



Wireless Video Link

PRO 800 Plus

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.



User Manual

Model: LM-PRO800 Plus

Version: 1.0

Important Information

Please read this user manual carefully before you use this product. It contains all the necessary notes and Important things regarding operating the product. In accordance with the safety precautions and operating Instructions listed in this user manual, we assure the product's long-term lifetime. Following cases are not included for normal lifetime assurance:

- Repairing or modification have been executed by unauthorized personnel;
- Damages caused by accidents including but not limited to lightning, fire, exposed under rain and moisture
- Damages caused by using power adapter, whose output voltage is not in the allowed range required, which is shown on device label.
- The model label on the product has been modified or the warranty tag has been removed by unauthorized personnel.



Safety Precaution

	To reduce the risks of electric shock, do not remove or open the cover. No spare parts for user are included, please return to original factory for maintenance.
	Be careful of the scalding by the high temperature during the working of device, especially under hot weather.
	Please use the standard power adapter or non-standard power adapter with the same electrical parameters as that of standard one.



Danger: Be careful with electricity.

- Be sure that the device is powered off when connecting to other equipment (such as monitor or TV).
- Be sure that the power socket output voltage within the required range to prevent electric shock or fire, short circuit.
- Electrical plug used on the receivers and transmitters power cord are compliant with the rated voltage range.
- Do not place any heavy articles ON the power cord. To avoid being stepped on or pinched by heavy items, the power cords should not be located where people pass by frequently.
- Do no overload the power socket and its extension cord, otherwise could result in electric shock or fire.
- Disconnect the plug from the wall socket when lightning weather happens.
- Disconnect the plug from the wall socket if the product is unused for long time.



Warning

- Do not exposed to dripping or splashing. Do not place any container filled with liquid on the product (eg. vases).
- Do not block or stick anything on the air vent of product ; Do not remove the cover or put objects just like steel pins Into the gap of the air vent to avoid electric shock ,
- Please place the receiver / transmitter on flat and stable surface.
- Be sure that there is adequate ventilation distance between the receiver and TV, also away from direct sunlight or any source of heat. Blocking the air flow can damage the product.
- Do not expose the receiver or transmitter to rain or moisture to reduce the risk of electric shock or fire.
- We endure no responsibility for any damages or bad results caused by using non-standard adapters.

Special Notice

- Although the transmit signal has been encrypted, you still need to pay attention to the deliberate interception. It is possible that a third party intentionally intercepts the transmission signal since the product adopt wireless communication. Please do not use the product on confidential and very important communications or life-related communications. The main concern is that the content of wireless communication might be received by the third wireless devices deliberately.
 - For the serious path loss or interference by wireless signals(such as the following cases), the received audio and video signals maybe abnormal (such as pausing, mosaic, noise, etc).
- 1) Thick cement wall existence between transmit and receiver, which will cause serious signal loss for transmission.
 - 2) Quite close to the refrigerator, microwave ovens or other fitments with large metal surface.
 - 3) Places where crowded person and vehicles passing through.
- Although this product is designed and tested to comply with national electrical safety standard, there will be noise caused by the interference from other machines in rare cases. If this happens, please try to increase the distance from other machines.
 - The product is susceptible to interference from nearby strong 5GHz wireless signals from WLAN or other devices, which will cause less communication distance or worse picture effect.
 - Optimal distance between transmitter and receiver refers to that line of sight distance. Obstacles between transmitter and receiver may shorter the communication distance .
 - Do not install the transmitter and receiver within metal box, as it will shield the wireless signals.
 - It needs 15-20 seconds to boot the system before normal work.

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Foreword

- Please read this manual carefully before you use this product and retain it properly for future reference.
- If there is any question or difficulty about the operation of product, please feel free to contact us or the dealer.
- CVW reserves the authority to modify the instruction manuals.

Brief Introduction

As the widely use of live broadcasting , many problems about wiring appear, such as the high cost and short life time of the cable. Further, some other factors affect the user experience of live broadcast, such as the insufficient cable protection and the tread bycrowded people, which will lead to the poor cable transmission capability or even to accident.

PRO800 plus provides you more convenient and safer solution for live broadcasting. With the advantage of long distance transmission, plug-and-play usage, it can satisfy your various indoor and out door shooting requirements. With addition of its free cable wiring needed,it will bring much safer and more professional experience to you!

Features

- Transmission distance up to 800m(visual range), satisfying various requirements, such as film shooting, amusement live broadcast , wedding show and conference etc.;
- Support point to point intercom and Tally function, distance up to 300m(visual range);
- Support 1080P/60Hz,4:2:2,10 bit, uncompressed real time HD video transmission with zero latency;
- Support HDMI/HD-SDI/3G-SDI interfaces;
- Plug and Play, no complicated settings needed;
- Support frequency channel change, 1 TX to multiple RXs transmission;
- Support SDI Time Code (format ATC_VITC,ATC_LTC) transmission;
- Support SDI camera record function(Start/stop Flag) transmission;
- Comply with EDID 1.1, Support HDMI 1.3 ;
- AES128/256bit encryption;
- Intercom support auto frequency channel hopping when jammed.

Packing List

Please check the package inside to assure it contains the parts as below, if any parts missed, please contact the distributor or us.



* Some of the accessories are optional with extra cost, if you need to purchase, please contact the distributor or us.

* If some changes on the appearance, logo and accessories, subject to the actual received product.

Specification

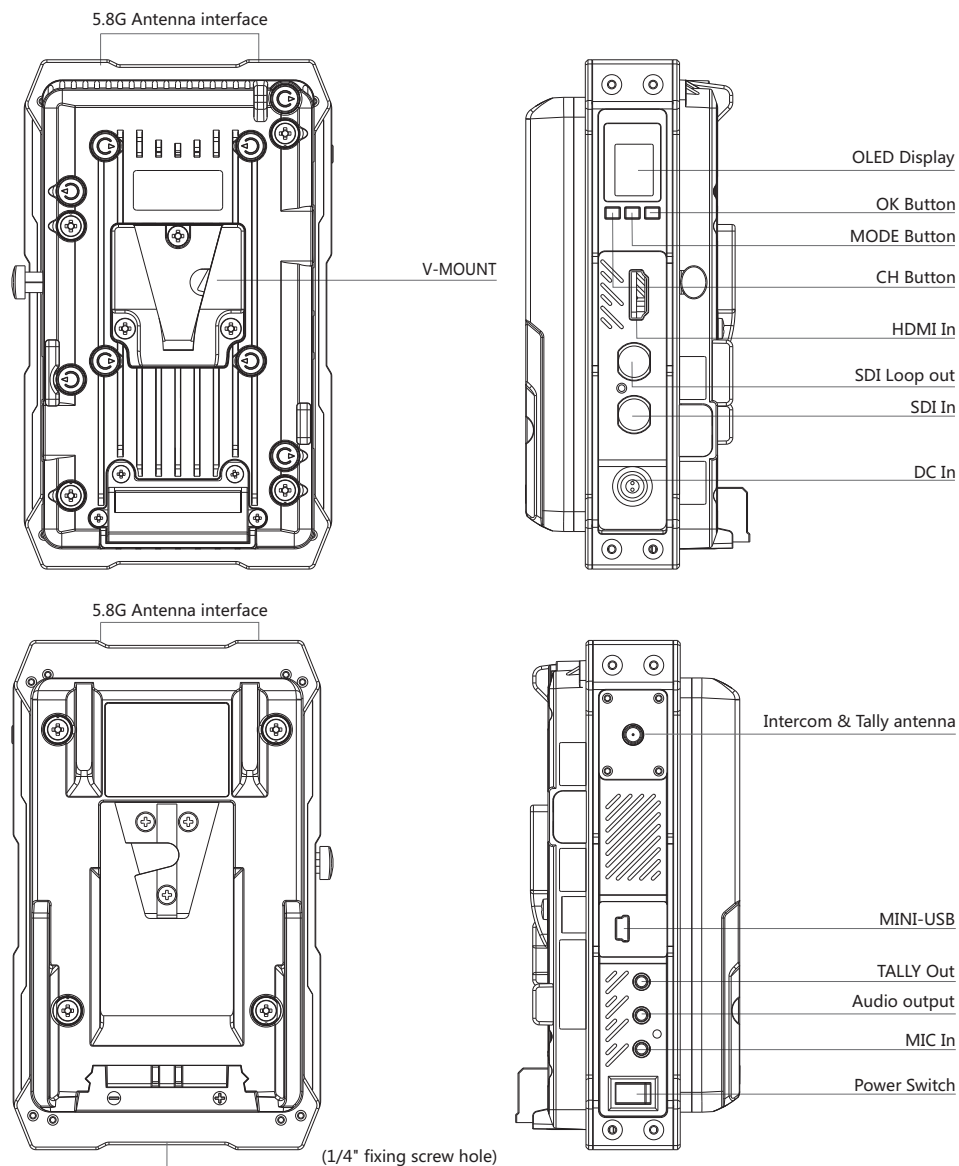
Item	Specification
Frequency	Image transmission : 5.1~5.9GHz Tally and intercom : 2400~2525MHz
Bandwidth	40MHz
Video Formats	1080P 23.98/24/25/30/50/60 1080psf 23.98/24/25 1080i 50/59.94/60 720P 50/59.94/60 576P 576i 480p 480i
Audio Formats	PCM
Time Code	ATC_VITC ATC_LTC
Transmission distance	Up to 800m; Tally&Intercom up to 300m
Transmitter	
Antenna	External antenna * 3
Transmission Power	20dBm
Interface	HDMI input, SDI input, SDI Loop out, Mini-USB, Lemo(0B/2pin) DC in, Antenna RPSMA, Power switch, Audio out, MIC in, Tally out
Mechanical Interface	V-mount, 1/4" fixing screw hole
OLED display	Frequency set up, Connecting state
Working Voltage	7V~36V
Power Consumption	12W
Size(mm)	153.2*93*67.7mm
Temperature	-10~50°C(Working) ; -40~80°C(Storage)
Receiver	
Antenna	External antenna * 6
Receiver Sensitivity	Image transmission : -70dBm, Tally and intercom : -85dBm
Interface	HDMI output, SDI output*2, Mini-USB, Lemo(0B/2pin)DC in, Antenna RPSMA, Power switch, Audio out, MIC in, Tally in
Mechanical Interface	V-mount, 1/4" fixing screw hole
OLED display	Frequency set up, Signal intensity, Connecting state
Working Voltage	7V~36V
Power Consumption	7~8W
Size(mm)	162.7*107.5*68.3mm
Temperature	-10~60°C(Working) ; -40~80°C(Storage)

* As the product's continuous improvement, the performance, design and specifications are subject to minus change without prior notice.

Mechanical Information

Transmitter interfaces

TX

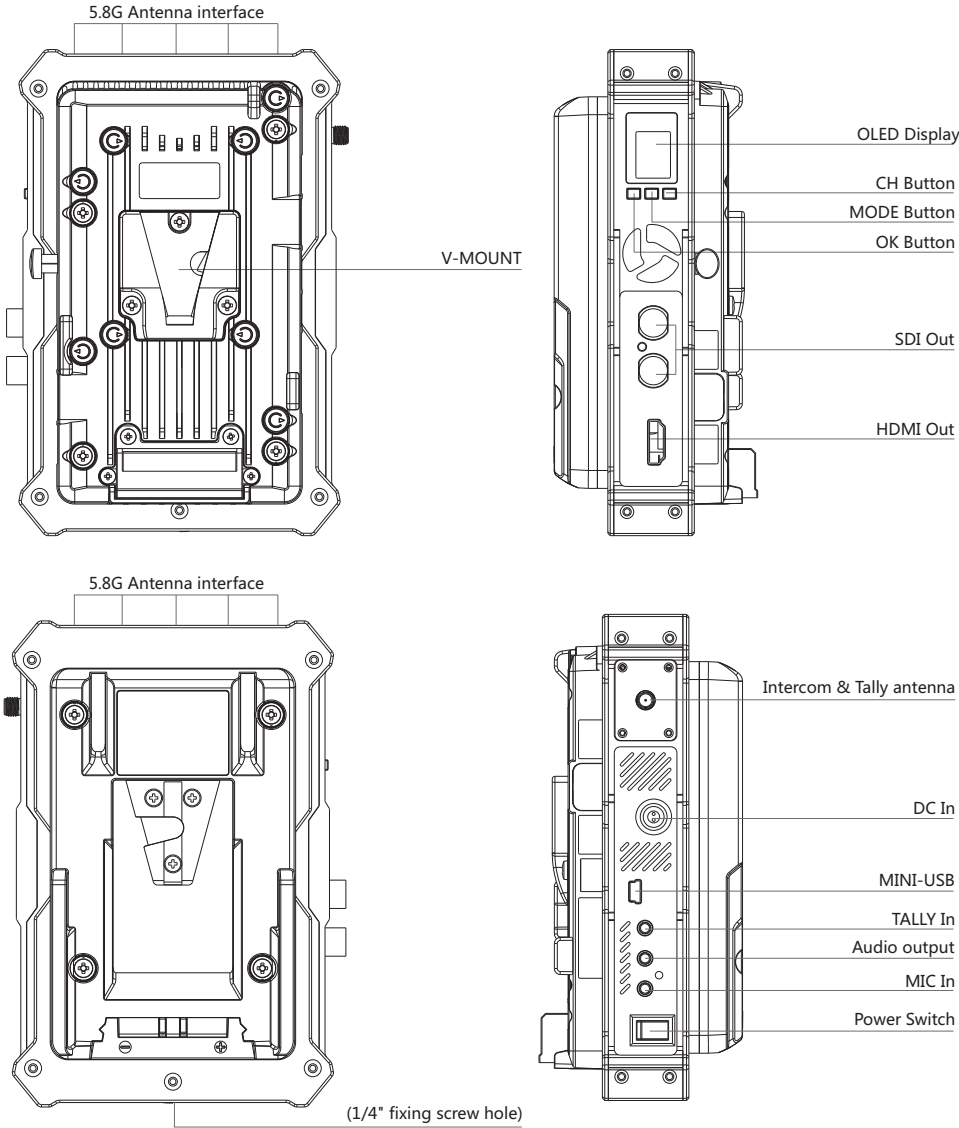


Interfaces Information

Item	Function
OLED Display	Display the frequency & status of video input
OK Button	Confirmation
MODE Button	Switch the mode of SDI audio
CH Button	Switch the working frequency channel
HDMI In	Connected to HD digital camera's HDMI output
SDI Loop out	Connected to HD digital monitor's 3G-SDI/HD-SDI input
SDI In	Connected to HD digital camera's 3G-SDI/HD-SDI output
DC In	DC in interface (LEMO) with 7V-36V Please confirm the DC power positive and negative pole before plug in.
5.8G antenna	Connected to 5.8G antenna with RPSMA interface
2.4G antenna	Connected to 2.4G antenna with RPSMA interface
MINI-USB	For software upgrade
TALLY Out	3.5mm Tally output, 5V 100mA max
Audio out	3.5mm audio output
MIC In	3.5mm Mic input
Power Switch	Power ON/OFF switch
V-MOUNT	Support installation for V-mount

Receiver interfaces

RX



Interfaces Information

Item	Function
OLED Display	Display the working frequency, status of video & network connection
OK Button	Confirmation
MODE Button	Switch the receiver' s LNA working mode
CH Button	Switch the working frequency
HDMI Out	Connected to HD digital monitor's HDMI output
SDI Out	Connected to HD digital monitor's 3G-SDI/HD-SDI input
DC In	DC in interface (LEMO) with 7V-36V Please confirm the DC power positive and negative pole before plug in.
5.8G antenna	Connected to 5.8G antenna with RPSMA interface
2.4G antenna	Connected to 2.4G antenna with RPSMA interface
MINI-USB	For software upgrade
TALLY in	3.5mm Tally input, 5V logic
Audio out	3.5mm audio output
MIC In	3.5mm Mic input
Power Switch	Power ON/OFF switch
V-MOUNT	Support installation for V-mount

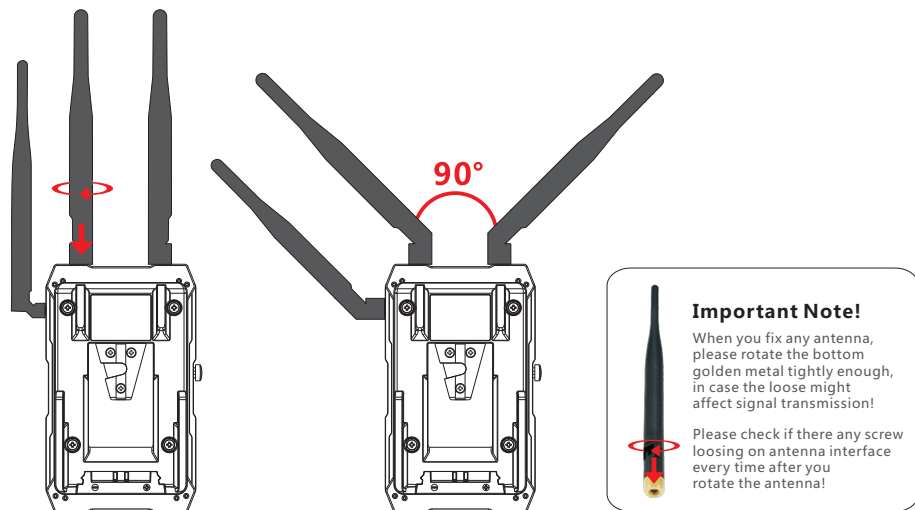
Installation instructions

TX

Installation steps for Transmitter

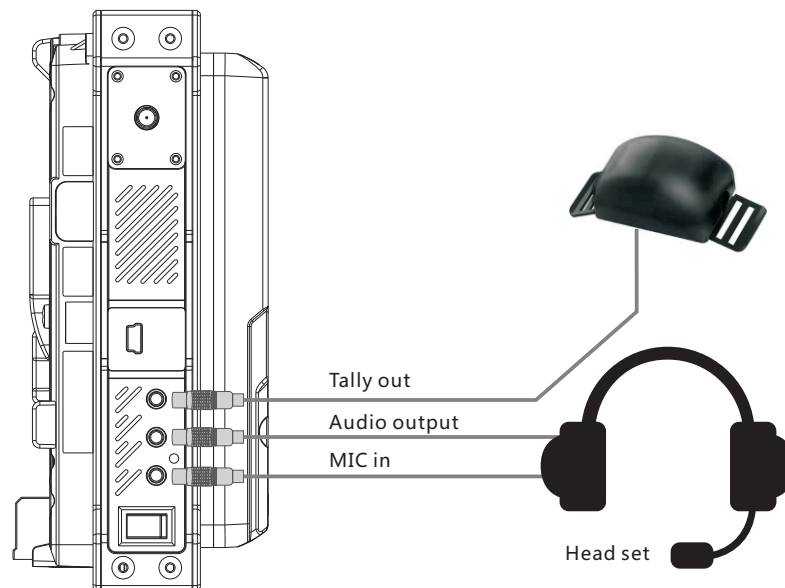
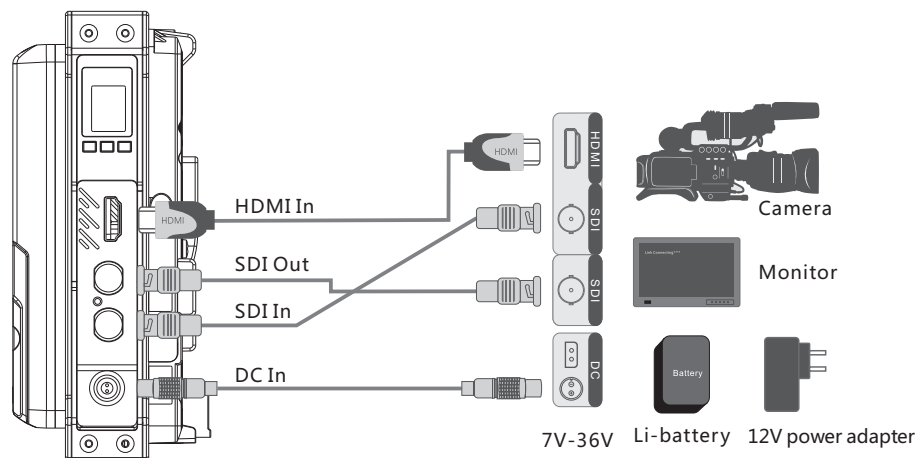
1. Please fix the antennas and make them be 90° angle, as picture below.

Notice: Before turn on the kit, please make sure all antennas have been fixed tightly, otherwise, there will be risk of damage to the internal RF amplifier. Such damage is not guaranteed.



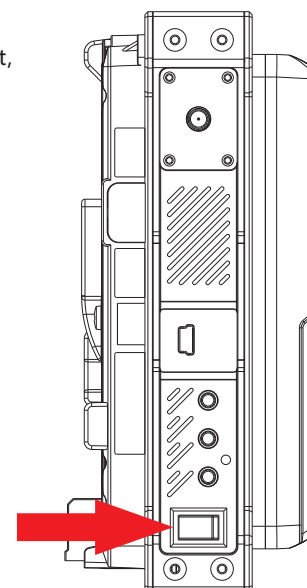
2. Please connect the corresponding power and video cables.

If you need to use the intercom or Tally, please connect the related mic and Headset.



3. Turn on the power switch, start the kit,

Power Switch: ON / OFF



4. Press the "CH" button to choose the frequency channel with the same as receiver, Press "OK" button to confirm. If video signal is normal and video cable connection well, LED screen displays "VIDEO".



5. Transmitter supports manually switching the SDI audio mode by long press button "MODE". When there's abnormal on SDI audio, you can try to press "MODE" button. This switching function is only effective to SDI input interface, which will not affect the HDMI input audio transmission.

Default SDI audio is mode 0



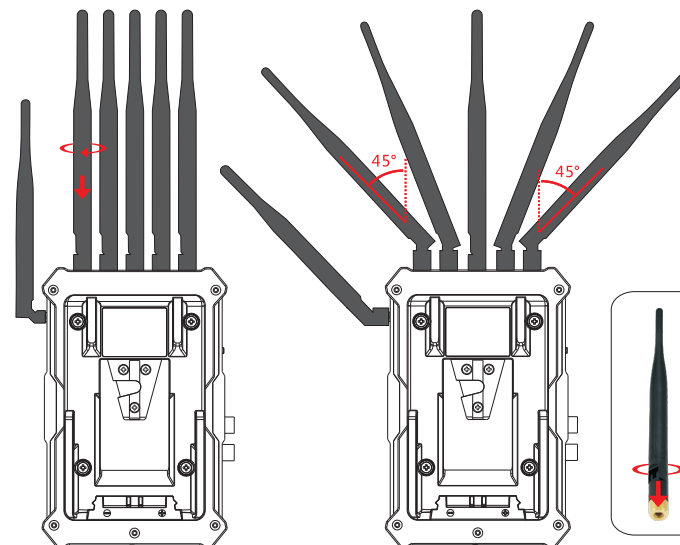
Long press button "MODE"
Switch SDI audio to mode 1



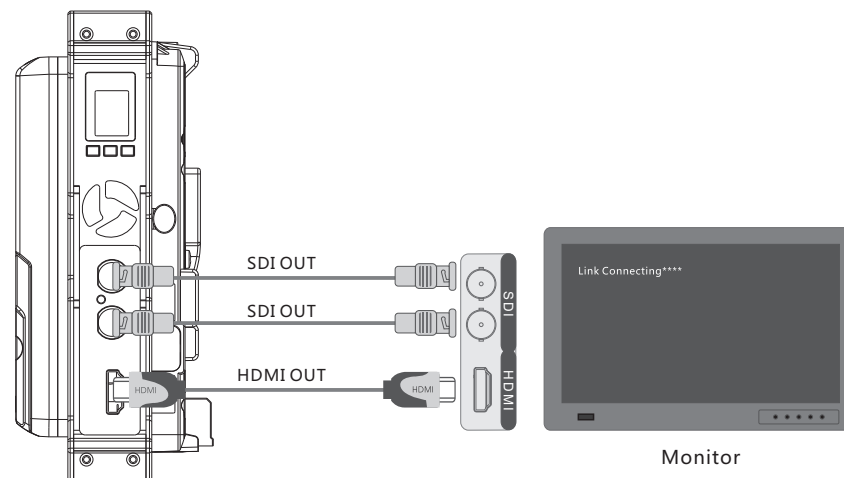
Installation steps for Receiver

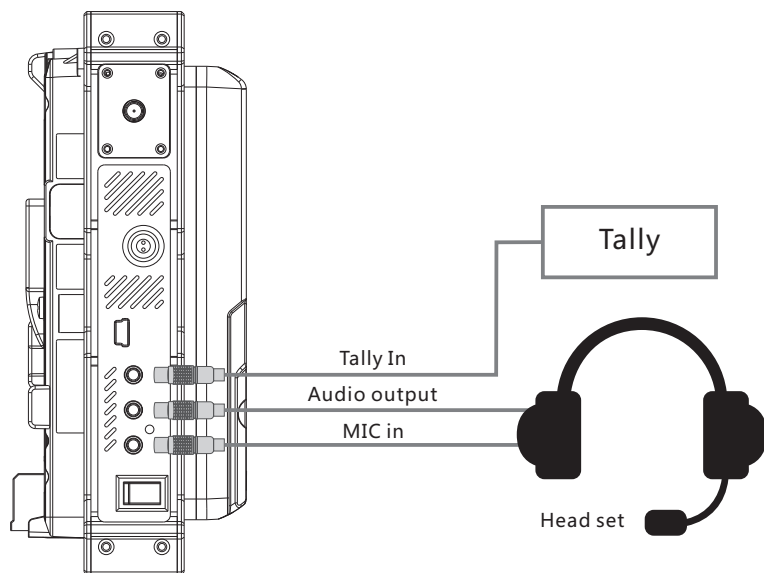
RX

1. Please fix the antennas as below picture shows.



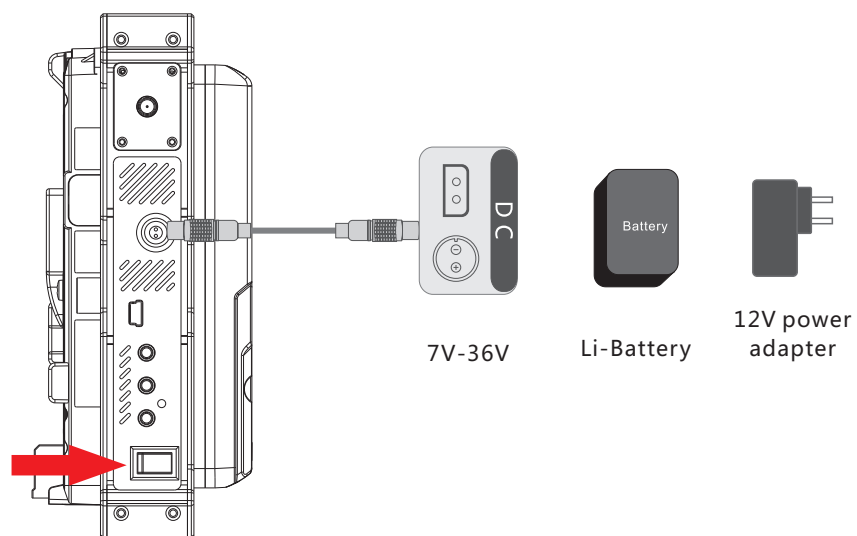
2. Please connect the corresponding HD video cable to monitor.





3. Please connect the corresponding power cable, and turn on power switch to start the kit.

Power Switch: ON / OFF



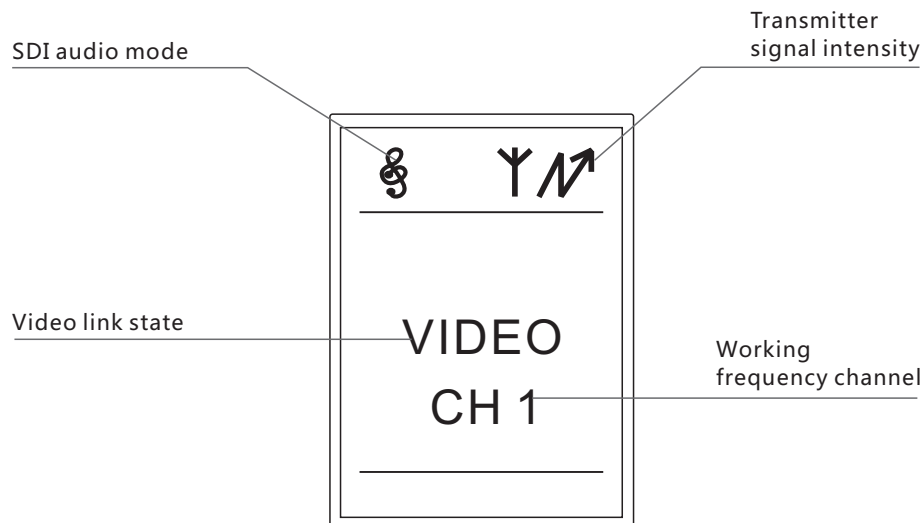
4. Press button "CH" to choose the corresponding frequency channel with the same as that of transmitter, and press button "OK" to confirm. When kit's network connect well OLED screen displays "LINKED". When kit received video signal successfully, OLED screen displays "VIDEO". At the same time, the monitor shows the image that camera's filming.



5. Long press button "MODE", to switch the internal LNA RF amplifier, "H" is for High-gain, "L" is for Low-gain.

OLED Screen description

Transmitter OLED State



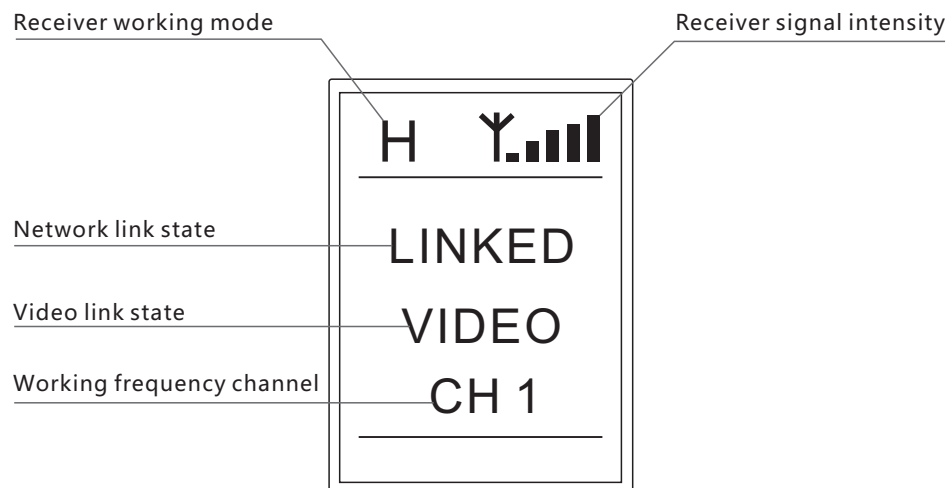
SDI audio mode: Model 0: displays nothing; Model 1: display melody logo;

Video link state: If no video source input, displays nothing;
If video source input detected, displays "VIDEO" ;

Working frequency channel: Current working frequency channel;

Transmitter signal intensity: Shows up after turn on kit, displays signal logo.

Receiver OLED State



Receiver LNA working mode:

"L" is low-gain mode, application for short distance transmission, good ability to anti-jamming;

"H" is high-gain mode, application for long distance transmission, normal ability to anti-jamming;

Network link status:

When connection failed, displays nothing; When connection normally; displays "LINKED" ;

Video link status:

If no video source input detected, displays nothing;

If video source input detected, displays "VIDEO" ;

Working frequency channel: Current working frequency channel;

Receiver RSSI: Displays current Received Signal Strength Indicator.

Support Full PSF resolution

Support Full PSF resolution

25PFS in = 25PFS out	23.98P in=23.98P out
29.97PSF=29.97PSF out	24P in=24P out
30PSF in = 30PSF out	25P in=25P out
	29.97P in=29.97P out
	30P in=30P out
50i in = 50i out	
59.94i in = 59.94i out	
60i in = 60i out	

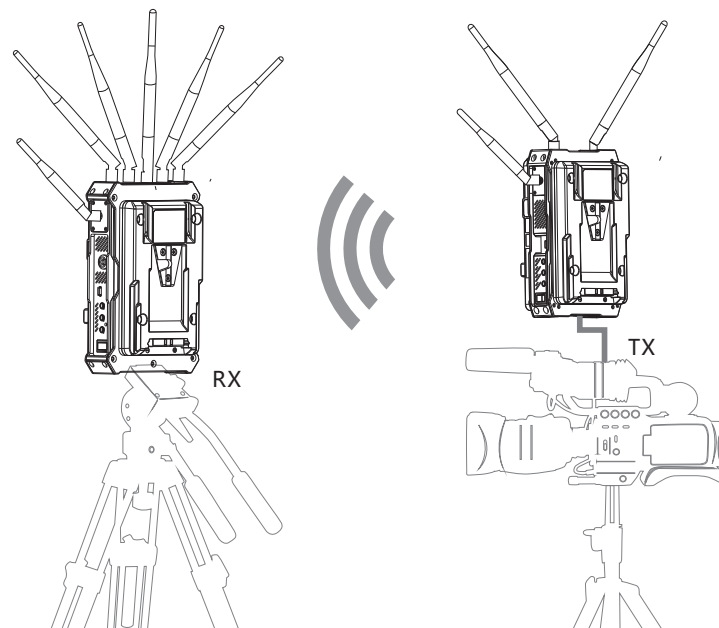
Transmission range introduced

Transmission range

- * Model Pro 800 Plus, transmission range up to 800m, in condition of distance line of sight, no obstacles, the most proper installation way and same antenna polarization.
- * If difference between antenna polarization, transmission range will be reduced rapidly into about 150 meters.
(Please install the kits above floor 1.5meters or more higher)

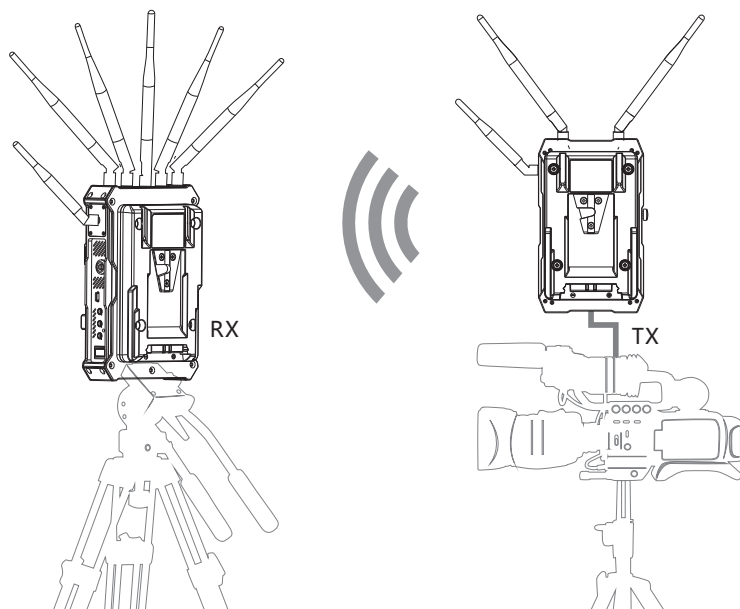
Optimal:

Receiver stands vertically; Antennas stand in a fan shape angle;
Transmitter stands vertically; Antennas stand in 90 degree angle;
The kits location FACE-TO-FACE, line of sight, transmission range up to 600 meters.

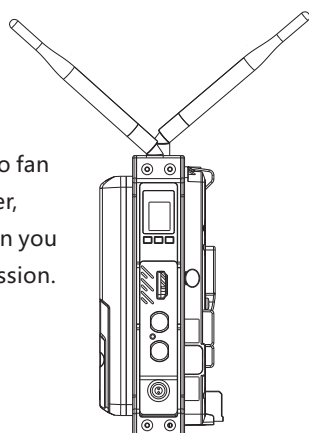


Medium

Receiver stands vertically; Antennas stand in a fan shape angle;
Transmitter stands vertically; Antennas stand in 90 degree angle;
The kit direction FACE-TO-SIDE, line of sight, transmission range 200 meters.



When the kit cannot be set face-to-face, please adjust the Transmitter two antennas to fan shape angle and face to receiver, as right side picture shows, then you will get the best signal transmission.



Trouble shooting

Troubles & Possible Reasons:		Solutions:
OSD Information on TV	Display "Link Connecting"	
	Transmitter is not electrified.	Power on transmitter.
	Transmitter or receiver is not placed erectly.	Place the TX or RX onto the base and replace them erectly.
	The transmitter and receiver are too far away.	Move the receiver closer to the transmitter.
	Several solid wall partition TX and RX.	Reduce the number of solid walls between TX and RX.
	There are too many obstacles between TX and RX.	Move the receiver closer to the transmitter.
	Haven't matched the code of TX and RX.	Rematch the code of transmitter and receiver.
	There is other transmitter which is under working condition near the receiver.	Power off other independent transmitter, place the receiver away from the other sources of interference.
	No Video Signal received	
	Transmitter and video source are not connected.	Connect the transmitter to video source by SDI/HDMI cable.
Image	The video source is turned OFF.	Power ON the video source.
	Video source were NOT switched to SDI/HDMI output.	Switch the Video source to SDI/HDMI output.
	Bad contact of cable of transmitter	Remove and then re-plug the cable of transmitter
	Abnormal working of transmitter	Reboot the transmitter.
	Problem with cable between TX and video source	Change the SDI/HDMI cable.
	Player NOT support the output resolution format.	Switch the output video resolution to other modes.
	The TV/Monitor NOT support HDCP authentication.	Replaced with HDCP-certified TV/Monitor.
	No signal input to Receiver or TV/Monitor	
	Receiver is turned OFF.	Power on receiver.
	Receiver and TV are not connected.	Connect receiver to TV/Monitor via SDI/HDMI cable.
	TV/Monitor NOT switched to SDI/HDMI input.	Switch TV/Monitor to SDI/HDMI input.
	Bad contact of the cable of receiver or TV/monitor	Remove then re-plug the SDI/HDMI cable.
	TV/Monitor turn into standby mode	Switch the TV/Monitor to normal operation mode.
	Abnormal working of receiver.	Reboot the receiver.
	No image appear on TV/Monitor	
	Bad contact of receiver or cable.	Re-plug the cable of the receiver or TV/Monitor
	Abnormal working of receiver	Reboot the receiver
	Receiver failure	Please contact your retailer
	Abnormal color on TV screen	
	Bad contact of cable of receiver or TV/monitor.	Unplug and then plug the HDMI cable of the receiver or TV.
	Bad contact of cable of transmitter or video source.	Unplug and then plug the HDMI cable of the TX and player.
	Abnormal working of transmitter or receiver	Reboot the transmitter and receiver.

Troubles & Possible Reasons:		Solutions:
Image	Abnormal color on TV screen	
	Bad contact of cable of receiver or TV/monitor.	Unplug and then plug the HDMI cable of the receiver or TV.
	Bad contact of cable of transmitter or video source.	Unplug and then plug the HDMI cable of the TX and player.
	Abnormal working of transmitter or receiver	Reboot the transmitter and receiver.
Audio	Image displayed, No audio	
	Video source mute	Turn on the audio of video source
	Volume too low	Turn up the audio of video source
	Audio format not supported	Switch the format of video source output
	Something wrong with transmitter/ receiver	Restart the transmission kit
	Intercom no audio output; Tally light goes off	
	Receiver and receiver not paired	Please find the corresponding labeled transmitter and receiver
	Headset fault	Change the headset
	Miss-plug the audio and Mic wire	Change and re-plug the wire
	Insert the wrong	Please make sure the Tally output is connect with the Transmitter (not Receiver)
	Tally interface Too far way between transmitter and receiver	Move the kit to be nearer enough with in 300 meters to transmit

*For more questions, please contact the distributor or us.

Appendix

As listed the director headset & Tally light model below, for your reference.

1. Director headset

Model: Takstar TS-628M

2. Tally light

Model: Data video TD-3

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, and
- (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.

