

■ CONTENTS

User instructions

Thank you for choosing CVW's professional wireless high-definition audio and video transmission products. Before using this product, please read the following precautions carefully:

- * Avoid using this product for long-term exposure to the sun or dust
- * Be sure to use the product within the temperature and humidity range
- * Do not operate the product under vibration or strong magnetic field
- * Do not put conductive materials in the ventilation holes of the product
- * Without the guidance of professionals of our company, please do not open the product case by yourself
- * Before power on, make sure that the input voltage of the adapter is AC110V-220V, and the output voltage and current meet the product specifications
- * Before inserting the battery, ensure that the battery voltage meets the product specifications

About this manual

This manual details the product specifications and interface descriptions, instructions for use, precautions, and troubleshooting. Please read the instructions carefully before using the product. If you have any questions or difficulties in using this product, please contact our company or distributor in time.

Product Brief

This product is a wireless video transmission system based on the 5GHz frequency band, with a maximum video resolution of 1080P60Hz, which can be widely used in commercial live broadcast, event live broadcast, film and television shooting, campus radio and other fields.

System connection diagram

This product includes a transmitter and a receiver. The transmitter supports 1 HDMI input and SDI input and loop-out. The receiver supports 1 HDMI and 2 SDI output at the same time. The following is a schematic diagram of the application connection of this product.

Product Highlights

High-quality low-latency video

Support HD-SDI & 3G-SDI input and output, support HDMI full HD input and output, the highest resolution is 1080P60Hz. Using H.264 codec technology, the image is high-definition, and the delay is as low as 70ms

Beam-Forming

Combining 2x2 MIMO and Beam-Forming (beam forming) technology makes the wireless beam more concentrated and more directional in the direction of transmission to reception, higher signal-to-noise ratio, and a longer transmission distance

Stronger anti-interference ability

Point-to-point mode and pull flow mode

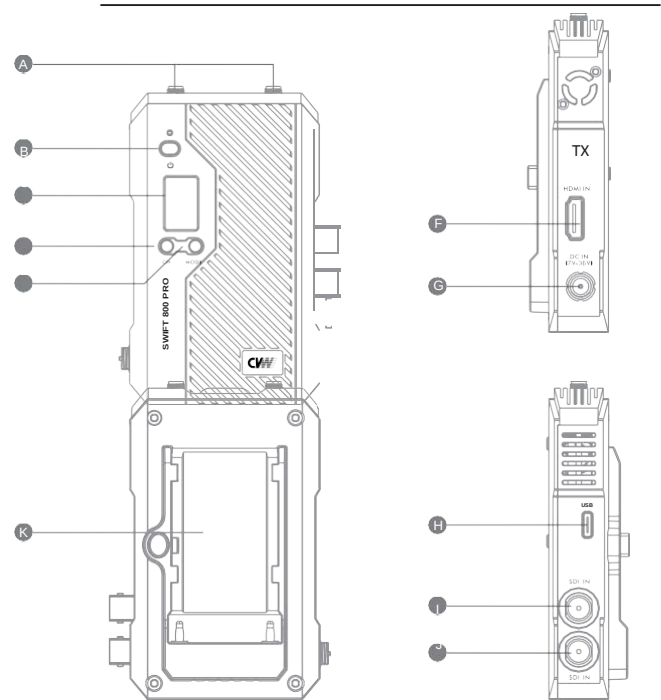
Support two working modes of point-to-point and RTSP pull flow and can be switched. In the point-to-point mode, the product supports one send and one receive and the video output interface is HDMI and SDI. In the RTSP pull-stream mode, the product supports one send, one receive, and one send, multiple receive. There are more options for different applications.

Product packaging details

After unpacking, please check the packing list details, if there are missing parts, please contact the dealer. The parts involved in each model are subject to the following packing list.



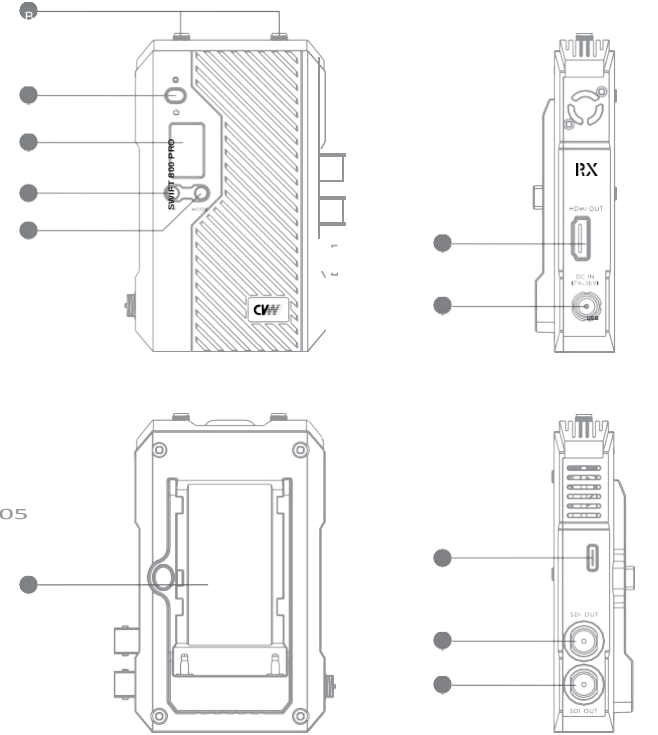
Product
interface introduction



Transmitter 7103 interface description

A	Antenna interface
B	Power button
C	OLED display
D	CH button
E	MODE button
F	HDMI input
G	DC IN
H	USB interface
I	SDI loop output
J	SDI input
K	NP-F battery interface

Receiver interface introduction
RX:3103



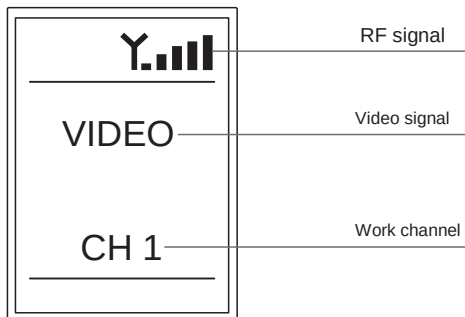
05

Receiver 3103 interface description:

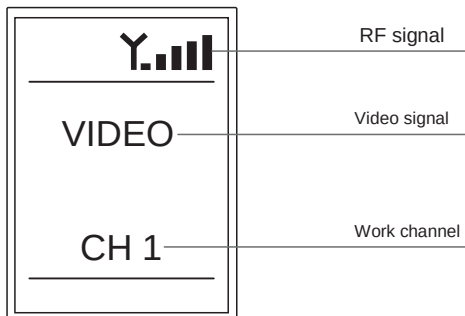
序号	Antenna interface power button	说明
B	OLED display	
C	CH button	
D	MODE button	
F	HDMI output	
H	DC IN	
I	USB interface	
J	SDI output	
K	SDI output	
	NP-F battery interface	

06

TX:7103



RX:3103



Transmission distance

Factors affecting distance

The installation height of the transmitter and the receiver: a higher installation height will avoid being blocked by objects and humans, increasing the distance

Wireless transmission code rate, the larger the code rate, the shorter the transmission distance, the recommended single channel code rate is 15Mbps

Blocking of objects such as metals, walls, or human bodies will cause the wireless signal strength to be greatly attenuated, resulting in a reduction in transmission distance

Whether there is interference

Whether the antenna placement angle is in an ideal state

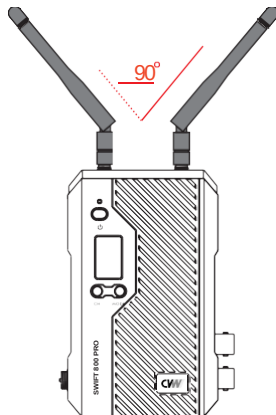
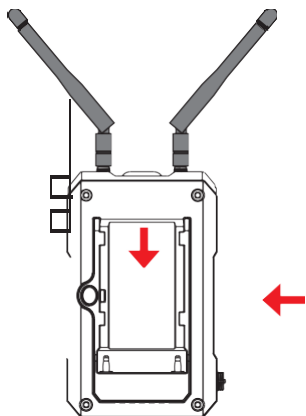
Product installation instructions

Transmitter installation instructions

1. Please install the antenna to the antenna interface of the transmitter as shown in the figure. To obtain the best wireless transmission distance, the antenna

The following picture is placed (90 ° angle between 2 antennas) (as the picture shows)

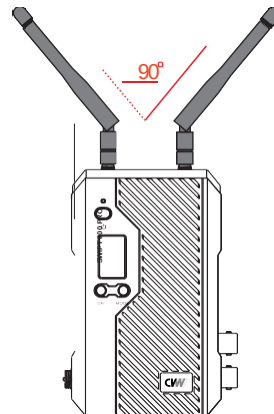
1. Install the transmitter battery (as shown)

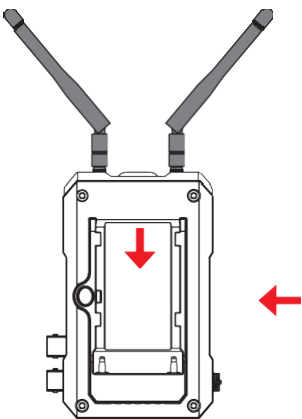


3. Fix the transmitter to the camera head or handle through the nut hole on the bottom of the fuselage (as shown in the figure) Warning: When the device is not in use, the battery needs to be removed.

Receiver installation instructions

1. Please install the antenna to the antenna interface of the receiver according to the figure.

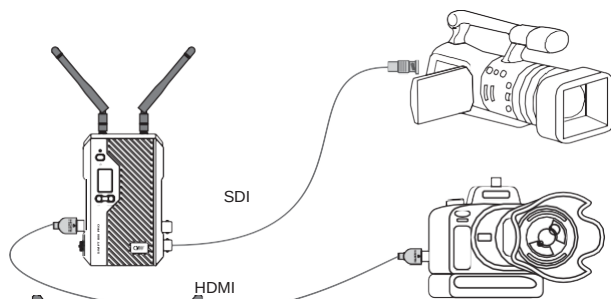




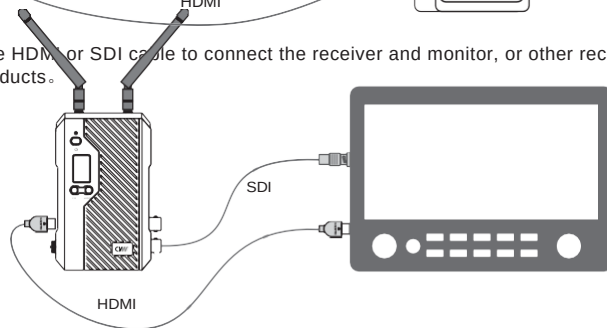
Product operation

1. Product connection

Use HDMI or SDI cable to connect the transmitter to the camera \ SLR camera



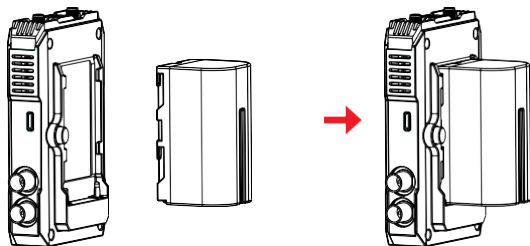
2. Use HDMI or SDI cable to connect the receiver and monitor, or other receiver products.



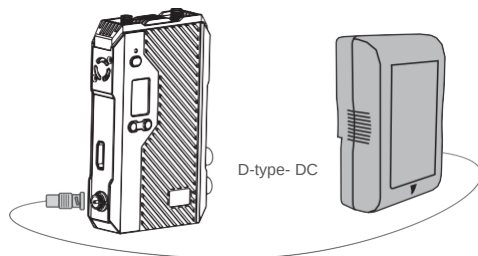
Power supply and start

The transmitter uses any of the following power supply methods, long press the power button 3S to start the transmitter

a) Install the NP-F battery in the NP-F battery slot on the back of the transmitter

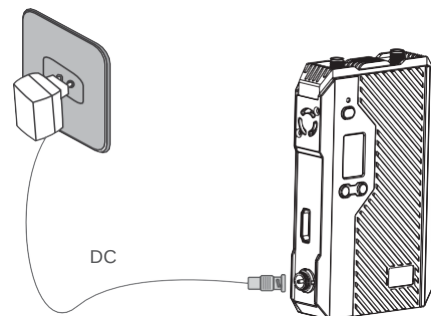


a) D-type to DC cable is required to use V-bucket batteries to power the product

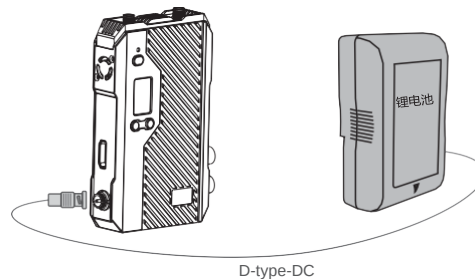


1. The receiver uses any of the following methods to supply power. Press and hold the power button 3S to start the receiver

2. Use the included DC power adapter to power the product



b) Use V button battery to power the product (need to use D-type to DC cable)



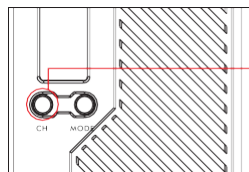
Switch channel

Tap the CH button of the transmitter or receiver to switch channels. Both the OLED screens of the receiver and transmitter will display the channel CH number after switching.

Code operation

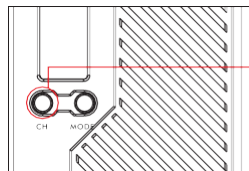
This function needs to be operated on the transmitter and receiver:

This function needs to be operated on the transmitter and receiver



Press and hold the CH button for 3 seconds and release the button

Receiver: Press and hold the CH button for 3 seconds, then release the button, the OLED screen displays WPS characters, the receiver enters the code matching mod



Press and hold the CH button for 3 seconds and release the button

Working mode and switching

1. Point-to-point mode

In the point-to-point mode, the video source is given to the transmitter through HDMI or SDI, and the receiver will output the received signal to the video channel through HDMI and SDI interfaces to monitors, switch stations and other products.

2. Pull flow mode

In pull-stream mode, the video source can be simultaneously transmitted to the receiver, mobile phone, iPad, etc. products that are in the same network as the transmitter via WiFi networking through the HDMI or SDI interface of the transmitter: the receiver will receive the The signal is output to the monitor through the HDMI and SDI interfaces; the mobile phone, iPad, etc. will directly display the received video signal

on the screen.

Work mode switch

1. Switching between the two operating modes requires operation on the transmitter and receiver (the transmitter and receiver need to work in the same mode for the transmitter and receiver to be in a normal connection).

2. The product's factory mode is point-to-point mode.

3. Press and hold the MODE button of the transmitter and receiver for 3 seconds to switch the mode. When switching from point-to-point mode to pull-current mode, the word "RTSP" will be displayed on the OLED display; when switching from pull-current mode to point-to-point mode "RTSP" will disappear on the OLED display.

Pull flow mode operation

Instructions for using the mobile APP

Firmware upgrade

1. The operation of the wireless software upgrade of the transmitter and receiver is the same.
2. Download the firmware to be upgraded to a storage device such as a USB flash drive, and connect the USB flash drive to the USB interface of the product. After the product is powered on, the product will automatically upgrade after reading the firmware upgrade, and the upgrade will be completed after the product is restarted. At this time, you can unplug the U disk (from Xie Zongna learned that you do not need to use U disk to connect to product upgrades in the future, only need APP to do software upgrade, one-click download and upgrade; if U disk upgrade is required, please describe in detail, For example, what is the status of the lights before and after the upgrade?)

Product specification

project	TX: 710 3	RX: 3103
Operating frequency range	5.10~5.90 (GHz)	
Video format	1080p60/59.94、1080p50、1080p30/29.97、1080p25、1080p24/23.98、1080psf24/23.98 (SDI) 1080i60/59.94、1080i50、720p60/59.94、720p50 (SDI-3GA&3GB)	
audio format	PCM	
HDMI protocol	HDMI 1.3; HDMI 1.4	
SDI specification	3G-SDI、HD-SDI、SD-SDI	
Transmission delay	70ms	
Video compression format	H.264	
Transmission distance	250m (2dbi Antenna, straight line without obstruction)	
Antenna method	2T2R External	
interface	DC-IN、SDI-IN、SDI-LOOP OUT、HDMI-IN、Type-C USB、NP-F970、SMA *2	DC-IN、SDI-OUT*2、HDMI-OUT、Type-C USB、NP-F970、SMA *2
button	1.POWER; 2.CH; 3. MODE	
Working power	1.DC (7V~36V) 2. Lithium battery (SONY NP-F970 or compatible series)	
Product Size	110*70*21 (Unit: mm, without battery buckle plate)	
Operating temperature	-10~45°C	
Storage temperature	-40 ~ 80 °C	
certified product	FCC、CE	
Installation interface	1/4 inch nut at the bottom	

Precautions

Installation height and separation distance

1. This product has a transmission distance of 250 meters under the same viewing distance, unobstructed, best installation method, and the same antenna polarity, and different code streams correspond to different distances; In the case of different polarities, the distance will be shortened
2. To avoid human obstruction, the transmitter is 1.5-2 meters above the ground and the receiver is 2 meters above the ground
3. When multiple sets of products work at the same time, please ensure that the distance between the transmitters is at least 1 meter, and the working frequency points between the products are staggered
4. When the receiver and other wireless products are placed and working, please separate the receiver from other wireless products by more than 2 meters.

Frequency setting

1. When using a single set of products, it is recommended to set the frequency point to CH5-CH9, because in many Wi-Fi coverage scenarios, the signal is concentrated at low and high frequencies, and the spectrum occupancy rate of the intermediate frequency is low
2. When two sets of the same product are used at the same time, the interval between each set of products is more than 1 meter, and the frequency point is set at more than 2 frequency points. For example, the first set of products is set at CH5, and the other set of products is set at CH7 or CH8 or CH9. , Which is set more than 2 frequency points apart
3. When multiple sets of the same product are used at the same time, each set of products is separated by more than 1 meter, and the frequency point is set at 2 frequency points, that is, the first set of products is set at CH5, the second set is set at CH7, and the third set is set On CH9, set up more than 2 frequency points

Environmental factors affecting wireless transmission

The following environment will affect the quality of wireless transmission, resulting in confusing image sound

(Picture pause, noise, noise, etc.):

- a) Walls, large metal plates, and appliances will affect the wireless transmission, try to avoid use in these environments;
- b) When used under crowded conditions, the transmitter can be raised as high as possible to more than 1.5--2 meters; the receiver should be raised as high as possible to more than 2-3 meters
- c) If there is a wireless product using 5GHZ nearby, it may also cause interference to wireless transmission, which can be solved by switching the frequency point. It is recommended to switch the product frequency point to CH5-CH9 in case of interference.
- d) Do not install the transmitter and receiver in a metal shelf, which will affect the wireless transmission. If it is unavoidable, you need to consider leading the antenna out

Cable connection

- a) Try to avoid plugging and unplugging the HDMI / SDI cable of the transmitter and receiver during normal use
- b) Please try to connect the transmitter and the video source through HDMI / SDI, and connect the receiver and the monitor before starting the transmitter and the receiver

Product and antenna installation

- a) When installing with the double-head screw that comes with this product, please use the tightening screw to lock the product, do not hold the product to rotate and tighten, to prevent the screw from being removed from the product
- b) When installing the transmitter and receiver, be sure to install the antenna first, and then turn on the power, otherwise it may cause damage to the product

- c) The antenna is in the right direction and the transmission effect is the best
- d) Before powering on, please make sure that the product antenna has been installed completely

Battery life

Take SONY NPF-970 battery as an example, SONY NPF-970 battery 58WH,

transmitter working life 5-6 hours

Note: The above values are affected by the specific use environment and products

Trouble shooting

1. The transmitter and receiver cannot establish a connection

- a) If the transmitter and receiver are connected to the antenna, the distance between the transmitter and receiver is at least 1 meter
- b) The transmitting frame is set to the camera head or handle at a height of 1.5-2 meters from the ground. The cameraman's body should try not to block the antenna's cylindrical surface. The receiving frame is set to be more than 2 meters from the ground and the antenna is positive. Yes, the transmission effect is the best

2. Mosaic and stutter appear on the screen

Please confirm that the following conditions have been fulfilled:

- a) When multiple sets of products work at the same time, please ensure that the distance between the products is at least 2 meters
- b) The transmitter is mounted to the camera head or handle at a height of 1.5-2 meters from the ground. The cameraman's body should try not to block the cylinder of the antenna. The receiving rack is set to be more than 2 meters from the ground, and the antenna is fan-shaped
- c) The frequency is set between CH5-CH9
- d) If multiple sets of products are used at the same time, please separate the multiple sets of products by more than 2 meters
- e) If there is a wireless guided call system on site, please separate the guided call host and the image transmission receiver by more than 2 meters

3. The output shows a black screen

- a) Please confirm whether there is OSD "connecting to transmitter" or "link connected to transmitter, please check video source" on the black screen. If the OSD displays "connecting to transmitter", please check according to the transmitter and receiver cannot establish a connection "; if the OSD displays "link connected to transmitter, please check video source ", please check the video source or connection of the transmitter Is there a problem with the SDI / HDMI cable
- b) If the receiver output black screen after switching the video source resolution, there is no video source output, please unplug the HDMI / SDI cable of the transmitter or receiver. If the HDMI / SDI cable cannot be recovered by plugging and unplugging, please power off and restart the transmitter and receiver

4. The receiver is connected to the guide station or monitor without image output

Please confirm whether the signal strength grid and VIDEO characters are displayed on the OLED screens of the transmitter and receiver. If there is no signal strength grid, it means that the network is not connected. Please check according to "The transmitter and receiver cannot be connected"; , If there is no VIDEO character, please check the video source and the connected SDI / HDMI cable; if the transmitter and receiver have both signal strength grid and VIDEO characters, the monitor is blank or not displayed, please check the receiver and monitor dock SDI / HDMI cable, change the resolution of the camera to 1080i 50 or 720P 50 for verification; at the same time, you can also connect the SDI / HDMI cable of the receiver to other monitors

verification

5. A green splash screen appears in the output image

The transmitter or receiver HDMI interface is not plugged in firmly, or the camera HDMI interface is not plugged in firmly, pluggable HDMI / SDI cable or replace HDMI / SDI cable.

FCC Warning

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.

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

NOTE: 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.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.