suite also can sustain ± 8 kV ESD (HBM, contact discharge), the industry class metal case and professional heat design would guarantee most robust reliability.

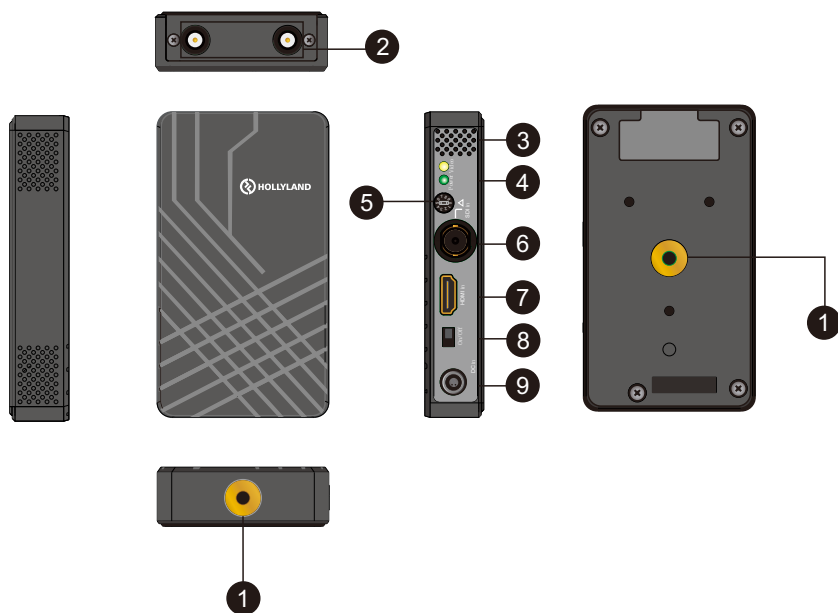
■ Main features:

- HDMI 1.3 spec supports
- HDMI and SD/HD/3G SDI input and output
- Highest resolution 1080p 60, no delay and no compression
- AES-128 encryption with air interface HD video data stream
- Support point to point, and point to multi point network topology
- 5GHz ISM frequency band, maximum 10 frequency channel selected by user knob, coexist with WIFI.
- RX built-in antenna, more compact
- Maximum transmission distance 120m
- Signal indicators for wireless power status, video status and receiver RSSI
- Wide range power voltage input, adapt most kinds of camera battery
- Optional Sony F970 battery buckle, convenient for field battery install and replacement
- Any input and output ports with ± 8 kV ESD protection level (HBM, contact discharge)
- Industrial metal case, stable and reliable

■ Parameters:

| | Transmitter | Receiver |
|----------------------|---|---|
| Interface | SDI Input (BNC Female) ; HDMI Input (Type A female) ; 2 Antenna port(RP-SMA male) ; DC input | SDI Output (BNC Female) ; HDMI Output (Type A female); DC input |
| Supply Voltage Range | 7-36V DC | 7-36V DC |
| Power Consumption | < 6.5 W | < 7.5 W |
| Size | (L x W x H): 115x 67 x 23mm don't include antennas | (L x W x H): 152x 95 x 23mm |
| Mass Weight | 270g | 355g |
| Input Video Format | HDMI: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 SDI:3G, HD, and SD-SDI (auto-selected), SMPTE-259/274/292/296/372/424/425;1x BNC | / |
| Output Video Format | / | HDMI: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 SDI:3G, HD, and SD-SDI (auto-selected), SMPTE-259/274/292/296/372/424/425; 1x BNC |
| 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 | Maximum 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. | FCC; CE. |

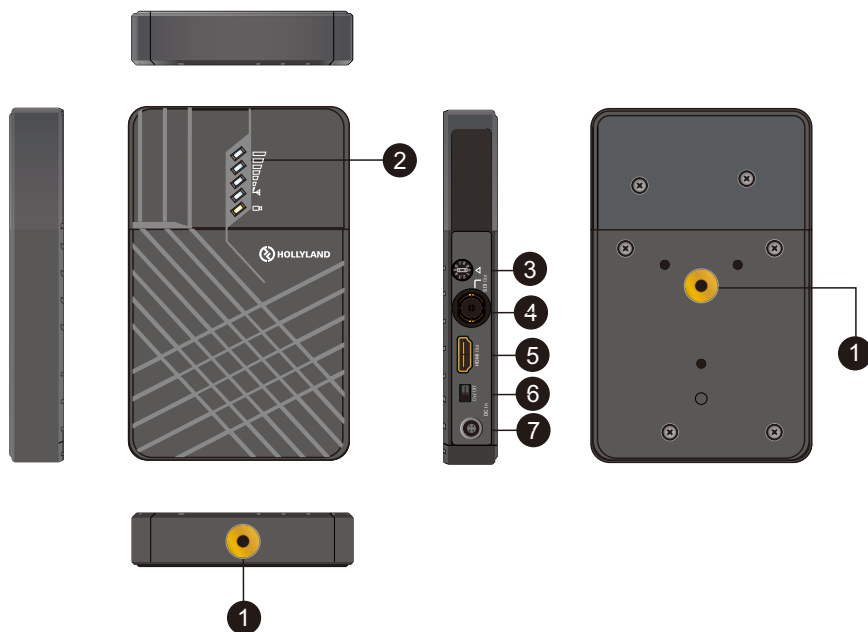
■ Parameters:



Transmitter

- 1) 1/4-20 Screw Hole
- 2) RP-SMA male antenna connector
- 3) Video input indicator, 1 yellow LED
- 4) Power on 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

■ Parameters:



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,0-9
- 4) SD/HD/3G SDI output
- 5) HDMI output
- 6) DC power switch
- 7) DC input, LEMO 4-pin B series connector

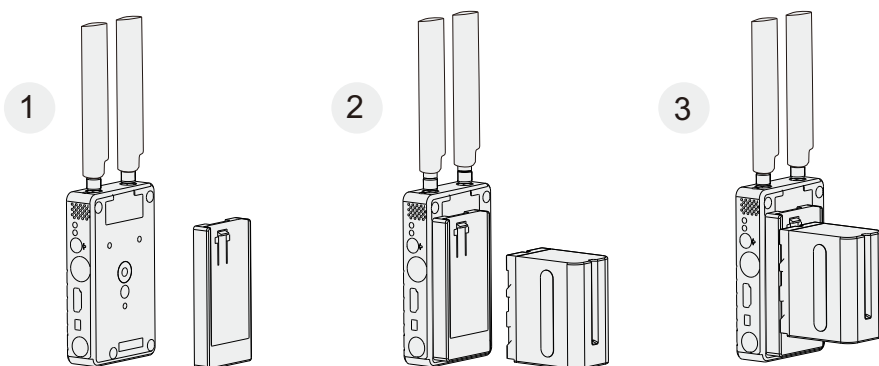
■ Packing list:

- 1 unit transmitter
- 1 unit receiver
- 2 pcs 5GHZ omni-directional and high efficiency antennas
(SMA female)
- 2×flat screwdrivers
- 1×7" articulating arm
- 1×1/4-20 screw to ISO518 hot shoe converter
- 1× crab clam
- 2× D-Tap to 4-pin lemo converter cable
- 1 user manual
- 355X272X105.38MM tool case packing

■ Installation details and cautions

● Transmitter side

- a) Install 2 Omni-directional and high efficiency antennas to transmitter's RP-SMA female antenna connectors.
- b) There is one 1/4-20 screw in transmitter metal case, which are located on the bottom of case. So the user can utilize a 1/4 screw to ISO518 hot-shoe converter fix the transmitter into camera.
- c) Install battery into battery buckle if your product model includes battery buckle options; please note the battery model must match the battery buckle type.
- d) The user can also utilize a subsidiary LEMO 4 pin-male to D-type receptacle power cable to get power input from an outside power source.
- e) All TX installation guidelines see below figure.

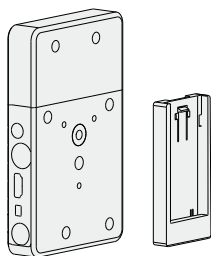


Installation

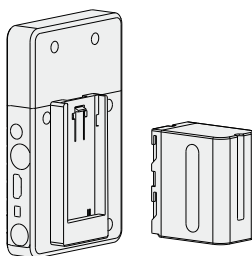
●Receiver side

- a) There is one 1/4-20 screw nut in the bottom side of receiver. The user can utilize a 7" articulating arm and crab clam to install the receiver on one tripod.
- b) Install battery into battery buckle if your product model includes the option of battery buckles; please note the battery model must match the battery buckle type.
- c) The user can also utilize a subsidiary LEMO 4 pin-male to D-type receptacle power cable to get power input from an outside power source.
- d) All RX installation guidelines see below figure.

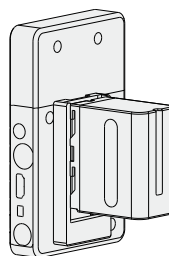
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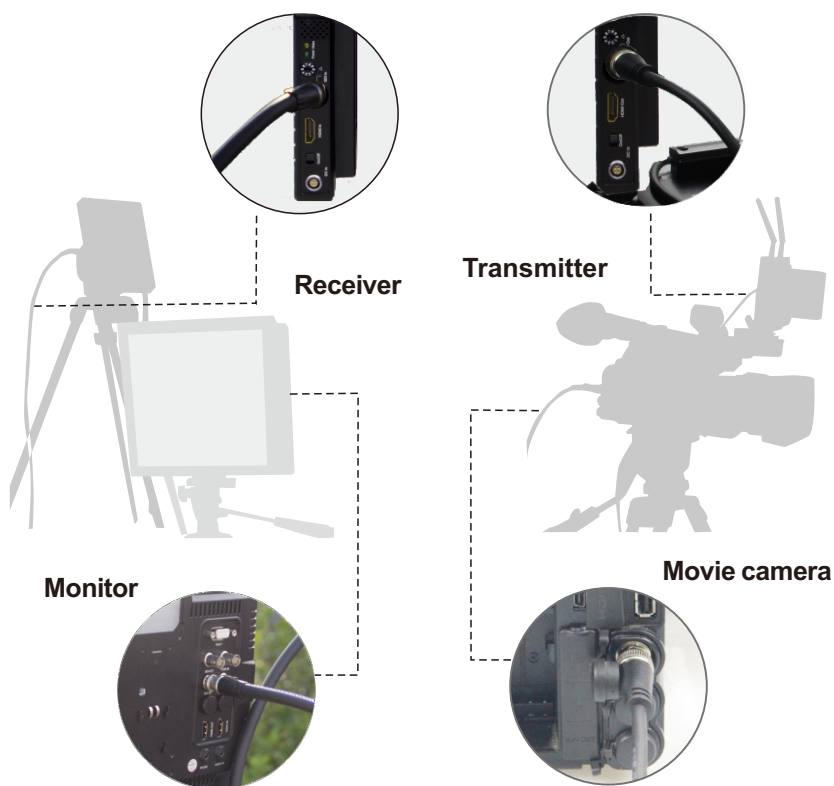


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● Typical connection instruction

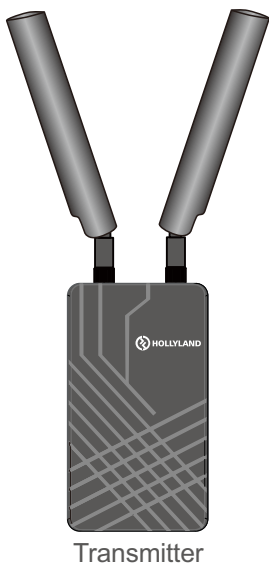
Connect camera SDI or HDMI output to transmitter SDI or HDMI input port, and the transmitter can be fixed in hot-shoe port of the camera. Connect HDMI or SDI output port of the receiver to SDI or HDMI input port of the HD monitor. Make sure all antennas and batteries are equipped normally. See below diagram.



●Getting started

After finishing all steps above, system is workable, follow below steps.

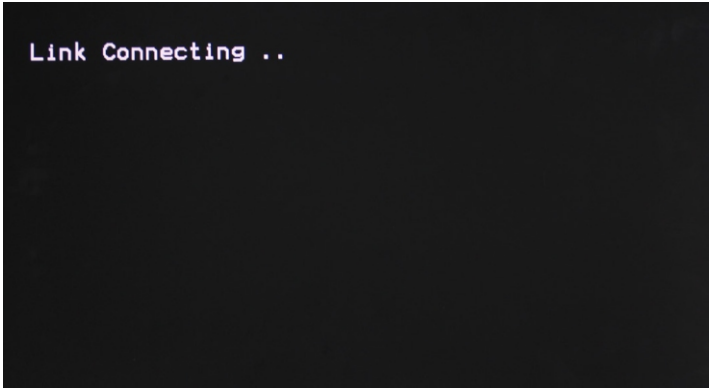
- a) Ensure the video source output of the camera is OK, and the HD monitor is power on and switched to connected video input port.
- b) Ensure all input, output SDI or HDMI cables are connected.
- c) Ensure 2 TX antennas are installed, and it is better to keep TX 2 antennas with orthogonal angle each other for best RF performance. Like below figure.



- d) Ensure both the transmitter and receiver installed the battery or DC input port connected to outside power source. Then turn power switch of transmitter and receiver to 'ON' respectively, then 'Power' indicator will light.

Installation

- e) Ensure the frequency knobs of transmitter and receiver are set with the same number, and this will make sure the transmitter and receiver work with same RF frequency.
- f) If the camera is on and video input is OK, TX side 'video' indicator will light.
- g) 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.....' like below picture.



Link Connecting ..

- h)The system will spend 20-30 seconds on constructing the link, and real link period will depend on the current wireless channel condition. When wireless link is set up, "RSSI" light will light and indicate current received wireless signal strength, as well "Video" indicators will light, and then connected HD monitor will display the video and audio accordingly.

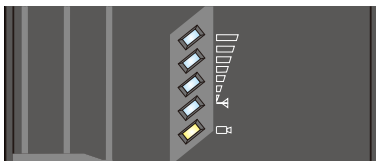
■Input video port selection of transmitter

The transmitter has a 3G SDI video input port and a HDMI video input port, and the system will detect valid video source automatically of SDI and HDMI port, and then switch it as main video input channel. If both SDI and HDMI have valid video input, the system will take SDI input as priority.

■RSSI indicators

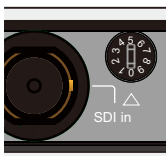
The receiver will calculate received RF signal strength internally and 5 “RSSI” LEDs will be used to indicate wireless signal power and quality. The user can observe the RSSI LED status to know if the current wireless link is reliable or not. From 1 to 5 lit LEDs show RSSI from Min to Max.

| Lit RSSI LEDs Volume | Wireless Link Quality | Video Quality |
|----------------------|-----------------------|---------------------|
| 4 | Strong | Best |
| 2-3 | Middle | Good |
| 1 or no lit LED | Weak | Visible Video Noise |



■Frequency selection and configuration

The wireless suite can work in 5.1-5.9GHz frequency band and be flexibly software configured to licensed or ISM band of global different regions, as well as the side panel of both transmitter and receiver has been installed a frequency select knob, which provide maximum 10 workable frequency channels, and support maximum 4 sets working simultaneously. See below frequency knob figure.



■ Storage conditions

Products storage temperature should be $-20^{\circ}\text{C}\sim 60^{\circ}\text{C}$. For long time storage requirement, please use original carbon boxes, and avoid from high humid, acid base or dusty place.

■ Maintenance

Warning

To ensure your safety, please choose original adapters. And provide stable AC input according to this manual.

■ Normal problems

a) No output on display

Check TX and RX power first, and see if TX or RX battery is existed, then check if TX antenna and RX antenna installed right. After that, check 'Video' indicator, if TX 'Video' indicator is not light, then check SDI or HDMI cable is plugged in and video source is ready please. Finally may check input video format is compatible with this product specs.

b) Poor output video quality

Check if SDI or HDMI input or output cable is plugged well, then check how many receiver side 'RSSI' LEDs is lit, there should be 2-3 RSSI LED lit if the user want to get better video quality; if there is only 1 RSSI LED or no LED lit, that means the received wireless signal is weak, and should decrease the transmission distance or try to change to other frequency channels in case some exist interference.

*For more information on Hollyland series systems,
please check :www.hollyland-tech.com*