

INSIGHT(领悟) 1080P FULL HD Digital Video Downlink Transmission Unit

Thank you for purchasing the Insight 1080P Full HD Unit. Experience true HD digital video transmission in a compact easy to use package.

Users must comply with local radio transmission laws and regulations when using this product. In using this product, you hereby agree to this disclaimer and signify that you have understood all points completely. When assembling this product, do so carefully. The manufacturer and seller assume no liability for any damage or injury to person or property arising from the use of this product.

Operating Instructions:

Fully charge the receiver unit. Connect a 5.0v Micro USB charger to the receiver unit. The "CHG" LED will emit green indicating the unit is charging. When the receiver unit is done charging the LED will turn RED.

When powering on the receiver unit, the system will take approximately 35 seconds to boot up. Open the Wi-Fi setting on your device and search for the Wi-Fi SSID as IN-XXXXX. Enter the default password 12345678 to link to your device. You will need to download the dedicated APP to modify the password or Wi-Fi channel, please refer to the channels used by local laws and regulations.

Verify your cameras HDMI output resolution and select the corresponding video definition on the Insight APP. After our testing, although rated at 1080P recording, we found that most cameras only output 720P through HDMI because of the camera's own firmware or a hardware limitation. Confirm actual HDMI output resolution of the camera and select the proper rating on the APP for proper video feed.

We recommend 3 APPs to be used with our product. The APPS can be downloaded on <http://www.argusfpv.com/downloads.html>. **INSIGHT** is a flight viewer software which extends more than 6 PWM outputs so you can control some PWM devices (Gimbal, Servo). **Tower-Insight** is a ground control software that can display the parameters from the aircraft and allows you to a flight path for the aircraft. **Insight-Switch** is a dedicate software that allows you to modify the Wi-Fi SSID, Wi-Fi password, and Wi-Fi channel.

For updates and support information and related video tutorials, please contact your Insight dealer or refer to the Argus official website <http://www.ArgusFPV.com> to get the latest updates.

In order to get a good signal, pay attention to the orientation of the antenna. Please keep the receiver side antenna pointed at the aircraft to ensure the best signal, please ensure the transmitter side antenna element (brass) is pointed vertically upward or downward.

Features:

•5G Full HD digital transmission

- Video input support up to 1920x1080@60fps, Video output support up to 1920x1080@30fps
- Use of 5G radio technology. TX power 100mw (CE certification and FCC certification) ;
- Ground control with 5db standard omni-directional antenna, transmission distance over 2km
- Ground control with the 14db custom directional antenna, transmission distance over 4km

•Input and Output

- HDMI Input
- 5G WI-FI FHD Output: Android devices can be used as a monitor after connected the APP.

• Interference resistance

- Downlink MIMO multiple antenna technology with OFDM modulation and advanced algorithms to improve stability of data bandwidth in complex environments and improved overall dynamic performance.
- Near real-time downlink signal system dynamically selects the optimum channel (out of 24 channels)for transmission.
- supporting up to 24 devices working at the same time;

•Low latency

- System maximum time delay 80ms;

•OSD function

- Built in OSD function, you can achieve the information superposition function with the APM, PIX, PIXA without the use of an external OSD.

•Flight control system

- Without any restrictions for APM, PIX, PIXA or others. Insight itself has built-in data transmission

• Multi-mode and information security

- Ground side can link over two devices.
- The encrypted video transmission can only be received by the authorized ground module.

•Battery and charge

- The ground module has a built-in 1300mAh large capacity battery; the device can work continuously for 2 hours, and can be charged by a power bank.
- Air system: input voltage 5-18V (Optional voltage input is 7-28V)

Product specification

Video input: HDMI

Support format (HDMI) : 720P 50fps; 720P 60fps; 1080I 50fps; 1080I 60fps; 1080P 25fps; 1080P 30fps; 1080P 50fps; 1080P 60fps

RF parameters: 5GHz, FCC certification

Interface (Ground system) : LED; power switch; charge input; USB 2.0

Interface (Air system) : LED; HDMI input; PWM output; TTL transmission;

Material: Aluminum alloy

Power (Ground system) : DC 5v; Built-in battery; Watts: 6W

Power (Air system) : DC 5~18V; Watts: 8W

Size (Ground system) : 69x49x16(mm)

Size (Air system) : 67x37x20(mm)

Weight (Ground system) : 100g

Weight (Air system) : 70g

Transmission distance (outdoor) : with the 5db omni-directional standard antenna, transmission distance over 1 km, with the 14db custom directional antenna, transmission distance over 4km

Output delay: 80ms/0.08s

Band frequency: 5.1GHz - 5.8GHz

Modulation mode: MIMO - OFDM

Video input: Micro HDMI

Compatible input video format: HDMI all format, up to 1920x1080P@60fps

Output format: 640x480p@30/60fps, 1280x720p@30/60fps, 1920x1080p@30fps

Compression: HEVC High definition television broadcasting

Channels: 24 channels (Automatic frequency hopping, anti-jamming)

Supported devices: Phone, Tablet, PC

Supported system: Android, Windows

Data interface: UART data transmission interface

PWM control interface: 4 PWM control output, you can control the gimbals and other external devices.

Communication encryption: 256bit encryption

Temperature: -10°C - 60°C

Certification: FCC Certification

Included in the box:

2x SMA interface 5DB Paddle type antenna

2x MMCX interface 5DB Circular tube antenna

1x Micro HDMI to Mico HDMI

1x APM flight control cable

1x PIX flight control cable

1x Other DIY DUPOND control cable

1x Gimbal PWM cable

1x Power module

1x Transmitter

1x Receiver

Items	Parameter
Transmission distance (outdoor)	with the 5db omni-directional antenna, transmission distance over 1 km, with the 14db directional antenna, transmission distance over 5km
Output delay	70-100ms
Band frequency	5.1GHz-5.8GHz
Modulation mode	OFDM
Video input	Micro HDMI
Compatible input video format	up to 1920x1080P @ 60fps
Output format	352x288@30fps, 720x576@30fps, 1280x720p@30/60fps, 1920x1080p @ 30fps
Compression	HEVC High definition television broadcasting
Channels	24 channels (Automatic frequency hopping, anti-jamming)
Support devices	Phone, Pad, PC (need to support 5G WIFI)
Support system	Android
Data interface	UART data transmission interface
PWM control interface	4 PWM control output, you can control the gimbal and other external devices.
Communication encryption	256bit encryption
Temperature	-10°C-60°C
Certification	FCC Certification

Air system

Item	Parameter
Size	62mm*32mm*23mm
Weight	58g
Interface	5V DC input
Battery	Mico HDMI*1 /UART*1/PWM*4

Receiver system

Item	Parameter
Size	68mm*48mm*15mm
Weight	100g
Interface	Micro USB 5v
Battery	Ground system built-in 1300mAh large capacity battery, the device can work continuously for 2 hours.

INSIGHT(领悟)全高清数字图传 1080P FULL HD

1. 系统开机时间约 **35** 秒, 开机完成后, 请搜索 **IN-XXXXX** 开头 **SSID** 并链接, 初始链接密码 **12345678**, 需要修改密码或者信道需要请下载专用的 **APP** 进行信道设置。自行设置信道请查阅当地法规所允许的信道使用。
2. 经过我们的测试, 我们发现当前市场上大多数相机只能输出 **720P**, 可能跟相机的固件或硬件的限制有关系。你可以尝试其他非 **1080p** 的分辨率, 图像加载需要等待几秒钟。
3. 我们的产品提供 **3** 个应用程序。**Insight** 是观察手软件并扩展超过 **6** 个 **PWM** 输出, 可以让你控制 **PWM** 设备 (云台、伺服电机)。**Tower-Insight** 是地面站软件, 可以显示飞机的参数和规划的飞行路径并更新到飞机。**Insight-Switch** 是设备专属的软件, 可以让你修改 **WiFi SSID**、**WiFi 密码**、**WiFi 信道**。
4. 更新与支援, 视频指导, 请联系相关经销商, 或关注阿戈斯官方网站 <http://www.ArgusFPV.com> 以获得最新的 **APP** 更新。
5. 为获得良好的信号效果请注意天线的摆放方式, 接收端天线最好效果是垂直向上。发射端天线请确保震子部分 (铜管) 垂直向上或者向下。

一、特性:

·5G 全高清数字传输

- 数字视频传输,输入最高可支持 **1920*1080@60fps**, 输出最高达 **1920*1080@30fps**;
- 使用 **5G** 射频技术, 发射功率 **100mw**(符合 **FCC** 认证标准);
- 地面端搭配 **5dbi** 的全向天线 (标配), 实测有效传输距离达 **1.5km** ;
- 地面端搭配 **16dbi** 的定向天线 (选购), 实测有效传输距离高达 **5km** ;

·视频输入、输出格式

- **HDMI** 输入;
- **5G WI-FI** 全高清视频输出: **Android** 手机、平板电脑通过 **app** 连接后可做显示器使用;

·抗干扰

- 上行/下行链路采用 **MIMO** 多天线技术和 **OFDM** 调制方式, 配合先进的算法, 有效提高系统数据带宽和复杂环境的稳定性, 提高系统的动态性能;
- 下行链路实时监测各信道干扰状态, 动态选择最优信道工作 (最多 **24** 个传输通道);
- 同时同地可支持多达 **24** 设备同时工作;

·低延时

- 系统延时 **80ms**;

注: 以上延时为使用电脑 **HDMI** 信号输出, 对比电脑屏幕与手机 **APP** 之间时间差得出延迟数据, 各种相机由于使用软硬件的区别在高清信号输出所产生的信号延时会出现比较大的不同。所以请尽可能选择低延迟摄影设备。

·OSD 功能

- 配合 **pix apm pixw** 使用时无需外置 **OSD,APP** 即可实现信息叠加功能;
- 配合飞行控制器使用
- 无任何限制配合 **pix apm pixw APP**，产品 **insight** 本身有内置数传。
- 多从机模式与信息安全
- 地面端可以链接多部手机或者 **PAD**
- 数据加密传输，仅经过对频授权的地面端可收到视频数据，保证信息安全；

·电池与充电

- 地面端内置 **1300mAh** 容量电池，设备可连续工作 **2** 小时.可以使用充电宝的设备连接持续使用。
- 天空端输入电压 **5V**（可选宽电压输入模块 **7-28V**）

二、规格参数

视频输入：**HDMI**

三、支持的制式(HDMI):

全格式支持最大支持 **1920*1080 60FPS**

射频参数：**5GHz**，符合 **FCC** 认证标准

接口（地面端）：**LED** 指示灯；电源开关；充电接口；**USB 2.0** ；

四、接口（天空端）：**HDMI** 输入；**PWM** 输出；**TTL** 透传；

材质：**铝合金**

电源（地面端）：**DC** 电源输入 **5v**；内置锂电池；功耗：**1.5-3W**

电源（天空端）：**DC 电源输入 5V； 功耗： 3-5W**

尺寸（地面端）：**68*48*15(mm)**

尺寸（天空端）：**62*32*23(mm)**

重量（地面端）：**100g**

重量（天空端）：**58g**

指标	参数
输出距离（户外）	标配天线 1500 米 高增益定向天线 5KM
输出延迟	70-100ms
频段	5.1GHz-5.8GHz
调制方式	OFDM
输入视频接口	Micro HDMI
兼容输入视频格式	HDMI 全格式 最高 1920*1080P@60
输出格式	352*288@30,720*576@30, 1280*720p@30@60,1920*1080p@30
压缩率	HEVC 3A 高清电视广播级
通讯频道数量	24 频道
支持设备	手机，平板，电脑(需求 WIFI 支持 802.11n/ac)
支持系统	Android
数据接口	UART 数据透明传输接口
控制信号输出接口	4 组 PWM 信号输出,云台以及其他外接设备控制
通讯加密	256 位加密
工作温度	-10℃-60℃
认证标准	FCC 标准

接收端

指标	参数
尺寸	68mm*48mm*15mm
重量	100g
接口	Micro usb 5v 充电接口
电池	内置 1300mAh 聚合物锂离子电池(持续工作 2.5 小时)

视频发射端

尺寸	62mm*32mm*23mm
重量	58g
电源	5V DC 输入
接口	Micro hdmi*1 /UART*1/PWM*4

附件清单

SMA 接口 5DB 桨型天线 X2

MMCX 接口 5DB 园管天线 X2

MICRO HDMI TO MICRO HDMI 视频线 X1

APM 飞控链接线 X1

PIX 飞控链接线 X1

其他改版飞控杜邦口连接线 X1

云台 PWM 信号输出线 X1

电源模块 X1

发射机 X1

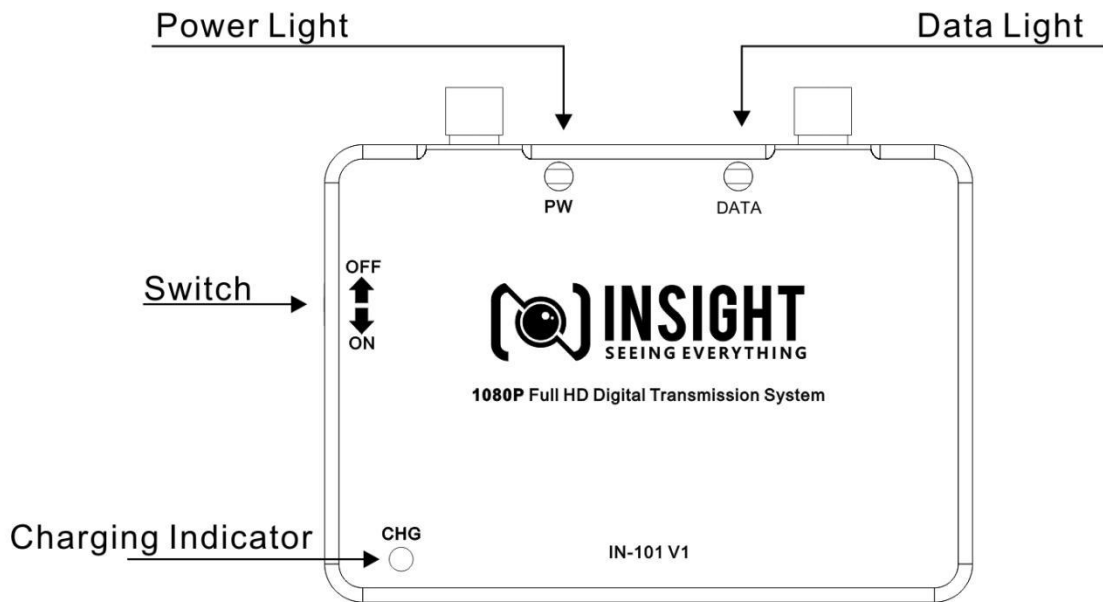
接收机 X1



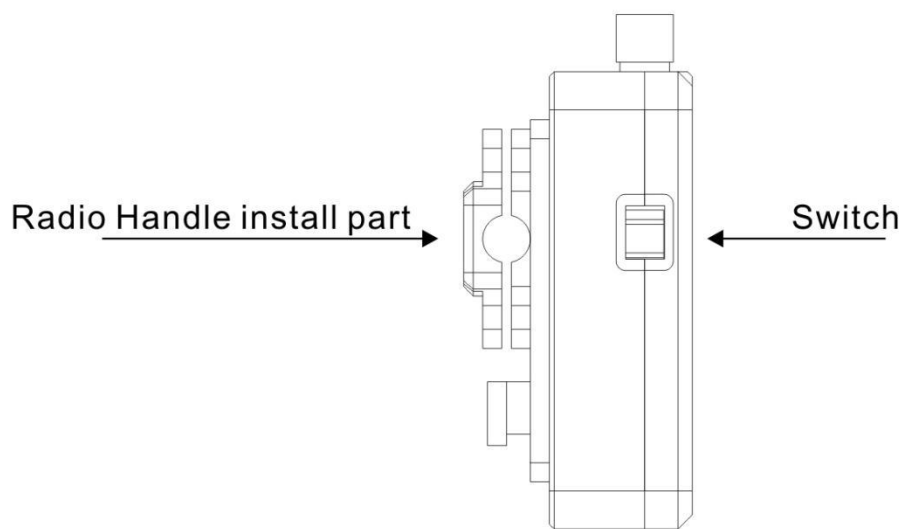
1080P Full HD Digital Transmission System

IN-101 V1

1: Ground System



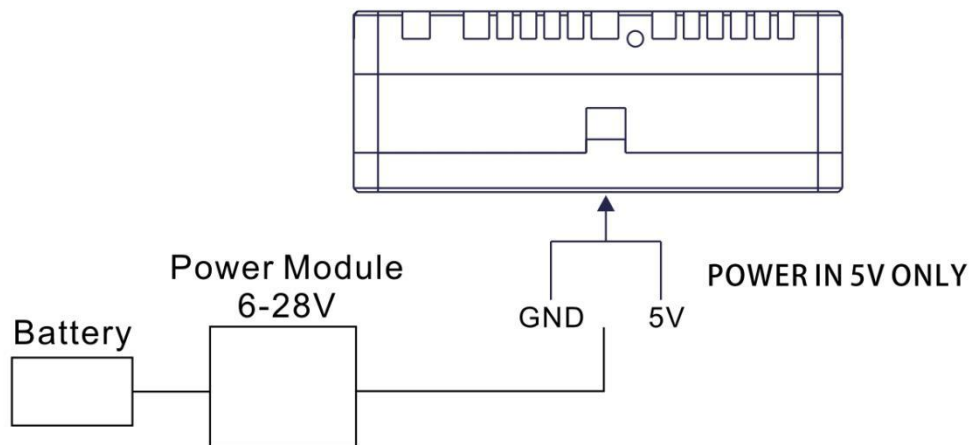
Front View



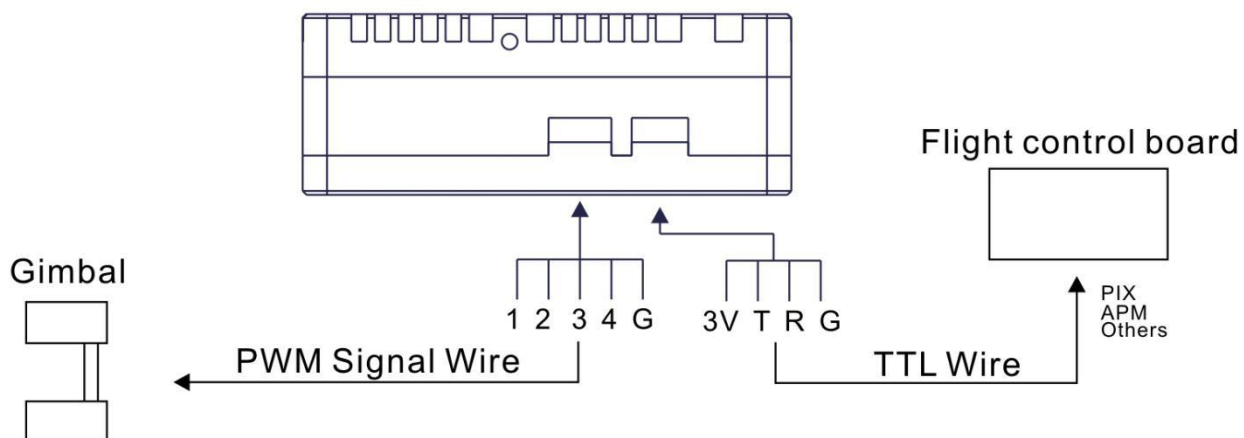
Side View

2: Air system

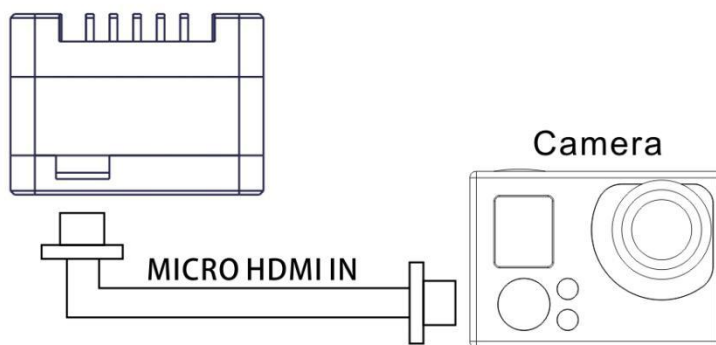
Left Side View



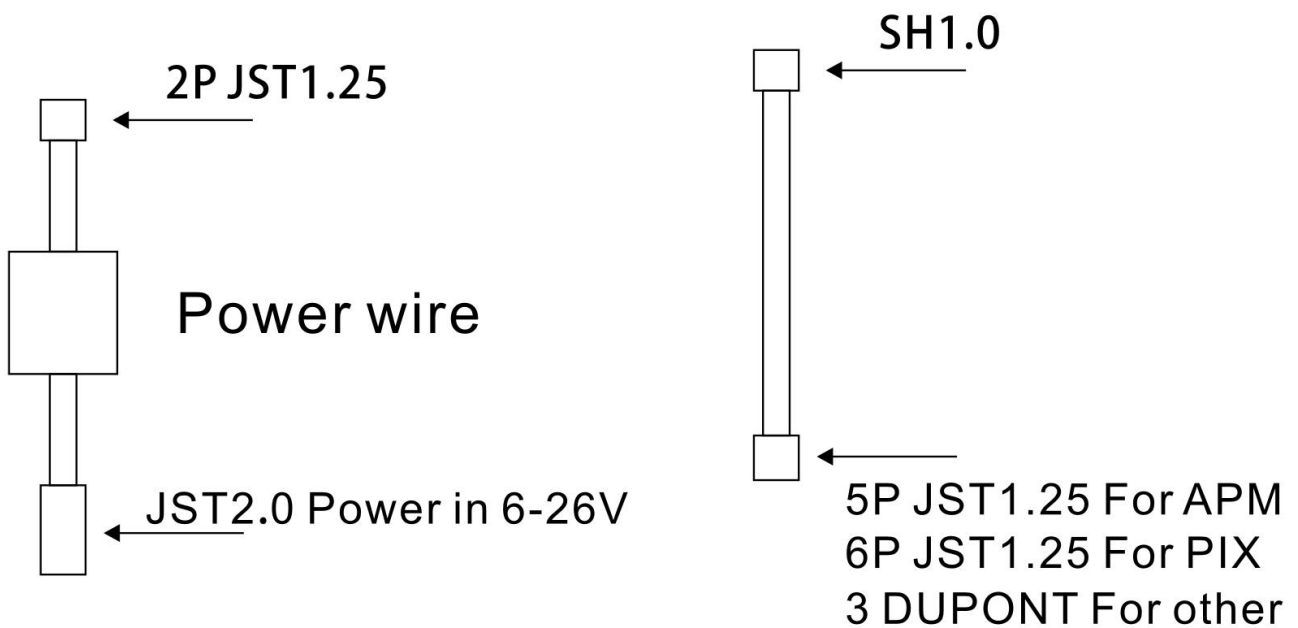
Right Side View



Back Side View



3: Wires



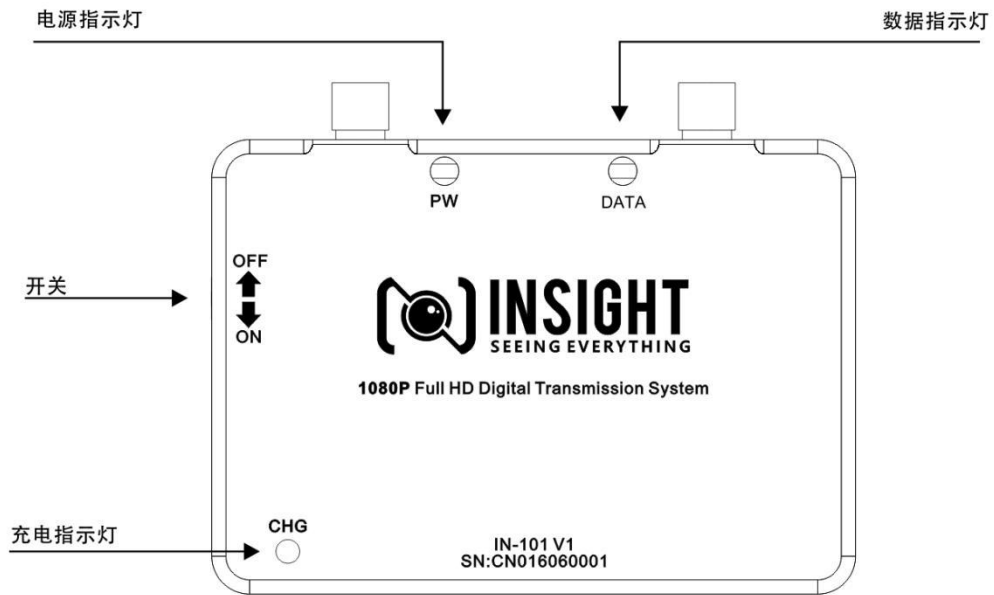
- 2x SMA interface 5DB Paddle type antenna
- 2x MMCX interface 5DB Circular tube antenna
- 1x Micro HDMI to Micro HDMI
- 1x APM flight control cable
- 1x PIX flight control cable
- 1x Other DIY DUPOND control cable
- 1x Gimbal PWM cable



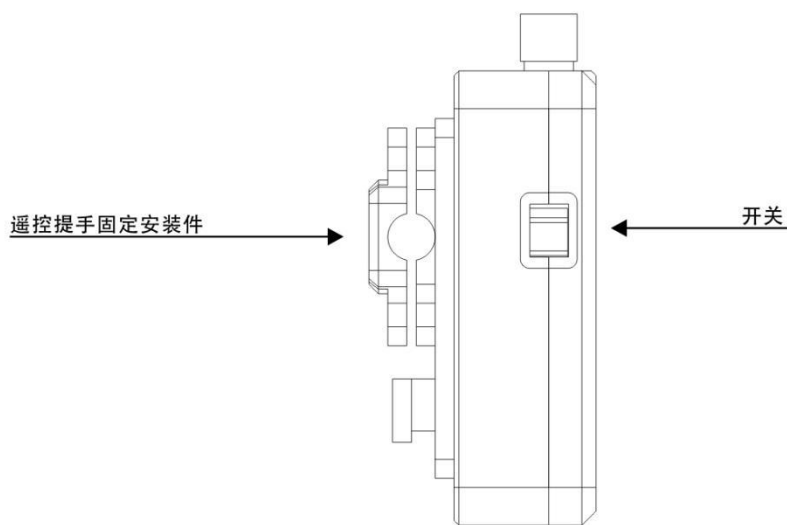
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1080P FULL HD**

IN-101 V1

1：地面端说明



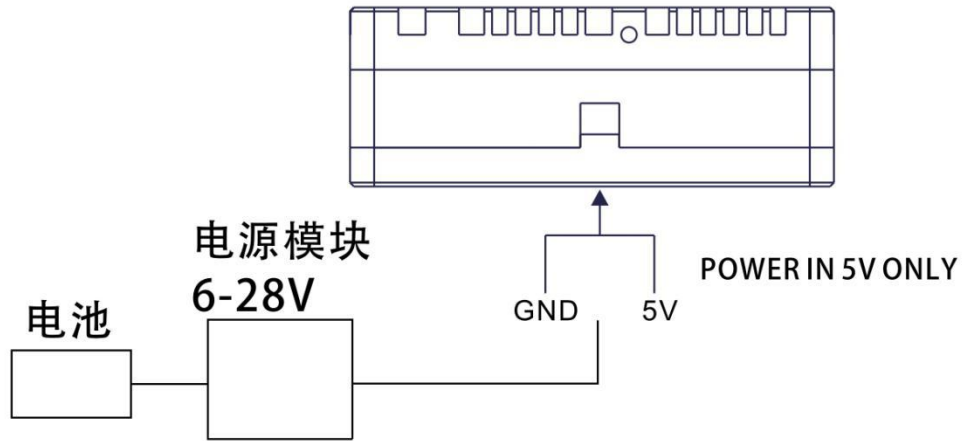
地面端正视示意图



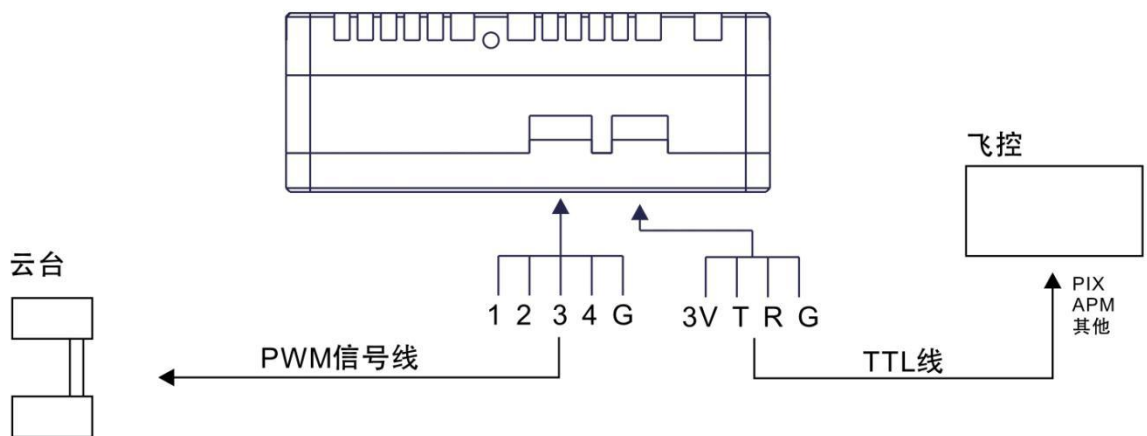
地面端侧视示意图

2：天空端说明

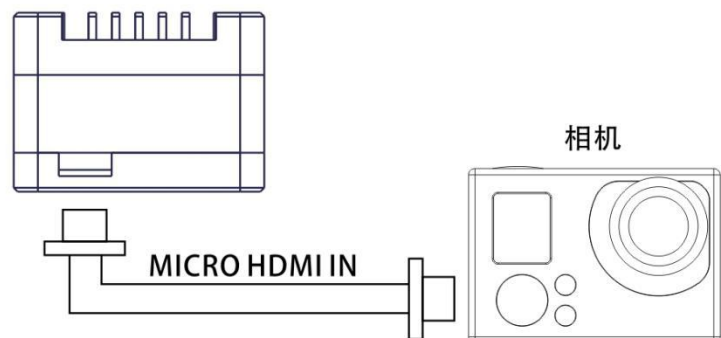
天空端左侧视示意图



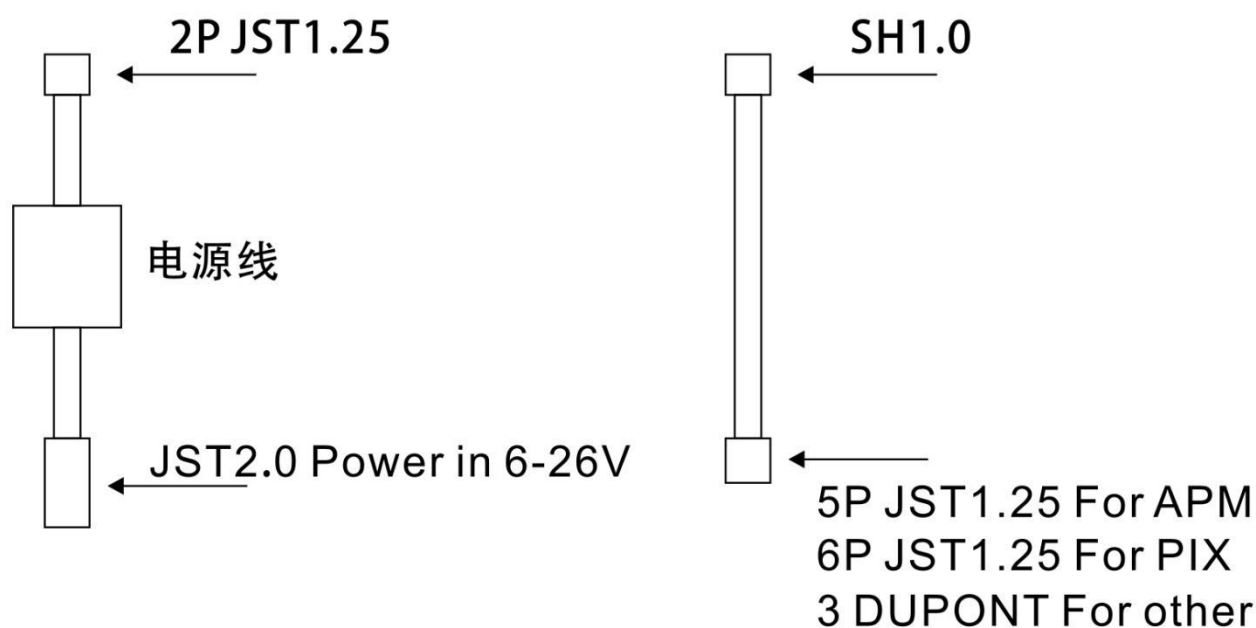
天空端右侧视示意图



天空端后视示意图



3:线材说明



2 X 接收天线SMA

2 X 发射天线MMCX

1 X APM数据线5

1 X PIX数据线6

1 X 3P杜邦数据线

1 X 5P杜邦PWM信号线

1 X HDMI micro to micro