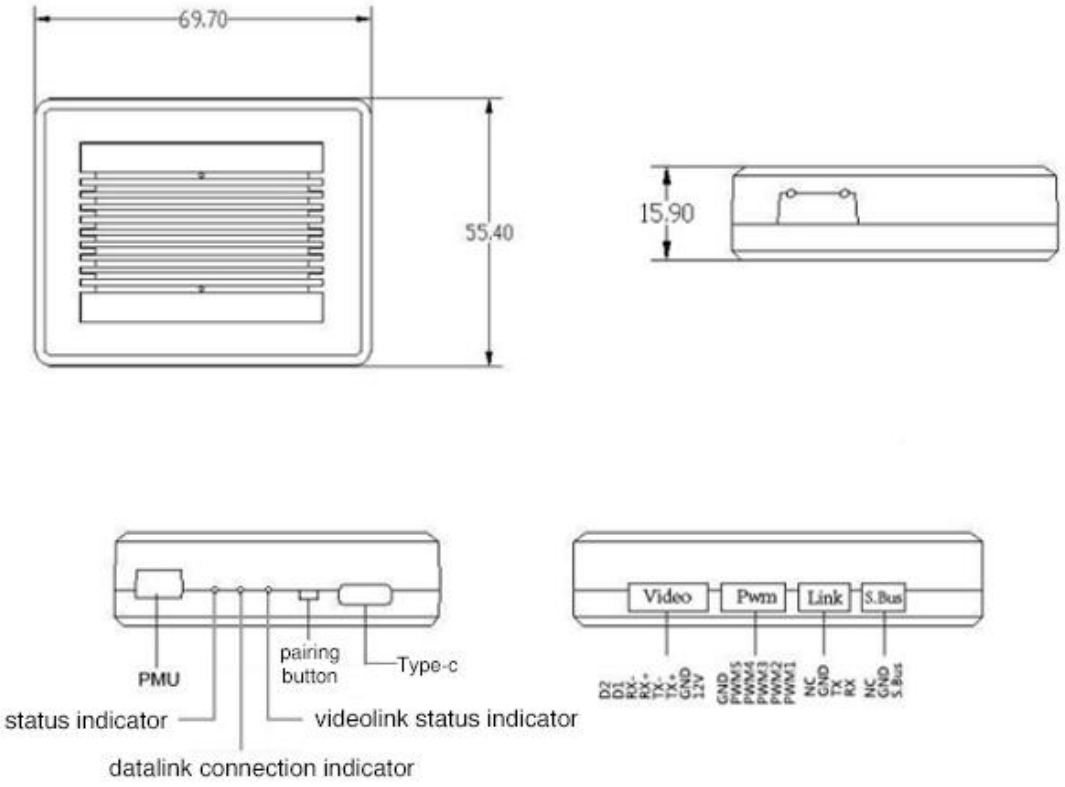
MK15 Radio Controller User

Directory

1 MK15

1.1 Diagram of Remote Control Switch and Interface

1.2 Diagram of the Air Unit Interface



1.3 Switch, Button and Channel

MK15 remote controller has 13 physical switches and 16 channel outputs

MK15 remote control channel definition and switch distribution

Channel number	Switch Name	Default physical switch
1	Aileron Joystick	J1
2	Elevating Joystick (Mode II)	J2
3	Throttle Joystick (Mode II)	J3
4	Yaw Joystick	J4
5	3-position switch SA	SA
6	3-position switch SB	SB
7	3-position switch SC	SC
8	Button A	A
9	Button B	B
10	Button C	C
11	Button D	D
12	Dial LD	LD
13	Dial RD	RD

The remote controller supports custom channel mapping, please refer to the ″ Tuning APP″ chapter of this manual

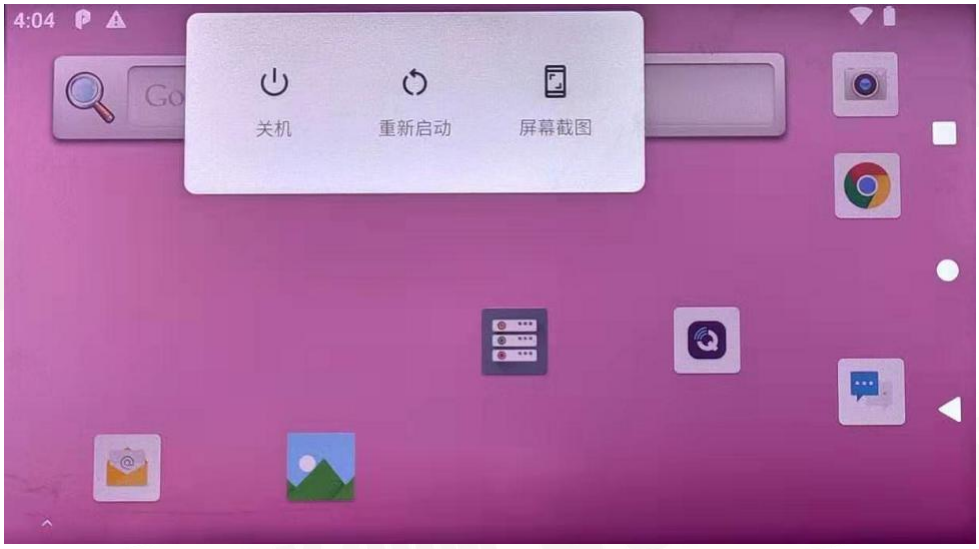
1.4 Parameters

ParametersOverall Performance	
Max.Transmission Range (without any obstacles or electromagnetic interference)	15km
Channel	13 physical switches and 16 channel outputs
Supported Drone Type	multirotor/fixed-wing/glider/helicopter
Supported Flight controller	Open source PIX、APM、PALADIN V2 、JIYI K3A K++
Remote Controller（Ground Unit）	
Display	5.5 inch 1920*1080 1000 cd/m2 LCD touch screen
Size	189 x 138 x 41 mm
Weight	850g
Battery ambient temperature	0℃ ~55℃
Battery	10400 mAh 7.4V 2S li-ion battery
Fast charge	PD, support Max. 30W
Charging time	3.2 H（30W fast charge） 4.5 H（20W fast charge）
Endurance	12H
Interface	charge：Type-C Firmware update: DATA (4-Pin) mobile network：SIM slot Interface
waterproofing grade	IP53
operating ambient temperature	-10℃ ~ 55℃
Air Unit（receiver）	
Signal output	16 channel S.Bus、5 channel PWM
Interface	S.BUS：3-Pin Data link（fc）：UART 4-Pin PWM channel 1-5：6-Pin video output：8-Pin Firmware upgrade：Type-C
Video input	Ethernet,HDMI
Size	70 x 55 x 16 mm
Weight	100 g
Antenna gain	5dBi
Working Voltage	25.2 ~ 58.8 V Working Voltage (6S ~ 14S)
Working ambient temperature	-10℃to 55℃

1.5 Turn on/off the remote controller

Turn on: Short press the power button for 1s until the battery indicator lights up, and long press the power button for 2 seconds to turn on the remote controller.

Turn off: Press and hold the power button for 2 seconds to pop up the window, select the turn off button to turn off.



1.6 Screenshot

Press and hold the power button for 2 seconds to pop up the window, select the screenshot to complete the screenshot operation.

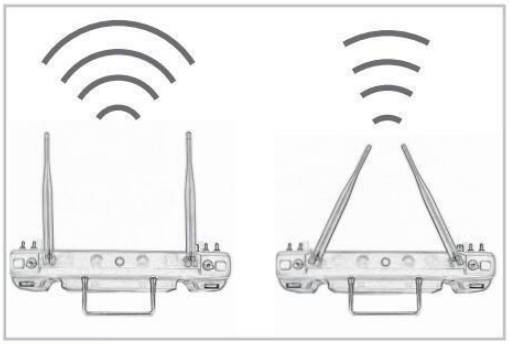
1.7 Remote Controller Charging

Please use the standard PD charger to charge the MK15 remote controller. After connecting the charging connector, the red light on the left side of the Type-c interface will light up to indicate that charging has started. After the charging is completed, the indicator light will turn green.

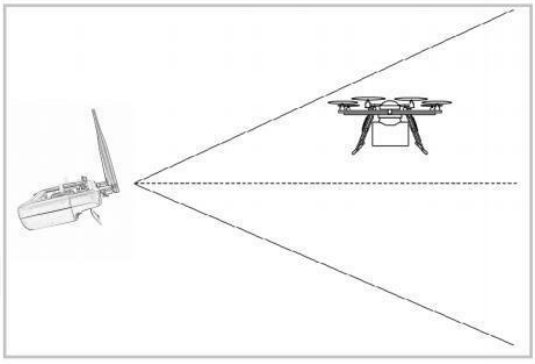
*It cannot be charged with a 5V adapter, please use the original charger for charging.
*Please turn off the remote controller before charging, it cannot be charged when turned on.

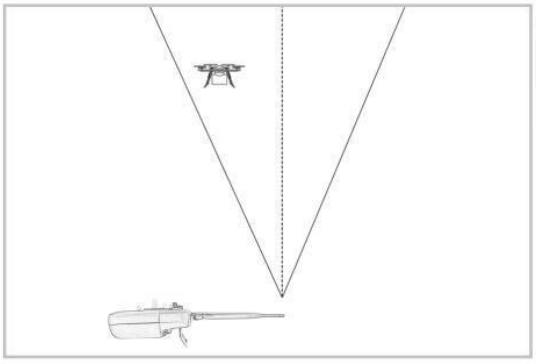
1.8 Reference diagram for antenna installation and use

Diagram of the remote controller signal angle



Using diagram of the remote controller antenna





Using diagram of sky end antenna

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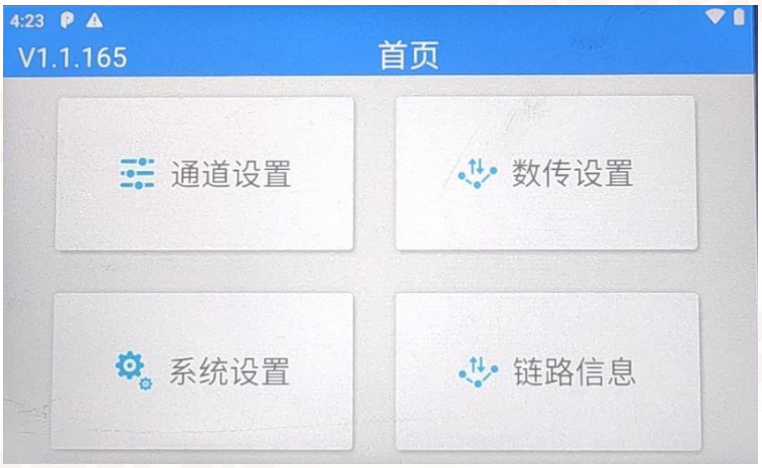
Antenna installation diagram for low-altitude flight.
(If the flying altitude is less than 10 meters, the antenna facing upwards.)

Antenna installation diagram for high-altitude flight.
(If the flying altitude is more than 10 meters, the antenna facing downwards.)

2 Remote Controller APP

The MK15 setting parameters are set through the built-in Tuning APP.



2.1 Channel setting

Through the channel setting function, the user can set the servo stroke, neutral point, servo reverse and channel mapping of each channel of the remote control.

Servo stroke

The default range of stroke is -100 to 100. Select the target channel and click to output the corresponding value to successfully change the servo stroke. Note: -100 means the actual PWM is 1050us, 0 means the actual PWM is 1500us, 100 means the

actual PWM is 1950us.

Neutral point adjustment

Select the target channel and click to output the corresponding neutral point value.

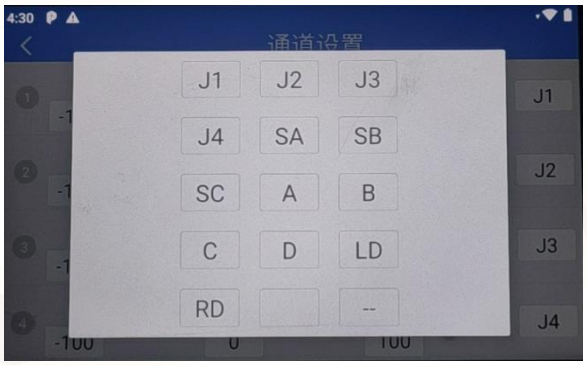
Servo reverse

Select the target channel and click the corresponding servo forward and reverse switch to successfully set the servo forward and reverse.

Channel mapping

The user can freely define the control switch of each channel from the default joystick, dial and buttons.

Setting steps: Select the target channel, click the channel mapping button, the switch list will pop up, and select the required switch.



2.2 Data Link Setting

Through the data link setting function, the user can select the corresponding type or set a specific serial port baud rate.

Connection type

The optional data output mode of the remote controller is A-USB or Bluetooth output.

Flight controller type

Select the flight controller you want to use in the flight controller list. Currently supported flight controllers are: Jiyi, Boying,and open source PIX Hawk flight controllers.

Baud rate selection

If you are connected to other devices, you can change the flight controller to custom and manually select the corresponding baud rate to connect.

2.3 System Setting

Adjust the system settings of the remote controller, such as remote control frequency pairing, changing the language, changing the throttle joystick etc.

Pairing

Please follow the diagram below for frequency matching.

1. Click "Start pairing" in the APP, the LED status light will flash red light, and the APP will remind you "paring".
2.Click the receiver pairing button for 2 seconds, the red LED will flash quickly, and the paring will be successful.
3. After the pairing is successful, the remote controller and the air unit indicator lights are both green.

Joystick type
Switch the type of joystick, the available types are Mode I, Mode II and custom.

3.4 Fail-safe Protection

Fail-safe function: when the remote controller loses connection with the receiver, the receiver continues to maintain the output of the channel value you set, which has reduced the cost of crashing.

If the flight device you are using is equipped with a flight controller and communicates via S.bus, then you do not need to set the fail-safe protection on the remote control (except for special requirements of the flight controller, you need to maintain a value through a certain channel to trigger entry to fail-safe protection s when it is out of control) , you can set the corresponding protective measures in the flight control app. There is an out of control bit in the S.bus communication protocol to tell the flight controller what is out of control. The switch on the left is the channel of the remote controller. If you need a channel to output a specific value, click the "Hold" of the corresponding channel to enter "Custom", select the ‘stroke’ and enter the stroke value you need.


47% 上午12:35
失控保护
开关
1
自定义
1500
2
自定义
1500
3
自定义
1500
4
保持
5
保持
6
保持

3 Data link (Connect to GCS)

3.1 Connect to the ground station via USB

1. Enter the Assistant APP, open the data link setting and change the connection mode to "USB serial port" connection.
2. Open the ground station APP and select USB connection (At this time, the APP will remind whether to allow the USB permission, please select OK).
3. The connection is successful.

Note: The USB connection here means that APP gets data through the USB port, not an external data cable.

3.2 Connect to the ground station via Bluetooth

1. Enter the Assistant APP, open the data link setting and change the connection mode to "Bluetooth" connection.
2. Enter the Android system settings, open the Bluetooth settings, search for the Bluetooth device with the name "SIYI 68********", to pair and connect.
3. Open the ground station APP and select the paired Bluetooth device to connect.
4. The connection is successful

3.3 Solutions for fail connection

1. First make sure whether the data link wire is connected with the flight controller. Please check whether the wiring sequence is correct, the flight controller and the air unit TX and RX are cross-connected. Enter the remote control APP to view the link information. The flight controller and the air unit are connected normally, and the downlink value will be greater than 0. When the value is 0, please check the connection wire.
2. Select connection in the APP but without data, open remote control APP - data link settings to check whether the connection mode is set correctly, the flight control model or baud rate setting is correct.

4 Video Link（FPV）

4.1 Use a third-party FPV camera

Open the FPV APP to display the image direcly.

4.2 Use a Ethernet camera/gimbal camera/camera

1. Because the air unit network segment is 192.168.144, please change the IP address to 192.168.144 before using the camera(It cannot be used without modification).
2. Connect to the camera settings page, view the video URL and copy it to the paste box.
3. Open APP FPV or download third-party video player software.
4. Paste the copied URL address to the player to view the video.

4.3 Connection Method of the HDMI Version Camera

1. Use the HDMI cable to connect the video device to the HDMI processing module, and connect the data output cable of the HDMI processing module to the air unit.
2. Turn on the remote controller, then turn on the power of the air unit and the camera.
3. Open the FPV APP, enter rtsp://192.168.144.64:554/live/0 in the address bar, return to the main interface of the APP to view the image
4. If using other RTSP video playing apps of QgroundControl, please select RTSP Video Stream as the video source type.

1. Enter rtsp://192.168.144.64:554/live/0 in the RTSP URL address bar and click Save.
2. Open the APP video window to view the image.

4.4 Parameter

Air unit IP address: 192.168.144.11

Ground unit IP address: 192.168.144.12

Three proofings FPV camera address: 192.168.144.25

HDMI encoder address: 192.168.144.64

three proofings FPV camera RTSP address: rtsp://192.168.144.25:554/main.264

HDMI encoder RTSP address: rtsp://192.168.144.64:554/live/0 Commonly used video player software: QGroundControl, EasyPlayer Video playing URL: Because the video input device manufacturers are different, the URL will also be different, the actual address provided by the camera (in the camera's parameter setting page)

Network diagnosis Android APP: Android version of ping tool