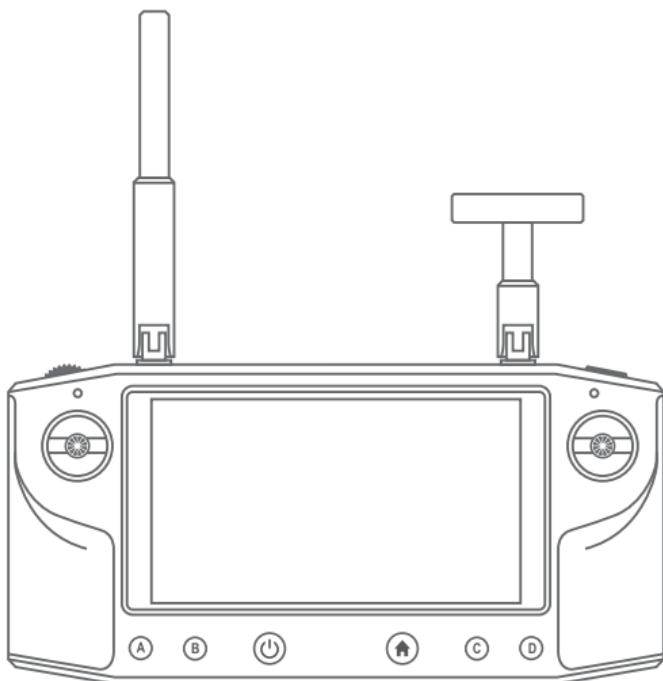


TeleLink

HD Video Transmission System
链路屏幕一体遥控器
产品说明书



欢迎使用CUAV TeleLink链路屏幕一体遥控器!

使用前请认真阅读本说明书!

本说明仅介绍简单连接方法, 详细教程请访问CUAV官方文档

<http://doc.cuav.net>

本产品兼容使用APM和PX4固件的无人机。

产品概述

CUAV TeleLink遥控器是CUAV与小米生态公司合作打造的一款无人机图数传输系统, 代表了当前开源无人机界的先进水平。

TeleLink硬件上采用片上系统SoC设计, 在单个芯片上集成了基于LTE技术无线的通讯系统、图像编解码处理系统和其他支撑系统子模块。利用全链路深度优化技术, 带来远距离、低延迟, 低功耗的更好体验。

在软件上, TeleLink运行安卓系统, 内置QGC地面站, 同时兼容APM及PX4开源飞控。最低70ms的延迟, 实现了对飞行信息及高清图像的流畅观测和控制。

产品参数

性能参数

处理器

澎湃 S1

4AP Cortex A53@2.2GHz

4AP Cortex A53@1.4GHz

4 核 Mali- T860 GPU

A7 + DSP SDR

系统版本

安卓7.0

图传距离

FCC 20km CE / SRRC 12km

图传延迟

最低 70ms (不包括输入源造成的延迟)

图传图像

720p@30fps 1080p@30/60fps

传输频段

2.4GHz ISM

接受灵敏度

-99dBm@20MHz BW

干扰恢复时间

<1s

功耗

平均不超过 4W (* 仅图传工作, 屏幕亮度中等, WiFi关闭, GPS关闭)

存储

LPDDR3 2GB,eMMC 5.0 8GB

尺寸及重量

天空端	78.5×30×15mm, 48g, 不含天线
遥控器	217×106.5×31mm, 516g

遥控器外观及功能

外壳	塑胶
屏幕	600nit峰值亮度, 5.46寸大小, 1080P分辨率
音频	1600万色彩种类
内置麦克风	内置扬声器 × 1
按键背光	X 2
通信支持	有
指示灯	蓝牙 / WiFi / GPS (WIFI仅支持5G频段)
接口	顶部三色灯 × 2 (左, 右)
天线	MicroUSB × 1, TFlash×1(支持最大 64G 扩展)
内置天线	定向 (4.5dBi) × 1, 全向 (2dBi) × 1 (均可拆卸)
外置	WiFi 天线, GPS 天线
电源	GPS天线接口
充电	4950mAh 锂电池
	Micro USB接口, 5V 2A 电流充电

图传天空端外观与接口

外壳	航空铝合金
接口数量	2 x Micro HDMI , 1 x 2 pin (POWER) , 1 x 3 pin (UART) , 1 x 4 pin(S.bus) , 1 x Micro USB 插口, 1 x 按键孔, 2 x MMCX 天线插口
Micro HDMI	外部相机视频信号的输入
Micro USB	充电与调试升级, 支持OTG模式
Pair/Reset按键	对频及状态重置
MMCX天线插口	图传信号与地面端通信
指示灯	指示对频和图传状态

配件清单

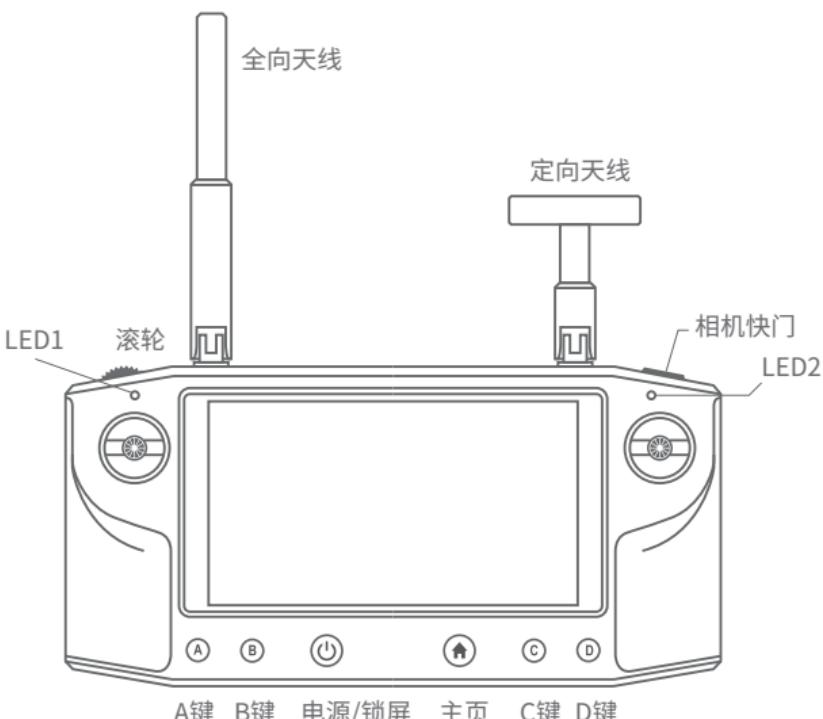
天空端

TeleLink图传天空端	×1
天空端天线	×2
HDMI线	×1
S.bus线(4Pin)	×1
电源线(2Pin)	×1
数传线(3Pin)	×1

遥控端

TeleLink遥控器	×1
遥控端全向天线	×1
遥控端定向天线	×1
遥控端摇杆	×2
Micro USB线	×1

功能图示



遥控端LED灯含义

LED1	红色：电量低 黄色：电量一般 绿色：电量高
LED2	未定义

遥控器天线安装

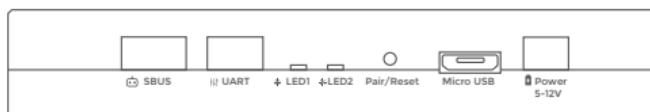
遥控器端的天线安装如上图所示，天线非螺旋接口，只需轻轻按下并顺时针旋转即可。需要的注意的是，天线的活动角度有限，不能任意转动以免损坏。

天空端的天线安装位置在天空端的侧面，不分左右。但是亦要注意安装角度，使无人机飞行时与地面遥控器的全向天线依旧可以平行，而且尽量不要被金属靠近或者导电体遮挡屏蔽如碳纤维机架，这样会受到不必要的额外干扰。

天空端安装方法

LED灯含义

- 1.仅上电时LED1亮，橙色（红黄组成，接通电源后15S内）
- 2.UART接口连接启动飞控后：LED2点亮（橙色，红黄两色）
- 3.对频：对频时LED1变黄，然后闪烁。对频后LED1保持黄色



线材的具体方式如下图所示,以CUAV V5+为例：

UART接口可以接到V5+的TELEM1/TELEM 2/UAERT4接口

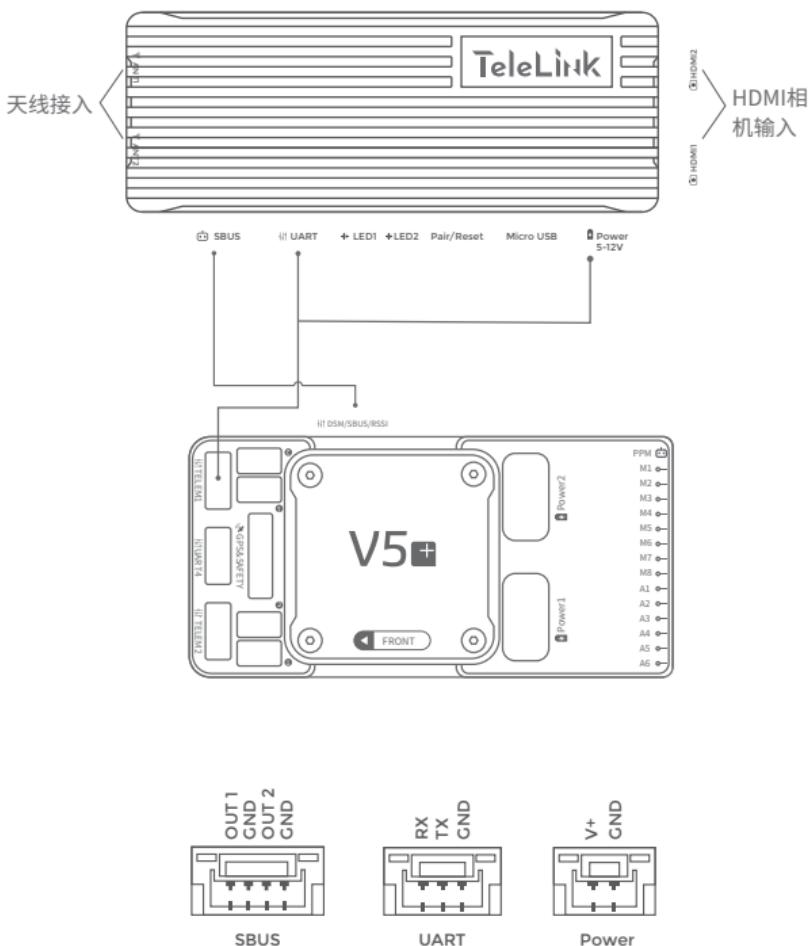
S.bus接口连接到V5+的SUBS接口

POWER接口连接到5V-12V(3s)电源。

注：

连接电源后，等待约15s左右，检查是否有LED被点亮，若超过30s后仍不能点亮，请检查硬件是否已输入电源。

连接示意图



*注: Telelink飞机端供电电流约为1.5A(5V),如果使用CUAV V5+及X7飞控可以直接通过飞控供电,其它飞行控制器建议独立供电或咨询供应商。

注意事项

- 注意接口定义,不要反接,否则可能造成设备损坏
- 使用正确的电源适配器进行充电,充电电压电流不能过大,以免造成设备损坏。
- 请阅读文档中心进行配置和使用
- 请勿自行拆修本产品
- 本说明书如有更新恕不另行通知,请至官网/文档中心下载最新版本

固件升级

固件升级教程请访问CUAV文档中心:<http://doc.cuav.net>

更多资料

关于产品的更多信息,请访问CUAV官方文档中心:

<http://doc.cuav.net> 及官方网站:<http://www.cuav.net>。

Thank you for choosing our products!

Please read this manual earnest before use!

This description only introduces the simple connection method.

For detailed tutorials, please visit our CUAV official document
<http://doc.cuav.net>

This product is compatible with drones using APM and PX4
firmware.

Product description

CUAV TeleLink remote control is a drone map data transmission system created by CUAV and Xiaomi Ecological Company, and represents the advanced level of the current open source drone industry.

TeleLink hardware uses SoC design, which integrates LTE-based wireless communication systems, image codec processing systems, and other supporting system sub-modules on a single chip. Utilize full link depth optimization technology to bring better experience of long distance, low latency and low power consumption.

In software, TeleLink runs the Android system, built-in QGround Control, is compatible with both APM and PX4 open source autopilot. 70ms minimum delay enables smooth observation and control of flight information and high-definition images.

Spec

Processor

Pinecone S1	4AP Cortex A53@2.2GHz 4AP Cortex A53@1.4GHz 4 Core Mali- T860 GPU A7 + DSP SDR
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Android version

Android 7.0

Transmission

FCC 20km CE / SRRC 12km

Latency

Minimum 70ms not included the delay caused by input source

Video Resolution

720p@30fps 1080p@30/60fps

Operating Frequency

2.4GHz ISM

Receiver Sensitivity

-99dBm@20MHz BW

Interference Recovery

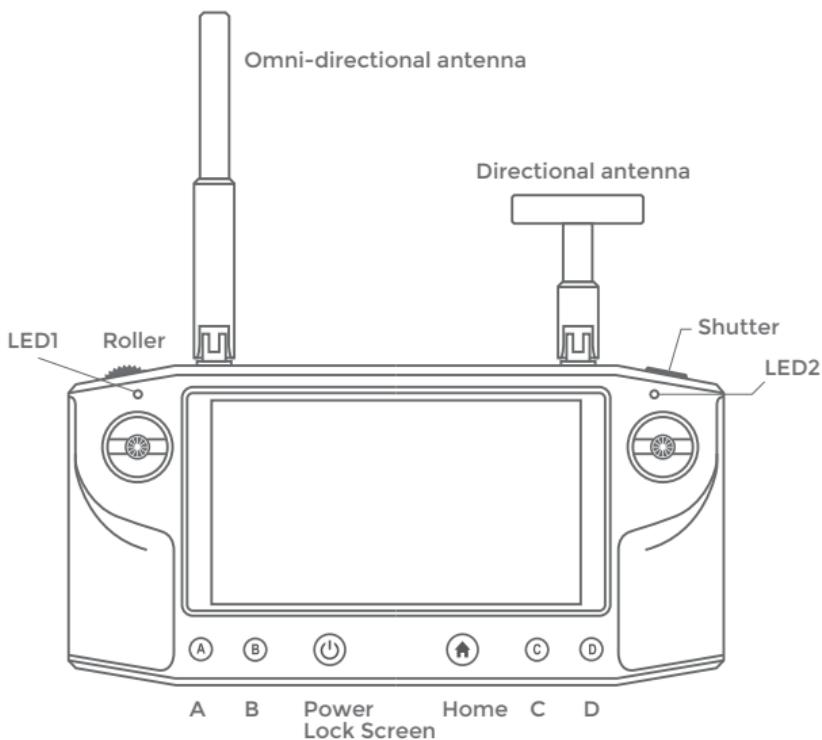
<1s

Power Consumption	average less than 4W (* only picture transmission works, screen brightness is medium, WiFi is off, GPS is off)
Storage	LPDDR3 2GB,eMMC 5.0 8GB
Dimensions	
AirSystem	78.5×30×15mm, 48g,Antenna not include.
Remote controller	217×106.5×31mm, 516g
Remote controller appearance and functions	
Material	Plastic
Screen	600nit peak brightness, 5.46 "size, 1080P, 16 million colors
	built-in speaker × 1
Audio	X 2
Microphone	Yes
Key lights	Bluetooth/WiFi/GPS (WiFi only supports 5G
Communication support	band)
LED	× 2 (yellow,red and green)
Interface	MicroUSB × 1,TFlash×1(supports up to 64GB extensions)
Antenna	Directional antenna(4.5dbi) × 1, omnidirectional antenna (2dbi) × 1
Built-in antenna	
External	WiFi antenna, GPS antenna GPS antenna interface
Battery	4950mAh lithium battery
Charger	Use Micro USB to 5V 2A current charger
AirSystem appearance and interface	
Shell	Aviation aluminum alloy
Ports	2 x Micro HDMI, 1 x 2 Pin(POWER), 1 x 3 Pin(UART), 1 x 4 Pin(s.us), 1 x Micro USB jack, 1 x button, 2 x MMCX antenna jack
Micro HDMI	Input of video signal from external camera
Micro USB	Charge, debug and upgrade, support OTG mode
Pair/Reset	
MMCX antenna	Reset the frequency and state
Indicator lights	Graphic signal and ground communication Indicates the state of frequency alignment and graph transmission
Output	SBUS support

Packing List

AirSystem	
TeleLink AirSystem	×1
Antenna	×2
HDMI cable	×1
S. bus cable (4Pin)	×1
UART cable (3Pin)	×1
Power cable (2Pin)	×1
Remote controller	
TeleLink remote	×1
Omnidirectional antenna	×1
directional antenna	×1
Rocker	×2
Micro USB cable	×1

Function graphic



Remote end LED lights meaning

LED1	Red: low battery
	Yellow: medium battery
	Green: high battery
LED2	undefined

Remote control antenna installation

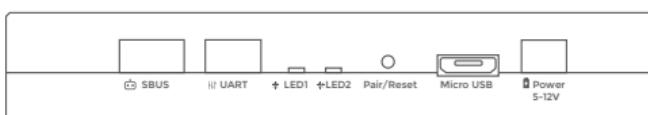
The antenna installation at the remote controller end is shown in the figure above. The antenna is not a spiral interface, just press it gently and rotate it clockwise. It should be noted that the antenna has a limited Angle of movement and cannot be rotated arbitrarily to avoid damage.

The antenna at the Airsystem is mounted on the side of the Airsystem. Pay attention to the installation angle so that the omnidirectional antenna of the drone and the ground remote controller can still be parallel when flying, and try not to be approached by metal or shielded by a conductive body such as a carbon fiber frame, which will cause unnecessary extra interference.

AirSystem installation method

Leds meaning

1. LED1 bright, orange (red and yellow, within 15S after power on)
2. After the UART interface is connected and flight control is started, LED2 is lit (orange, red and yellow)
3. Frequency alignment: when frequency alignment, LED1 turns yellow and then flashes. LED1 keeps yellow after frequency matching.

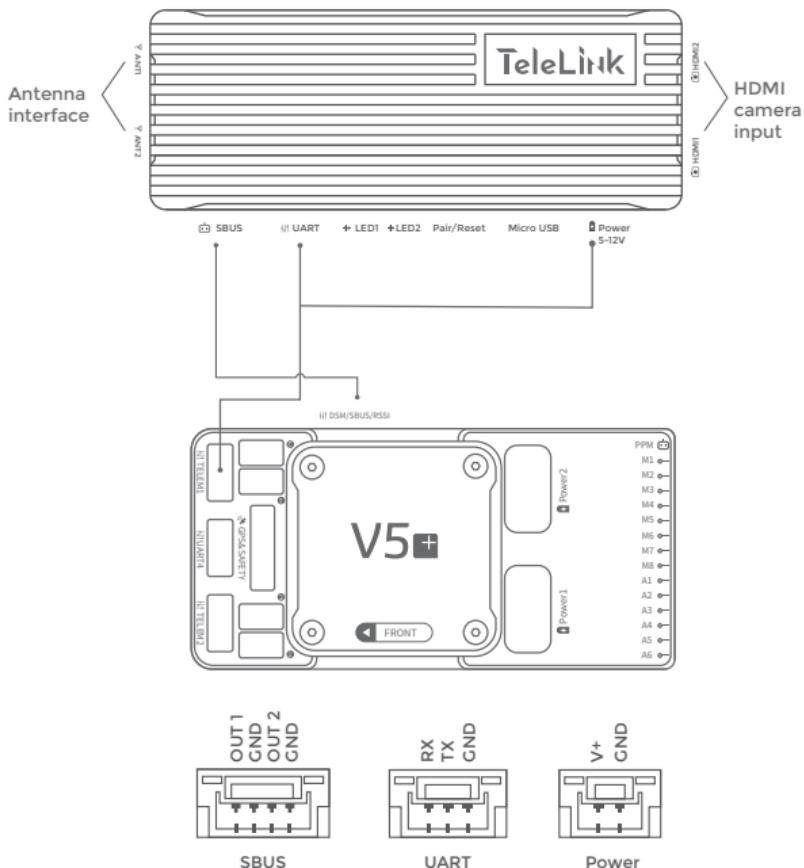


The specific way of wire connection is shown in the figure below. Take CUAV V5+ as an example, the UART interface can be connected to the TELEM1/TELEM2/UAERT4 interface of V5+. The s.bus interface is connected to the SUBS interface of V5+, and the POWER interface is connected to a 5v-12v (3s) power supply.

Note:

After connecting the power supply, wait for about 15s to check whether any LED is lit. If it cannot be lit after 30s, please check whether the hardware has input the power supply.

Connection diagram



* Note: the power supply current at the airsystem is about 1.5a (5V). Power can be supplied directly through the V5+&X7 autopilot. Other autopilots are recommended to supply power independently or consult the supplier.

Notes

- pay attention to the interface definition and do not reverse connect, otherwise the equipment may be damaged
- use the right power adapter for charging. The charging voltage and current should not be too highCause equipment damage.
- please read the document center for configuration and use- do not dismantle or repair the product by yourself
- this manual is subject to update without prior notice. Please download the latest version from the official website/docu- mentation centerversion

Firmware upgrade

Please visit the CUAV Documentation Center for a firmware upgrade tutorial:
<http://doc.cuav.net>

More info

For more information on the product, please visit the CUAV Official Documentation Center:<http://doc.cuav.net>
And official website:<http://www.cuav.net>



www.cuav.net