

SKYDROID 云卓

云卓科技（福建）有限公司



云卓-H12

V1.0

使用说明书

注意

本产品使用以下词条因操作不当可能带来的潜在危险加以分级说明。

注意: 如果不遵循说明进行操作,可能会导致财产损失和轻微伤害。

注意: 如果不遵循说明进行操作,可能会导致财产损失、重大事故和严重伤害。

警告: 通过阅读整个用户手册,熟悉产品的功能之后再进行操作。如果没有正确操作本产品可能会对自身或他人造成严重伤害,或者导致产品损坏和财产损失。本产品较为复杂,需要经过一段时间熟悉后才能安全使用,并且需要具备一些基本常识后才能进行操作,如果没有强烈的安全意识,不恰当的操作可能会导致产品损坏和财产损失,甚至对自身或他人造成严重伤害。本产品不适合儿童使用。切勿使用非云卓提供或建议的部件,必须严格遵守云卓的指引来使用产品。

一、概述

1、产品特性

- ① H12系列采用高通骁龙625处理器,搭载安卓嵌入式系统,采用先进的SDR技术,和超级协议栈,让图像更加清晰,延迟更低,距离更远,抗干扰性更强,无论是无人机,机器人,工控设备等都可以应用。
- ② 为数字摄像头、串口透传、s.bus等丰富的接口提供开发包、SDK和技术支持,拥有教练PPM输出,TPYE-C安装高速USB接口,拓展SIM插槽。
- ③ 1920*1080分辨率高亮显示屏,超大的屏占比,在阳光环境下依然可以清晰查看实时显示信息。
- ④ 天线信号互相补充,超高灵敏度、超远距离、配合先进跳频算法,大大增加了弱信号通讯能力。
- ⑤ Skydroid Fly APP基于TOWER进行了大量优化,更好的交互界面,更大的地图视野可控制飞行器实现智能航点规划,自动执行,一键回家,大幅提高工作效率。

2、主要用途及适用范围

H12适用于对直升机、固定翼、多旋翼、车、船等无人设备的视频图像传输(需选配摄像头)、数据传输和操控。

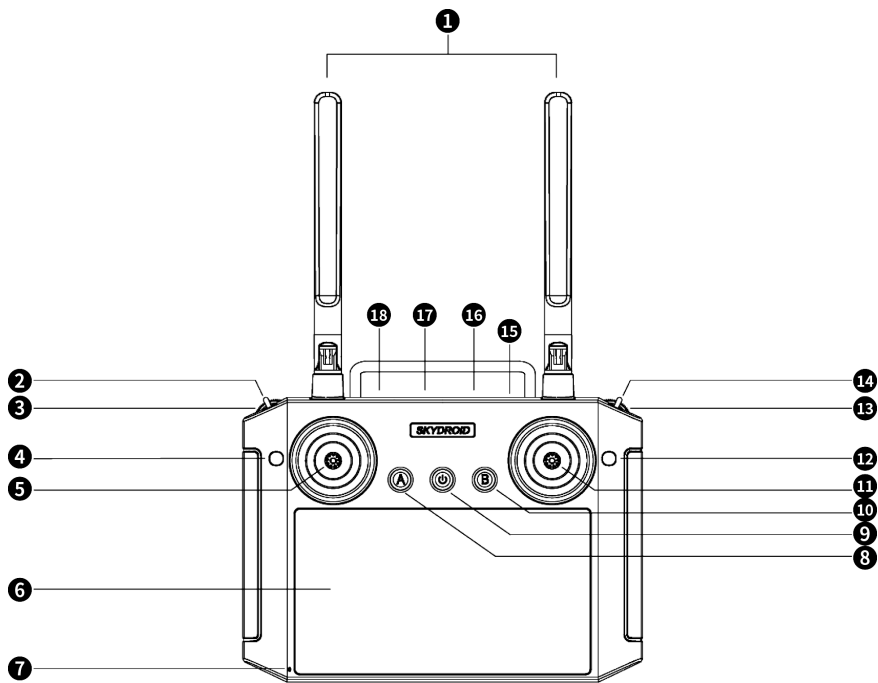
3、品种、规格

遥控器参数			
型号	H12	通道数	12
工作电压	4.2V	射频功率	20DBm@CE/23DBm@FCC
频段	2.400-2.483GHz	跳频	全新FHSS跳频
升级	APP在线升级	重量	646克
尺寸	190*152*94毫米	电池	10000mA/H
续航时间	6-20小时	充电接口	TYPE-C
应用	直升机、固定翼、多旋翼、车、船		
距离(空旷无干扰)	9km		

接收机参数			
型号	R12	通道数	12
工作电压	4.5-5.5V	工作电流	140mA@5V
尺寸	51*41*13毫米	重量	14克

4、型号的组成及其代表的意义

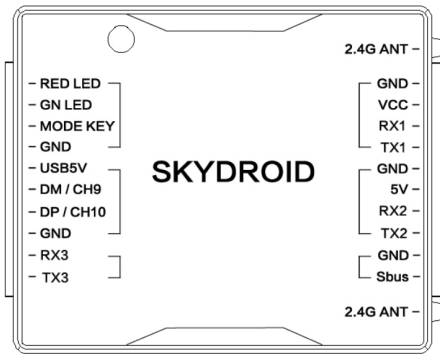
H12遥控器



序号	注解	序号	注解
①	2.4G 3dB天线	⑩	按键B
②	拨动三段开关E	⑪	右摇杆X2、Y2
③	拨轮G	⑫	按键D
④	按键C	⑬	拨轮H
⑤	左摇杆X1、Y1	⑭	拨动三段开关F
⑥	5.5寸屏	⑮	喇叭
⑦	MIC口	⑯	SIM卡槽
⑧	按键A	⑰	充电口
⑨	电源按键	⑱	PPM输出

备注：⑥ 触摸显示屏：可点击屏幕进行操作，使用时请注意为屏幕防水(如下雨天时避免雨水落到屏幕)，以免进水导致屏幕损坏。

接收机



名称	注解	名称	注解
RED LED	红灯	2.4 ANT	天线
GN LED	绿灯	GND	相机接口
MODE KEY	按键	VCC	
GND	地线	RX1	
USB 5V	USB升级接口	TX1	
DM/CH9		GND	数传接口/CBUS
DP/CH10		5V	
GND		RX2	
RX3	扩展接口	TX2	
TX3		GND	
		SBUS	SBUS
		2.4G ANT	天线

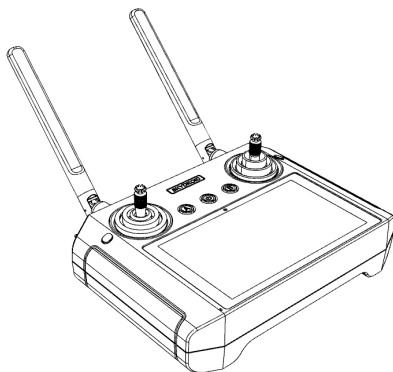
接收机状态灯：

接收机状态指示灯	接收机状态
绿灯长亮	通讯正常
绿灯慢闪	与遥控器断连
绿灯快闪	对频模式
红灯长亮	C.BUS模式
红灯慢闪	升级中
红灯快闪	自检没过，请重试或返厂

遥控器天线角度

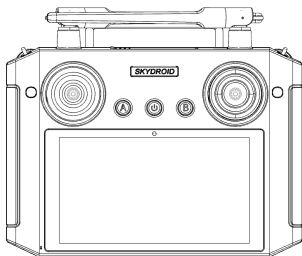
- (1)调整遥控器天线角度, 尽量正对飞行器飞行方向;
- (2)天线相互不要形成遮挡, 交叉。

正确操作

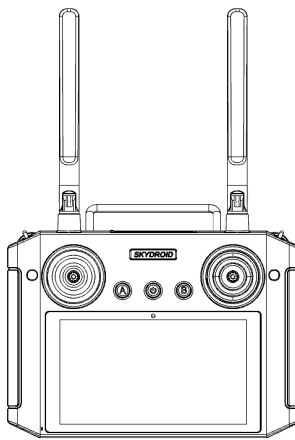


天线展开并呈45°向上

错误操作



天线不能交叉



天线不能与遥控器平行

5、使用环境条件

注意

- A) 环境温度:-10°C~+55°C
- B) 相对湿度: Not exceed 85%。
- C) 大气压力: 86kPa~106kPa
- D) 使用地点不允许有爆炸危险的介质, 周围介质中不应含有腐蚀金属和破坏绝缘的气体及导电介质, 不允许充满水蒸气及有严重的霉菌存在。
- E) 使用地点应具有防御雨、雪、风、沙、灰的设施。
- F) 本遥控器和接收机均无防水功能。

6、工作条件

供电方式和注意事项

H12系列地面端内置一体式可充电锂电池, 兼容市场标准TYPE-C接口, 9v-2A规格的电源适配器(例如手机、相机等数码产品USB充电器)进行充电。

如在地面端充电时遇到冒烟、有异味、漏液的情况下时, 请勿继续给地面端充电, 请移送至本公司进行维修。

请勿在婴儿触碰区域给本产品进行充电, 以免发生触电危险。请勿在超过60°C的环境下对本产品进行充电。

7、安全

警告

Ⓢ初学者请特别注意以下安全事项! 请细读!

- Ⓢ 禁止在疲劳、醉酒等身体状态不佳时飞行!
 - Ⓢ 禁止在下雨、强风等恶劣天气时飞行!
 - Ⓢ 禁止在接近高压线、通信基站、有人聚集或者活动的场所飞行!
 - Ⓢ 禁止在机场和其他明令禁飞区飞行!
 - ⚠ 禁止在人群集中的地方、停车区域或者其他可能造成财产损失或者人身伤害的区域操控飞行模型
 - Ⓢ 飞行前, 做好飞行器的设备检测, 检查收发系统与飞行器是否正常;
 - Ⓢ 请使用有保障的专业充电器为电池充电。
- 本产品天线为脆弱部件, 避免受力过度破坏。

二、使用、操作

1、使用前的准备和检查

注意

- ① 使用前务必先检查遥控器电量是否充足。
- ② 使用前请检查天线是否按要求摆放, 已获得最佳效果。
- ③ 首次使用请确保固件已经升级至最新版本。
- ④ 用户应确保自己不在醉酒、药物影响下操作使用。

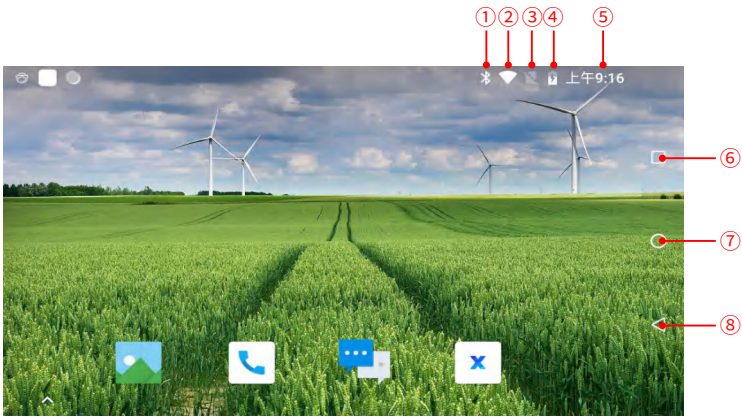
2、使用方法

语言设置



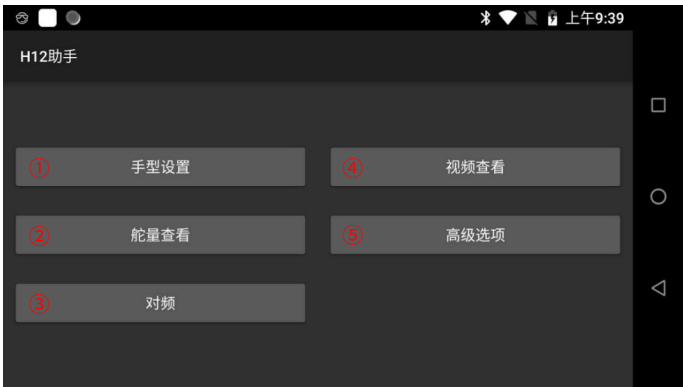
点击设置、系统、语言和输入法中可更改语言。

状态栏提示



- ① 蓝牙开启提示
- ② 无线WIFI信号强度
- ③ SIM卡提示窗(图中未插入SIM卡状态)
- ④ 电量显示(图中为充电状态)
- ⑤ 时间显示
- ⑥ 后台进程查看
- ⑦ 返回主页面
- ⑧ 返回上一步操作

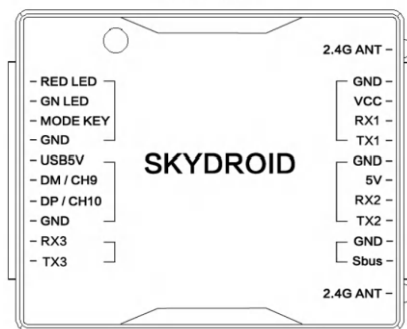
H12助手介绍



- ① 用于飞行手型切换。
- ② 用于查看遥控器舵量值。
- ③ 将遥控器与其他接收机进行对频(对频方法在下方介绍)。
- ④ 用于查看摄像头传回来的图像。
- ⑤ 高级选项里可以调整通道、升级摇杆固件、查看信号强度、修改接收机串口波特率(密码需向技术人员申请)。

对频操作

接收机



- ① 接收机5V通电后短接GND和MODE KEY后绿灯快闪。打开遥控器上的H12助手，点击对频、开始对频。对频成功后接收机绿灯常亮。
- ② 给接收机快速上电5次，第6次启动对频模式绿灯闪烁。打开遥控器上的H12助手，点击对频、开始对频。对频成功后接收机绿灯常亮。

使用串口线共享数传(需另外购买)



以H12连接电脑端Mission Planner为例

① 一头插H12遥控器音频口，一头与电脑相连，第一次使用需要用力插入，确保其连接稳定。



② 打开电脑端Mission Planner地面站, 选择对应COM口, 波特率115200 , 即可连接。
Mission Planner 只适合PIX和APM飞控, 其他飞控需要用飞控适配的电脑地面站连接。



常见问题与解决办法

1、遥控器是否可以安装其他APP?

遥控器端权限完全开放, 没有任何专用软件和限制软件的安装与卸载。支持QGC软件的使用, 暂时无法使用K3A软件。

2、数传无法连接?

检查地面站是否是选对遥控器类型。检查波特率是否与飞控一致 (H12助手, 高级999, 接收机设置波特率)。检查RX TX是否反接 (正确接法RX接TX TX接RX)。

3、遥控器一直在响?

当遥控器没有与接收机连接成功, 遥控器会一直进行一个提示的报警。

4、地面站声音太低, 无法听清?

可以在设置中找到声音选项, 在声音选项中调节声音。

5、TYPE-C口除了充电还可以做什么?

TYPE-C口除了充电, 还可以与电脑连接进行文件查看。

6、遥控器有几种连接网络的方式?

可通过SIM卡、连接WIFI连接网络。

三、保养、维修

长期停放时的维护、保养

将遥控器存放于干燥通风处, 减少阳光直射以防止电池过热。若需存放超过三个月, 则推荐的存放温度区间为22摄氏度至28摄氏度。切勿将电池存在于低于零下20摄氏度或高于45摄氏度的场所。

四、运输、储存

警告

为避免可能的伤害和损失, 务必遵守以下各项:

由于线材和小零件可能对儿童造成危险, 所以务必让儿童远离遥控器的部件。

注意

- 1) 切勿让遥控器浸入水中, 若入水, 请及时用松软干布擦拭, 并立即关闭电源。
- 2) 禁止机械撞击、碾压、刺穿电池, 禁止将电池跌落。

五、其他



QQ群



微信公众号



新浪微博



优酷平台

说明书如有更新, 恕不另行通知, 请持续关注官网www.skydroid.xin

SKYDROID 云卓

SKYDROID TECHNOLOGY (FUJIAN) CO.,LTD



Skydroid H12 V1.0

User Manual

Attention

This product uses the following terms to classify the potential hazards that may be caused by improper operation.

Note: If not follow the instructions, it may cause property damage and minor injuries.

Note: If not follow the instructions, it may cause property damage, major accidents and serious injuries.

Warning: Misuse of this product may result in injury, damage or loss of property. Read the manual carefully before using this product. This item is not a toy. This item is intended for use by professional UAV operators and installers only. Do not use this product if you lack the knowledge and expertise to install and maintain UAV radio equipment. Do not use unapproved or unofficial components with this system. Operators must strictly follow the operation guides set forth in this manual. Skydroid does not accept any liability for the use or misuse of this product.

A.Overview

1.Product Features

① HThe H12 series uses newest Qualcomm Snapdragon 625 processor, equipped with an Android embedded system and advanced SDR technology and super protocol stack, making the image clearer, lower the latency, longer distance, stronger anti-interference, whether it is drones, robots, industrial control equipment, etc. can be applied.

② We provide development kits, SDKs and technical support for digital cameras, serial transparent transmission, sbus and other rich interfaces. Equipped with coach PPM output, Type-C Android high speed USB interface, expanded TF card slot, etc.

③ The 1920 * 1080 resolution high brightness display screen, with a large proportion of screens, can still clearly view the real-time display information in a sunny environment.

④ The dual-antenna signals complement each other, with super-strong signals and ultra-long transmitting distances, combined with algorithm control and out-of-step frequency hopping algorithms, greatly increasing the ability to communicate with weak signals.

⑤ Skydroid Fly App has undergone a lot of optimization based on QGC, a better interactive interface, a larger controllable map field of viewing, the aircraft implements intelligent waypoint planning, automatic execution, automatic follow-up, and one-click home, highly provides working effectiveness in professional fields.

2.Main applications

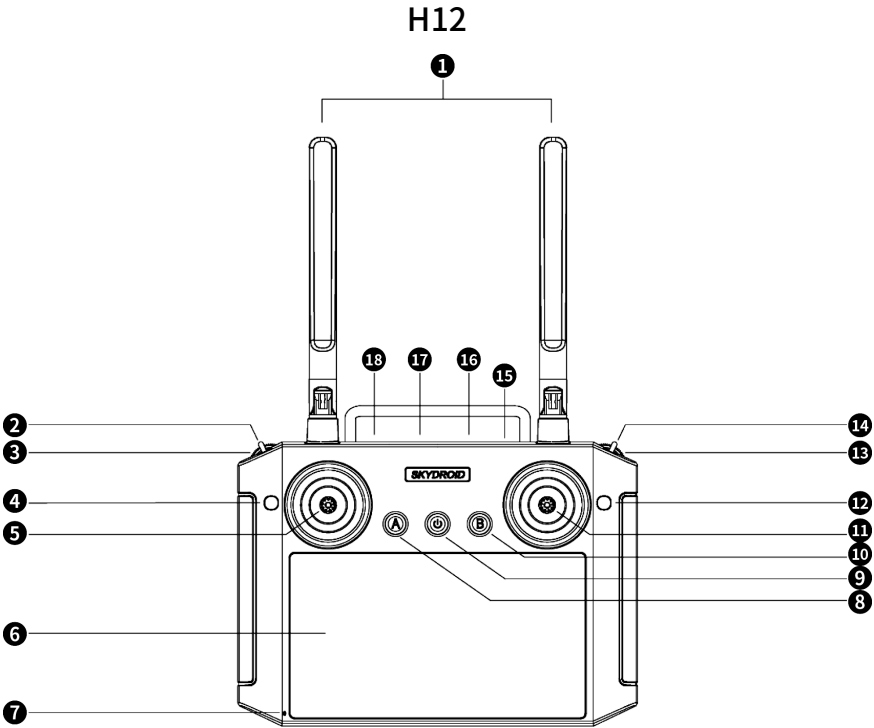
It is used to remotely operate helicopters, fixed wings, multi-rotors, vehicles, ships, etc. for video/image transmission (camera optional), data transmission, telemetry, and control drone flight.

3.Remote Controller Specification

Remote Controller Specification			
Model No.	H12	Channels	12
Working voltage	4.2V	RF Power	20DBm@CE/23DBm@FCC
Frequency	2.400-2.483GHz	Frequency hopping	Newest FHSS
Update way	APP Update online	Weight	646g
Size	190*152*94mm	Battery	10000mA/H
Endurance	6-20Hrs	Charging port	TYPE-C
Applications	Helicopter, fixed wing, multi-rotor, unmanned vehicle, unmanned boat, etc.		
Range (Open & no interference)	9km		

Receiver Specification			
Model No.	R12	Channels	12
Working Voltage	4.5-5.5V	Working current	140mA@5V
Size	51*41*13mm	Weight	14g

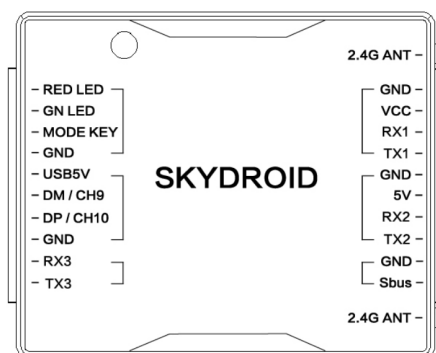
4.The composition of the model and its significance



Number	Annotation	Number	Annotation
①	2.4G 3dB antenna	⑩	Button B
②	Toggle 3 positions switcher E	⑪	Stick X2、Y2
③	Thumbwheel switch G	⑫	Button D
④	Button C	⑬	Thumbwheel switch H
⑤	Stick X1、Y1	⑭	Toggle 3 positions switcher F
⑥	5.5inch screen	⑮	Speaker
⑦	MIC port	⑯	SIM card slot
⑧	Button A	⑰	Charging port
⑨	Power switcher	⑱	PPM output

Remarks:⑥ Touch screen, you can click the screen to operate. Please pay attention to waterproof the screen when using it (such as avoiding rain water falling on the screen in rainy days), so as to avoid damage to the screen caused by water ingress.

Receiver



Name	Annotation	Name	Annotation
RED LED	Red light	2.4 ANT	Antenna
GN LED	Green light	GND	Camera ports
MODE KEY	Button	VCC	
GND	Ground	RX1	
USB 5V	USB for upgrading	TX1	
DM/CH9		GND	Data transmission/CBUS
DP/CH10		5V	
GND		RX2	
RX3	Expansion ports	TX2	
TX3		GND	SBUS
		SBUS	
		2.4G ANT	Antenna

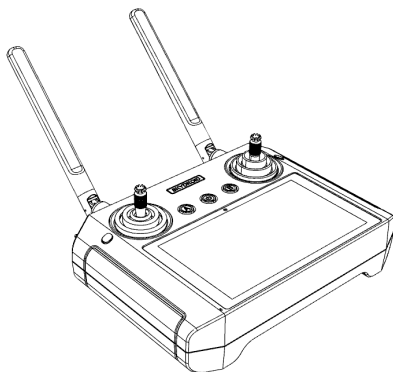
Receiver Status light

Receiver LED status Indication	Receiver Status
Solid Green LED	Connection Normal
Flash slowly Green LED	Disconnected
Flash rapidly Green LED	Binding mode
Solid Red LED	C. Bus mode
Flash slowly Red LED	Upgrading
Flash rapidly Red LED	Self test failed, Re-try or return to factory

Remote control antenna angle

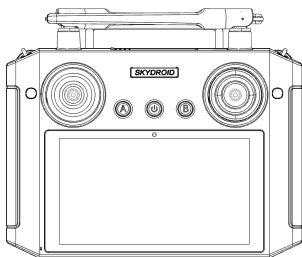
- (1) Adjust the angle of the remote control antenna to face the flight direction of the drone.
- (2) Antennas shall not form shielding or crossing with each other.

Right operation

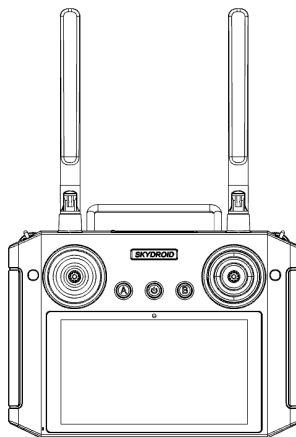


Keep the antenna extended and 45 ° upwards

Wrong operation



Antenna cannot cross
on each other



The antenna cannot be parallel
to the remote control

5.Environment conditions

Pay attention

- A) Working temperature:-10°C~+55°C。
- B) Relative humidity:Not exceed 85%。
- C) Atmospheric pressure:86kPa~106kPa
- D) Working environment should not contain explosive material or any corrosive or harmful gas may cause interference in the operation of the product.
- E) Always work under shelter to prevent rain, snow, wind, sand and dust contamination.
- F) This remote controller and receiver are not waterproof.

6.Working conditions

Power supply and attentions

H12 series uses a built in Li-ion battery. Charging port is compatible with 9V -2A Type-C chargers (such as cell phone, digital cameras' USB charger).

In case of smoke, heat or unusual smell during charging, please stop charging immediately and return to our company for servicing as soon as possible.

Do not leave the product unattended while charging. Do not leave the product in a place where children can reach. Do not charge when room temperature over 60 °C.

7.Safety

Warning

⊗ **Beginners should pay attention for the followings! Please read it carefully!**

- ⊗ DO NOT fly under the influence of substances, or when tired!
- ⊗ DO NOT fly in strong wind and or rainy conditions!
- ⊗ DO NOT fly close to electric emission towers, communication stations and crowded area!
- ⊗ DO NOT fly nearby airports and other prohibited areas!
- ⊗ DO NOT fly around people or animals, or in any location where possible to damage property!
- ⚠ Check equipment before every flight and check whether the transceiver system and the drones are normal or not.
- ⚠ Please use certified chargers to charge the batteries.
- ⚠ DO NOT put unnecessary force on antennas since its weakness.

B.Operation

1.Preparation and pre-checking before use

Pay attention

- ① Check battery level.
- ② Check position of the antenna to get the best performance.
- ③ Make sure the firmware is the latest version.
- ④ DO NOT operate under the influence of alcohol or drugs.

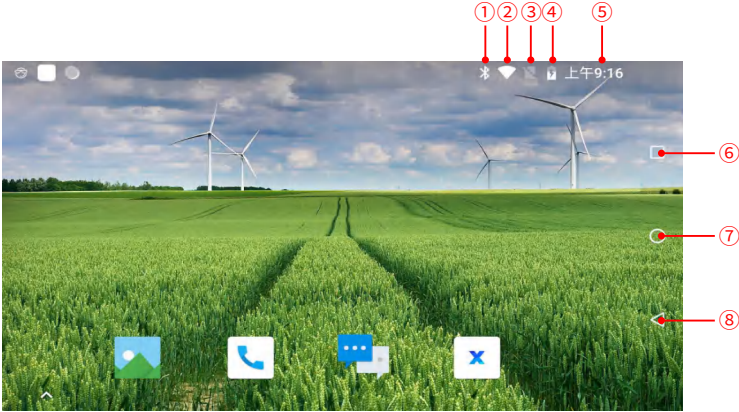
2.Operation

choose your language



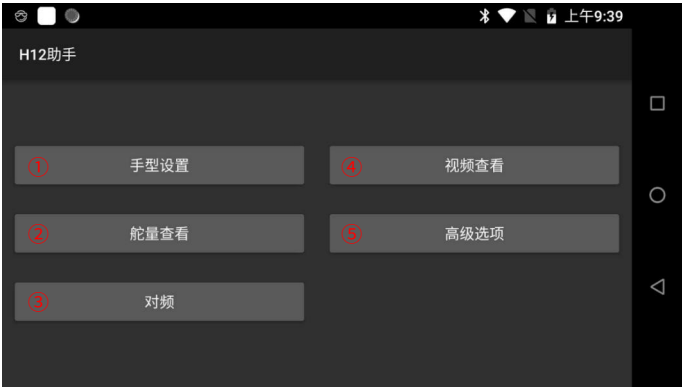
Enter setting, and then enter system, choose your language.

Status bar



- ① Bluetooth
- ② Signal
- ③ SIM card status (without sim card in the picture)
- ④ Power lever (charging in the picture)
- ⑤ Time
- ⑥ Back ground management
- ⑦ Home
- ⑧ Return to last step

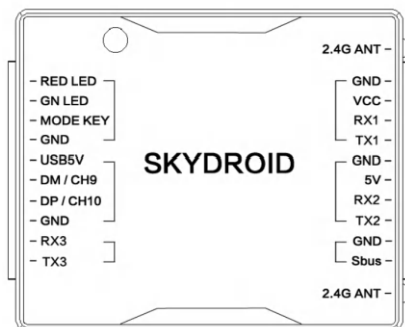
H12 Helper



- ① Mode change
- ② Rudder value
- ③ Binding the remote control with other receivers (the binding method is introduced in below)
- ④ Video/image transmission checking
- ⑤ In the advanced parameters setting, you can adjust the channel, upgrade the joystick firmware, and modify the receiver's serial port baud rate (password requested from our engineers)

Binding operation

Receiver



① When the receiver is powered on, the green light flashes quickly after short connecting GND and MODE KEY. Open the H12 Helper on the remote control, click “binding” to start binding. The green light of the receiver is always on after the binding successfully.

② Quickly power on and off the receiver 5 times, and start the binding mode at the 6th time, on when, the green light flashing. Open the H12 Helper on the remote control, click “binding” to start binding. The green light of the receiver is always on after the binding successfully.

Use serial port cable (need be purchased separately) to share data transmission



Take H12 connecting Mission Planner as an example

① One end is plugged into the H12 remote control audio port, and the other end is connected to the computer. If it is the first time you use it, please firmly/tightly plug it in to ensure its stable connection.



② Open the Mission Planner ground station, select the corresponding COM port, and connect with the baud rate of 115200.

The Mission Planner is only suitable for Pix and APM flight control, and other flight controls need to be connected with the computer ground station adapted.



Q & A

1.Can the remote control install other apps?

The permissions of the remote control are all open, and there is no special software or restricted software installation and uninstallation. Supports specialized customized QGC App to be installed, K3A App can't support now.

2.Data transmission/telemetry cannot be connected.

Check whether the corresponding remote controller has been selected in the ground station App and whether the baud rate is consistent with the flight control (H12 helper, advanced setting, password is 999, receiver setting baud rate). Check whether RX TX is connected reversely (the right way is connect controller' s RX to receiver' s TX, and controller' s TX to receiver' s RX).

3.The remote control keeps ringing/beeping.

When the remote control is not successfully connected with the receiver, the remote control will always send out a prompt alarm.

4.The QGC sound is too low to hear?

Please set it in Vol+/vol- section.

5.What else can the TYPE-C port do besides charging?

In addition to charging, the TYPE-C port can also be connected to a computer for file viewing.

6.How many ways to connect the remote control to the network?

By SIM card or Wifi or smart phone' s hotspot.

C.Maintenance

Storage for not using for a long period

Put H12 in a dry and ventilated area. No direct sun light to prevent harm to the internal li-ion battery. If store it over 3 months, it is highly recommended to put it in a room temperature between 22°C to 28 °C. DO NOT put it - 20 °C or higher than 45°C.

D.Transportation and storage

Warning

In order to prevent lost or getting hurt, please strictly follow the rules of operation as below:

Keep small parts or wire far away from children. DO NOT let children touch the small/spare parts of H12.

Attention

- 1) DO NOT put H12 into water. If it does, please switch off the power and dry it at once!
- 2) DO NOT crash the H12 or break and DO NOT drop the battery.