JM30

FHD Codec Module System

User Manual

V1.0 2020.09

FOXTECH

Disclaimer

- Please read this user manual carefully before use. Once used, it is regarded as approval and acceptance of the full contents of this statement.

- Please operate the product strictly according to the steps in the user manual. FOXTECH will not bear any legal responsibility for any equipment loss or personal safety injury caused by improper use, installation, modification and other reasons.

Installation Note

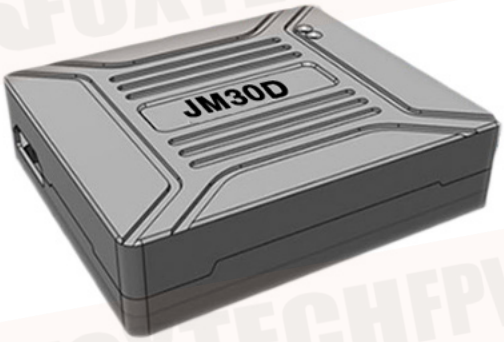
- Please ensure that the supply voltage of the equipment is within the rated voltage range of the equipment, otherwise the equipment will be damaged.

- Please ensure that the power cables are in correct order, otherwise the equipment will be damaged.

Contents

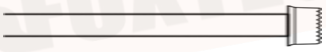
Packing List

JM30E Encoding Module



JM30D Decoding Module

2x Dual 7 Pin line
Power/Network Interface



1x 2Pin opening line
Connect device AV video interface

2x 3Pin opening line
Connect device serial port

2x 7Pin transfer wiring
Connect the network port of the module to the RJ45 standard network port

Overview

JM30 is a high-definition video coding and decoding system, including JM30E coding module and JM30D decoding module.JM30E can convert the video input from HDMI/SDI/AV interface into H.265/H.264 network video stream, which can be easily transmitted via wireless or wired network. JM30D can decode H.265/H.264 network video stream into HD video, which is output to the display through the HMDI interface.

The JM30E supports 1080 P60 video input and is compatible down. With the latest H.265 coding algorithm, the full HD video can be compressed to a very low bitrate, which is very convenient to be applied to the application scene of wireless real-time video transmission. The network video stream after JM05E coding can have many formats ——RTSP UDP TCP TS streams and so on. At the same time, it can customize private video stream output and support network transmission modes, such as anchor and broadcast.

The JM30D decoding module supports H.265/H.264 decoding and hardware acceleration. It also supports simultaneous decoding of 4 channels of 1080P HD video and split-screen display, which is output to the display through the HMDI interface. Because of the advanced low latency decoding algorithm, JM30D is very suitable for applications with high requirements of time-lag. JM30D can decode RTSP UDP TCP TS and other network video streams. You can customize the decoding of private network video streams, or the superimposition of OSD on high-definition videos.

JM30 has a web configuration page, and users can configure the module's IP address, codec parameters and other information, or upgrade firmware through the web page to, easy to use.

JM30 can be used with VDC-30 to meet the needs of multi-scene video applications in UAV industry. Users can obtain videos through Mission Planner QGC.

Main Characteristics

Video interface
- HDMI/SDI/AV

Coding format
- H.264/H.265

Working temperature
- 40℃ ~ +70℃

Resolution
-1080 P60(Downward Compatibility)

Video Stream Format
- RTSP UDP TCP TS streams

Power supply range
-DC 9~28 V 3S~6S battery

JM30 Interface Description

Front View

Left View

1.Power Indicator

The green light is always on during the start-up of the device.

2.Status Indicator

Indicator	Status
Green light goes off	Start-up
Green light flashes	No video input
Green light is always on	Normal HDMI/AV input

3.Power/Network Interface

Number	Identification	Explanation	Direction
1	V	+Vcc power input (9~28 V)	I
2	G	GND	I/O
3	G	GND	I/O
4	R-	RX-	I
5	R+	RX+	I
6	T-	TX-	O
7	T+	TX+	O

4.Datalink UART Interface

Number	Identification	Explanation	Direction
1	G	GND	I/O
2	R	RXD(Input to the device from the external serial port)	I
3	T	TXD(Output from device to external serial port)	O

5.CVBS Video Input Interface

Number	Identification	Explanation	Direction
1	G	GND	I/O
2	S	simulation video input	I

6.Type A HDMI Video Input Interface

7.Key Switch

Long press 10 seconds to restore factory settings.

Left View Right View

1.Power Indicator

The green light is always on during the start-up of the device.

2.Status Indicator

Indicator	Status
Green light goes off	Start-up
Green light flashes	No video stream received
Green light is always on	Receive the video stream and decoded the output

3.Power/Network Interface

Number	Identification	Explanation	Direction
1	V	+Vcc power input (9~28 V)	I
2	G	GND	I/O
3	G	GND	I/O
4	R-	RX-	I
5	R+	RX+	I
6	T-	TX-	O
7	T+	TX+	O

4.Datalink UART Interface

Number	Identification	Explanation	Direction
1	G	GND	I/O
2	R	RXD(Input to the device from the external serial port)	I
3	T	TXD(Output from device to external serial port)	O

5.CVBS Video Input Interface

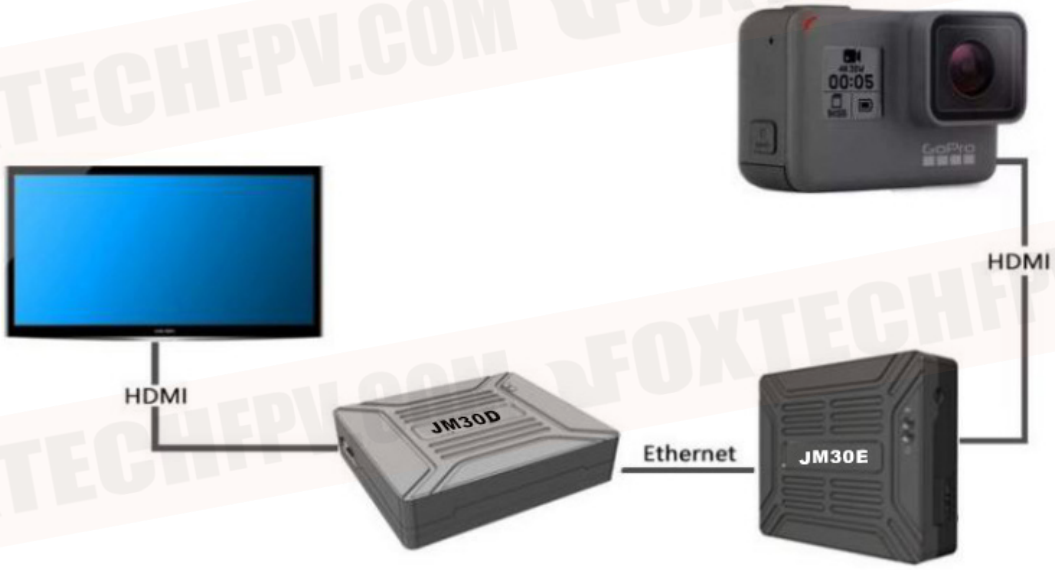
Number	Identification	Explanation	Direction
1	G	GND	I/O
2	S	simulation video output	O

6.Type A HDMI Video Input Interface

7.Key Switch
Long press 10 seconds to restore factory settings.

JM30 Quick Guide

JM30 Instruction

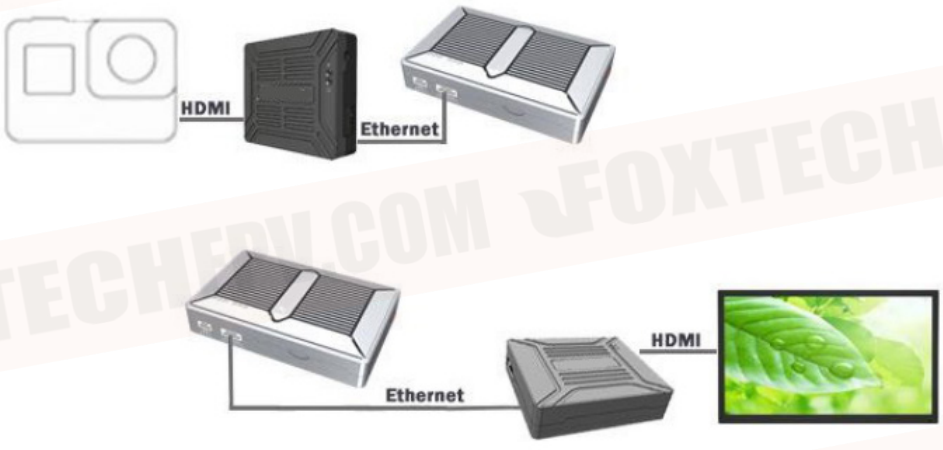


As shown in the figure, connect the HDMI port of the camera to the JM30E through an HDMI cable, and connect the HDMI port of the JM30D to the display. Connect JM30E and JM30D through the customized network cable in the accessory box.

After the system is powered on, the high-definition video output from the camera can be previewed in real time on the display screen.

JM30 & VDC-30 Transmission System

JM30 can be used together with VDC-30 transmission system to
achieve wireless remote transmission of high-definition video. The connection method is shown in the figure below.



Get the video stream of JM30E through Mission Planner

JM30E can compress and encode the input HDMI HD video into H.265/H.264 and convert it to a standard RTSP video stream. The camera as a video source. take PC as an example, and connect as shown in the figure above to introduce how to get the video stream of JM30E.

1.Set the PC IP address to the same IP segment as the JM30E.
Right-click the network icon in the task bar below, and open the "Network and Internet" settings. Change the adapter options, and right-click the Ethernet adapter corresponding to the receiver. Click Properties and select Internet Protocol Version 4 (TCP/IPv4). Set the IP address to "192.168.1.xxx" (xxx is the address value between 0 and 255, where 192.168.1.110 is the factory default IP address of the JM30E. If the user changes the IP address, please set the PC to the same IP segment).

2.Get the video stream by Mission Planner

Connect the device as shown above and after it works normally, open Mission Planner, right-click to pop up a shortcut menu, click Video and then click Set GStream Source, as follows:

Address bar input: rtspsrc location=rtsp://192.168.1.110:554/stream0 latency=0 ! decodebin ! videoconvert ! video/x-raw,format=BGRA ! appsink name=outsink

Note that address of "192.168.1.110" in the above is the default IP address of JM30E. If the user has changed it, please replace the IP address in the address bar.

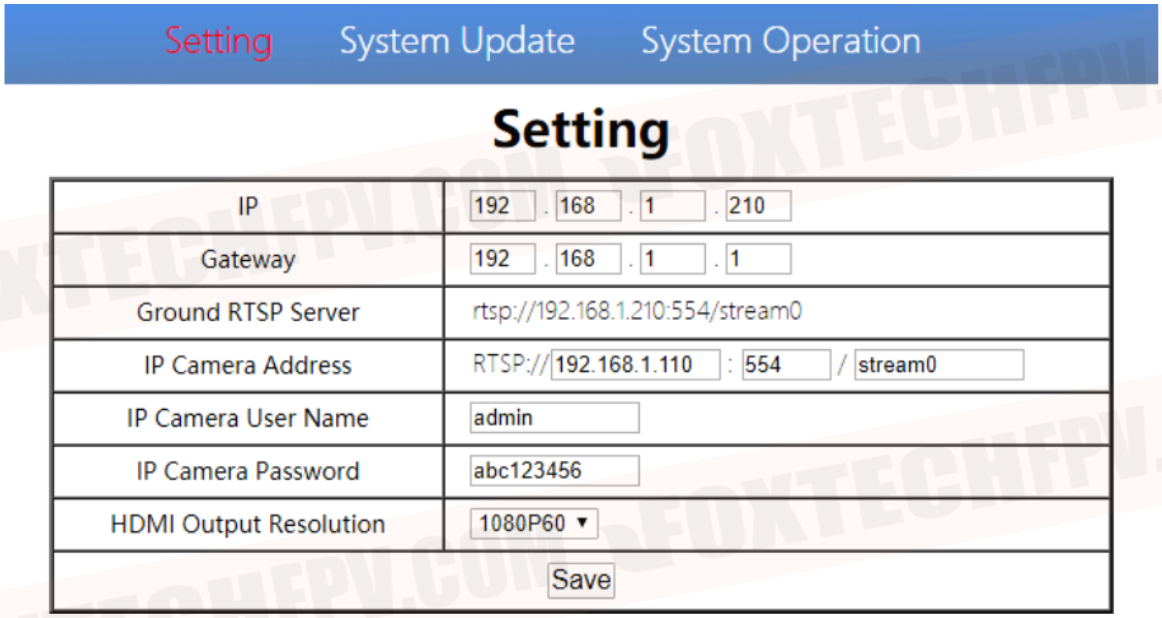
Get the video stream of JM30E through VLC

Refer to the steps in the previous chapter to connect JM30E to the PC and set the IP of the upper computer. Enter the pull-stream address of RTSP in the address input interface of the video playback software VLC, as shown in the figure below.

After entering the correct video stream URL, users can see the real time video in the playback area of the video playback software.

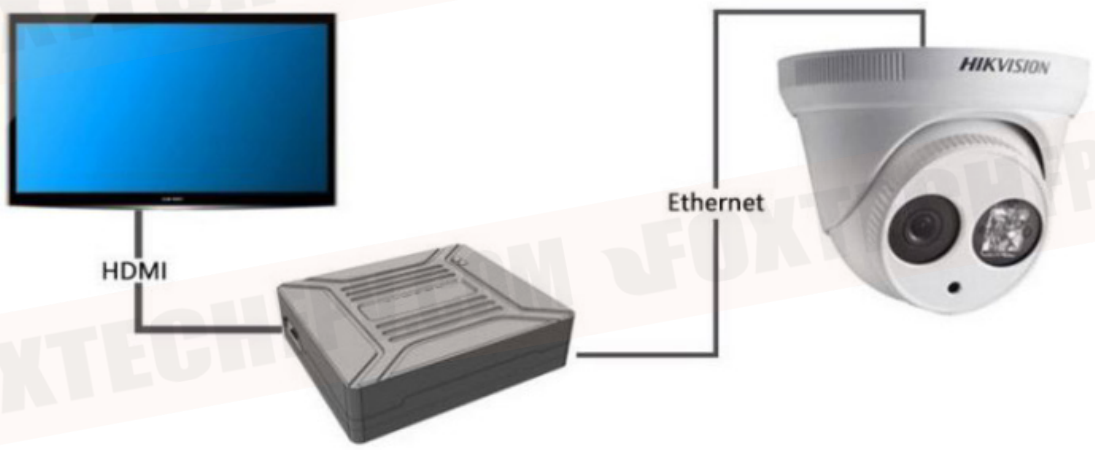
Decode the video stream of a camera by JM30D

1.Check IP address of the camera and RTSP pull-stream address
e.g. RTSP //192.168.1.110 554/stream0.
2. Connect the JM30D to the computer and log in to the JM30D web configuration interface. The default factory IP address is 192.168.1.210, as shown below.



On the Setting page, enter the RTSP pull-stream address of the camera into the "IP Camera Address" column. If the camera requires user name and password authentication, please fill in the "IP Camera User Name" and "IP Camera Password".

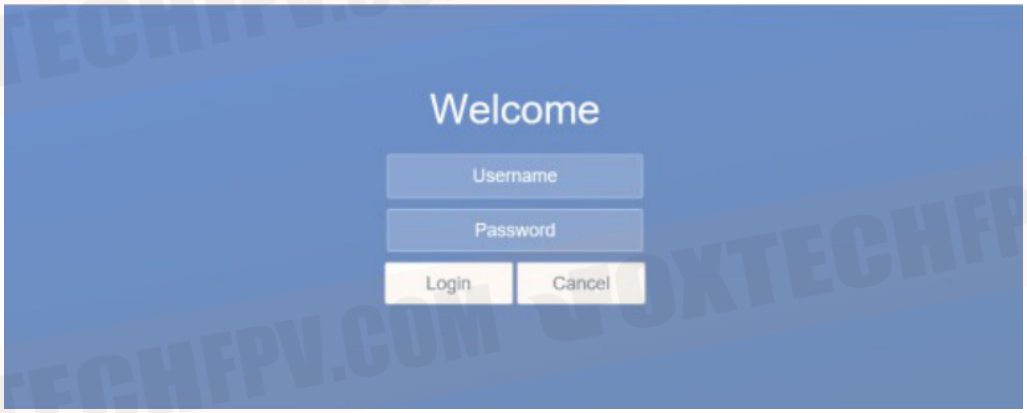
3.As shown in the figure below, connect the camera and JM30D through the network cable in the accessory box to show the real-time HD video of the camera on the monitor.



JM30 Web Configuration

When accessing the device's web page through a browser, please configure the IP address of the upper computer to the IP segment of 192.168.1.X. For example: users can set the computer's IP address as shown below:

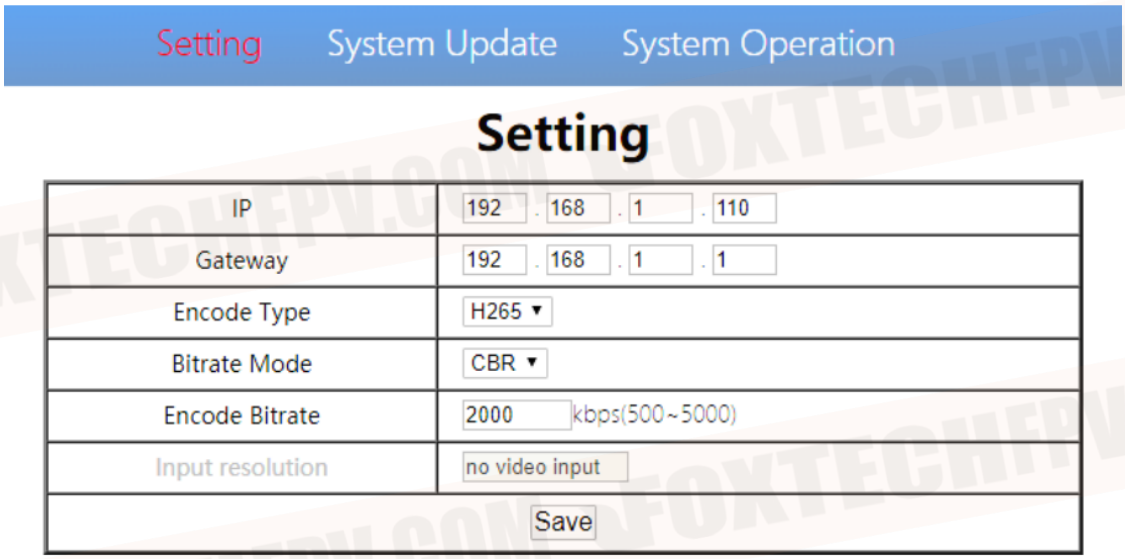
Login Interface



After entering the JM30E IP address into the browser, the login interface as shown above will be opened. The default user name is: admin, password is: 123456. After entering the user name and password, click on the Login to enter JM30E configuration interface.

Setting Interface

JM30E Setting

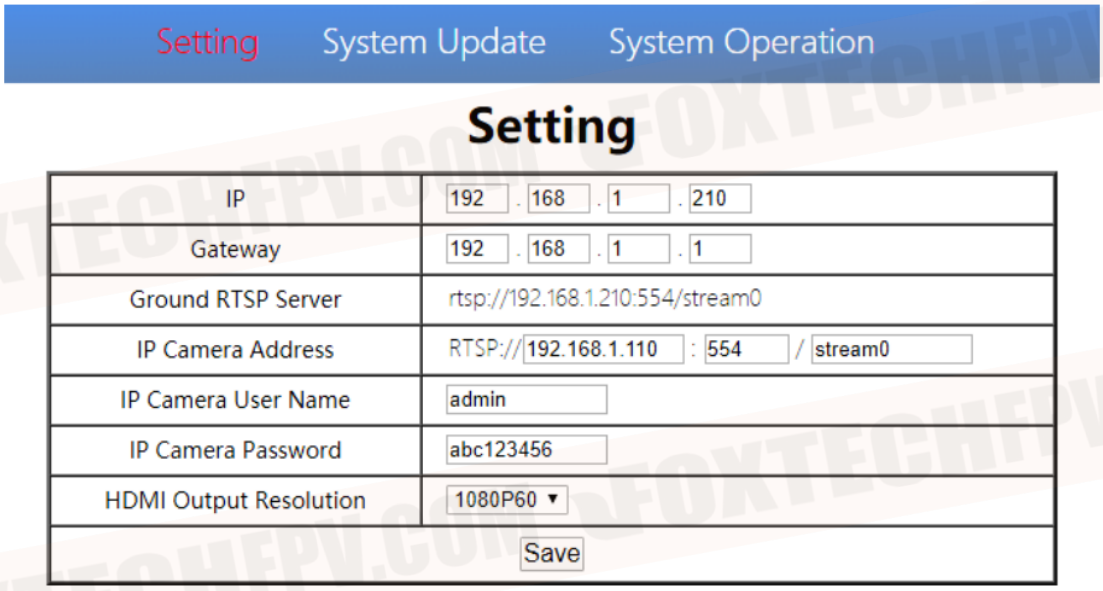


The basic setting interface of the JM30E can change the IP address of the device and some parameters of the HDMI input encoder. The value and note of the parameters are shown in the table below.

Parameter	Value	Note
IP	Default :192.168.1.110	Adjustable
Gateway	Default :192.168.1.1	Set according to current IP address
Encode Type	H264/H265	Default H265, Adjustable
Bitrate Mode	CBR/VBR	Default CBR, Adjustable
Encode Bitrate	500~5000 kbps	Default 2000, Adjustable
Input resolution	changeable according to the camera resolution	Query only
Save		Parameter Save

After the user changes the parameters and saves, please enter the system operation page to restart the device to make the parameters take effect. If you change the IP, please input the changed IP address in the browser and log in again after the device restarts.

JM30D Setting



The basic setting interface of the JM30D can change the IP address, gateway, RTSP pull-stream address and HDMI output resolution of the device. The value and note of the parameters are shown in the table below.

Parameter	Value	Note
Ground IP	Default :192.168.1.210	Adjustable
Gateway	Default :192.168.1.1	Set according to current IP address
Ground RTSP Server	rtsp：//192.168.1.110：554/ stream0/	JM30D RTSP server address, view only, not modifiable
IP Camera Address	Default: 192.168.1.110: cameras IP address 554: camera RTSP service port number stream0： camera RTSP service stream name	JM30E's default address, Adjustable
IP Camera User Name	String	Adjustable
IP Camera User Password	String	Adjustable
HDMI Output Resolution	1080P60/50/30/25/24 1080I60/50 720P60/50	Default 1080P60
Save		Parameter Save

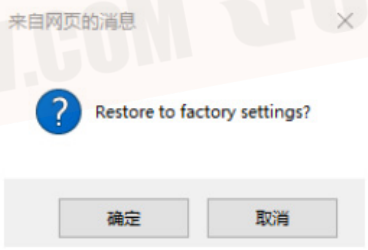
After the user changes the parameters and saves, please enter the system operation page to restart the device to make the parameters take effect. If you change the IP, please input the changed IP address in the browser and log in again after the device restarts.

System Upgrade Interface

The system update function is used to upgrade the firmware. Before upgrading, please download the required firmware to the upper computer from our official website. Click the "Browse" button, select the upgrade file, and then click Send. The system will send the upgrade file and prompt the upgrade progress on the web page. After the upgrade is completed, the system will automatically restart. Please log in to the web page again to check whether the firmware version number is updated.

System Operation Interface

In the system operation interface, users can click the "Restore" button to restore factory settings. After clicking the "Restore" button, a dialog box will pop up to prompt whether to "Restore to factory settings?", and click OK to restore the device parameters to the factory state.



"Reboot" button is used to restart the device. After clicking Reboot, please input the IP address in the browser address bar and re-login.

Specification

Category	Item	Specification
Appearance	Size	JM30E 57X 52X 16mm
		JM30D 65X 56X 17mm
	Weight	JM30E 52 g
		JM30D 62 g
	Indicator	1x Power indicator
		1x Status indicator
Video Performance	Resolution	1080P60 Downward Compatibility
	Coding	H.264/H.265, configurable
	Video Bitrate	500 kbps~5 Mbps, Adjustable
	Transport Protocol	RTSP、UDP、TCP、TS stream
	Codec delay	About 150 ms
Interface	Power/Network Interface	1, 7 Pin, input power (share a socket with network interface)
	HDMI	1x HD video interface
	AV	1x Analog video interface
	Serial port	1, TTL 3.3V level ,1 start bit ,8 data bit ,1 stop bit, no parity
	Key switch	1, restore factory setup
Power supply range	9~28 V	
Power consumption	JM30E ≤ 2W	
	JM30D ≤ 1.5W	
Environmental adaptation	Working temperature	-40℃～+70℃
	Storage temperature	-40℃～+85℃
	Humidity	5~95%, non-condensing

FAQ

1.The power indicator is not on after power on.

- Check whether the power cable is damaged, whether the connection order is correct, and confirm that the power interface is connected correctly;
- Check the power supply range, whether it is within the power supply voltage range indicated by the equipment;
- If the above steps are completed, the power indicator of the device is still not on, please contact after-sales technical support.

2.The video stream of JM30E can not be obtained through computer.

- Check whether the computer is in the same IP segment as JM30E;
- Check whether the HDMI cable connected to the camera and JM30E is intact and plugged in;
- Check whether the RTSP address of the computer application software is correct;
- If the above steps are completed, the indicator is still not on, please contact after-sales technical support.

3.JM30D cannot decode the video stream of the camera, and cannot output it to the display through the HDMI interface.

- Check whether the computer and JM30D are in the same IP segment, and whether the camera, JM30D, and computer have IP conflicts. After checking, please make sure the communication between JM30D, camera and the computer is normal;
- Check whether the HDMI cable between JM30D and the display is well connected;
- Please check whether the user name and password are enabled on the camera. If yes, please configure the user name and password to the web configuration interface of JM30D. You can also try to cancel the user name and password of the camera;
- If the above steps are completed, the fault has not been eliminated, please contact after-sales technical support.

This content is subject to change.

Download the latest version from

https://https://www.foxtechfpv.com/jm30-fhd-codec-module-system.html

For everyday updates, please follow

Foxtech Facebook page: https://www.facebook.com/foxtechhobby

YouTube Channel: https://www.youtube.com/user/foxtechonline/featured?view_as=subscriber

