RunCam®
Born for RC Fanatics

WiFiLink-RX

User Manual-OpenIPC System V1.1

Catalogue

I.Product Overview 01

II.Firmware Support 02

III. Specifications 03

IV. LED Status Indicators 04

V. Button Functions 05

5-way Button 05

Record Button 05

Flash Button 05

VI. Connecting to Air Unit 06

VII. System Flashing 07

A. Obtaining the System Image file 07

B. Flashing Software 08

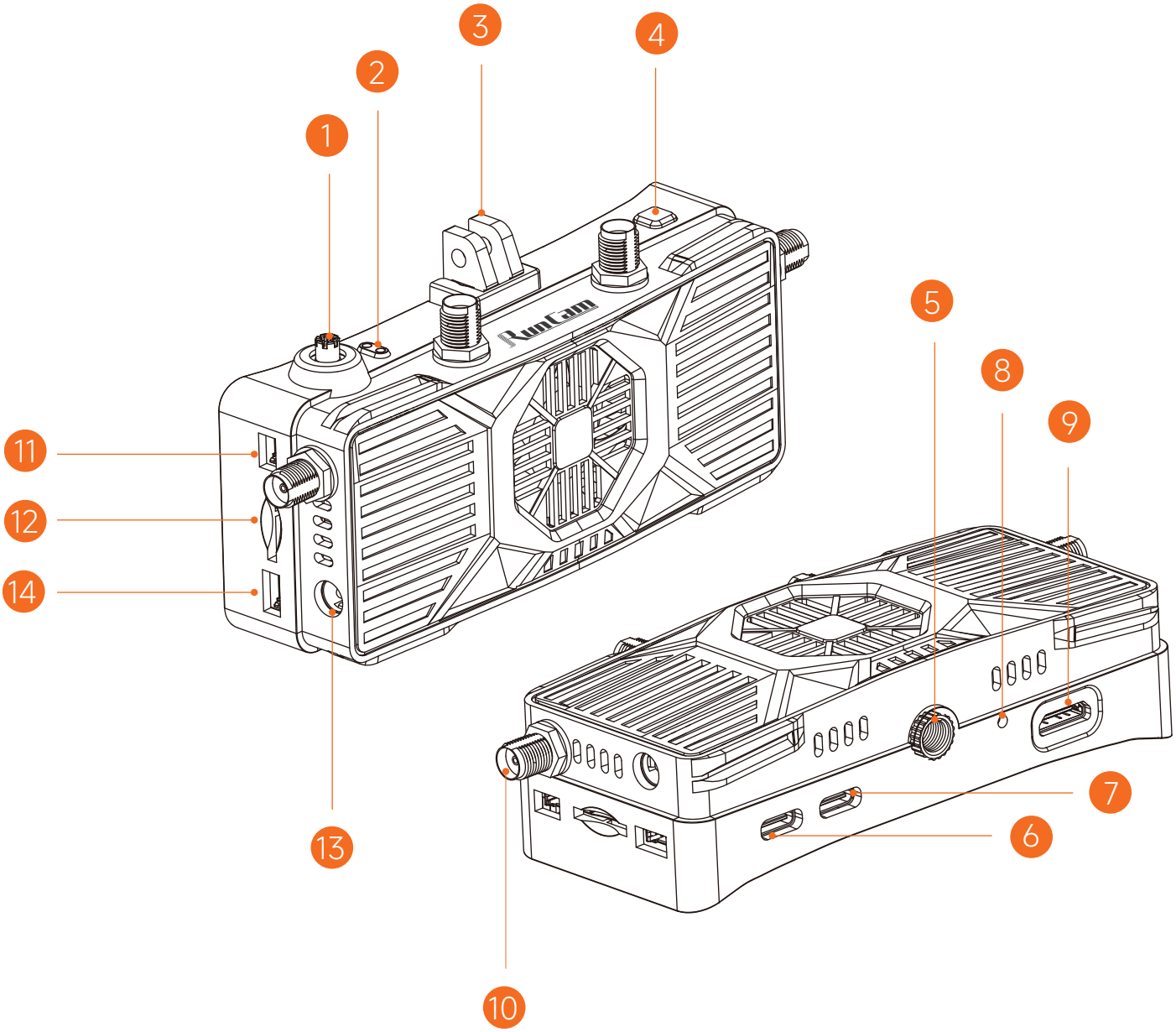
C. Installing Driver 09

D. Flashing the Image File 09

VIII. Frequently Asked Questions 13

WiFiLink-RX: Exporting Videos from Internal Storage 14

IX. Notes and Precautions 15



1. 5-way button
2. LED
3. Detachable mount
4. Record button
5. 1/4"threaded hole
6. OTG
7. Type-C
8. Flash button[1]
9. Mini-HDMI
10. SMA(inner pin)
11. UART expansion
12. Micro-SD slot
13. DC power input[2]
14. I2C expansion

[1]: Use a tool like SIM ejector pin or screwdriver to press.
[2]: Input power range: 9V ~ 30V.

Supports Ruby FPV or OpenIPC system. The default factory firmware is OpenIPC.

OpenIPC Interface Overview

Ruby FPV Interface Overview

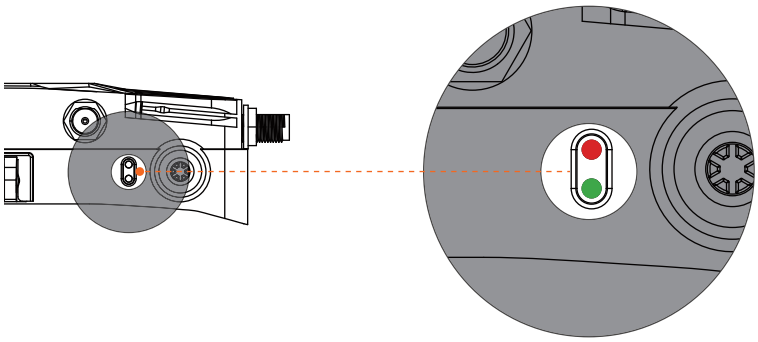
Model	WiFiLink-RX
Frequencies	5GHz
Transmission Power	<25dBm(FCC) <14dBm(CE) <20dBm(SRRC) <25dBm(MIC)
Interface	Mini-HDMI, Micro-SD, DC 5.5×2.1mm,Tpye-C
Mini-HDMI Output	1080P 60fps / 720P 60fps
Power Input	9~30V（3~6S）
MicroSD Card	Supports up to 256GB
Memory and Storage	1GB RAM + 32GB eMMC
System	Ruby FPV / OpenIPC
Dimensions	(L)110.0mm×(W)27.3mm×(H)46.0mm
Weight	122.0g（±1g） （antenna excluded）

Model	Stick Antennas
Polarization	Vertical Polarization（VP）
Frequencies	5150~5850 MHz
Average Gain	2.5dBi
Standing Wave Ratio (SWR)	<=2.0
Dimensions	(R)4.8mm×(H)108.4mm
Weight	6.6g

III.WiFiLink-RX Specifications

Model	Pagoda Antennas
Polarization	Left-Hand Circular Polarization（LHCP）
Frequencies	5500~5900 MHz
Average Gain	2.5dBi
Standing Wave Ratio (SWR)	<=2.0
Dimensions	(R)8.0mm×(H)23.9mm
Weight	4.4g

IV. LED Status Indicators



Green LED solid on: Wi-Fi is functioning normally

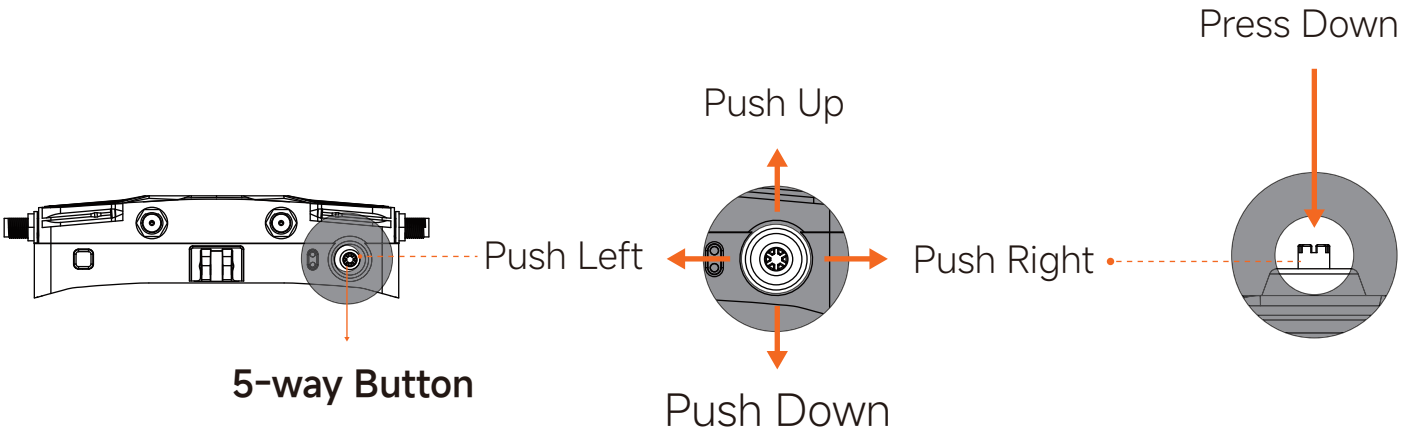
Green LED off: Wi-Fi malfunction

Red LED solid on: RX is powered

Red LED slow blinking: Recording in progress

Red LED fast blinking: Storage is full

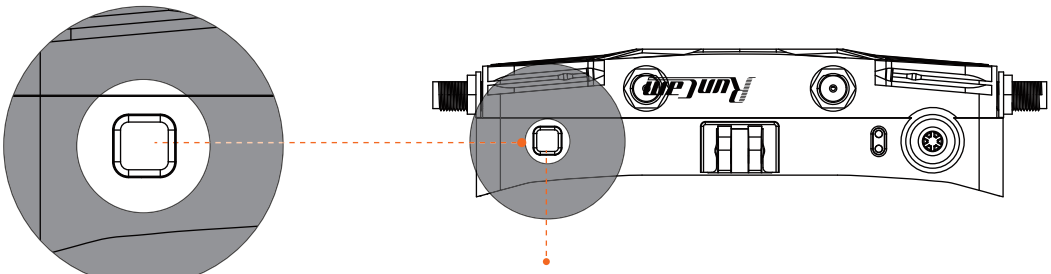
Red and green LEDs blinking alternately: High temperature warning



Ruby System: Push right to switch OSD interface. Press Down to confirm or open menu. Push up or down to navigate, and Push left to return to the previous menu.

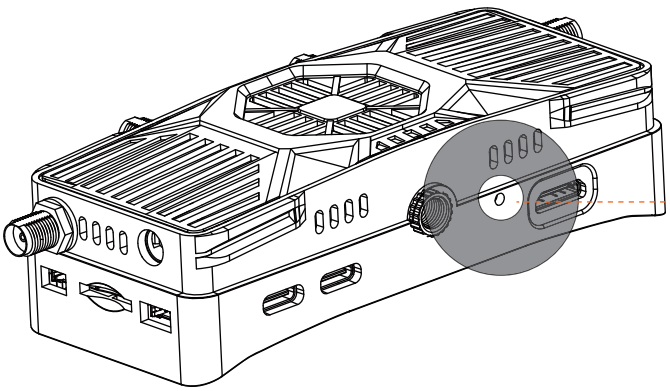
OpenIPC System: Push up or down to change frequencies. Push right to adjust bandwidth (20MHz / 40MHz).

(Note: The above button functions are based on Ruby FPV V10.7 / OpenIPC V1.9.8. Button behavior may differ in future firmware versions. Please refer to the actual system for the most accurate information.)



Record Button

Press to start or pause recording.



Flash Button

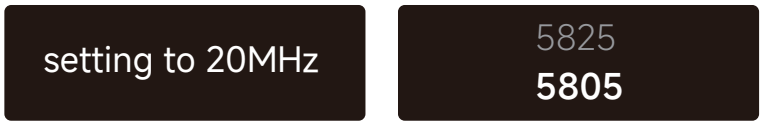
Press and hold the flash button, then connect DC power. After 2 seconds, release the button — the RX will enter flashing mode. At this point, connect the RX to a computer via Type-C, and begin the flashing process…

Demo Video URL

1. Install antennas for both WiFiLink 2 and WiFiLink-RX, then power both devices. Connect WiFiLink-RX to a display via HDMI cable.

WiFiLink 2 WiFiLink-RX Display Screen

2. Once the device has booted up, push the 5-Way Button to the right to set the bandwidth to 20MHz, then push up/down to adjust the frequency to 5805MHz (this is the default frequency).



3. Wait about 10 seconds. Once the connection is established, the video feed will be displayed.

Note: Flashing the system will erase all files on the WiFiLink-RX's internal storage (eMMC) and TF card. Please back up important data in advance.

A. Obtaining the System Image file

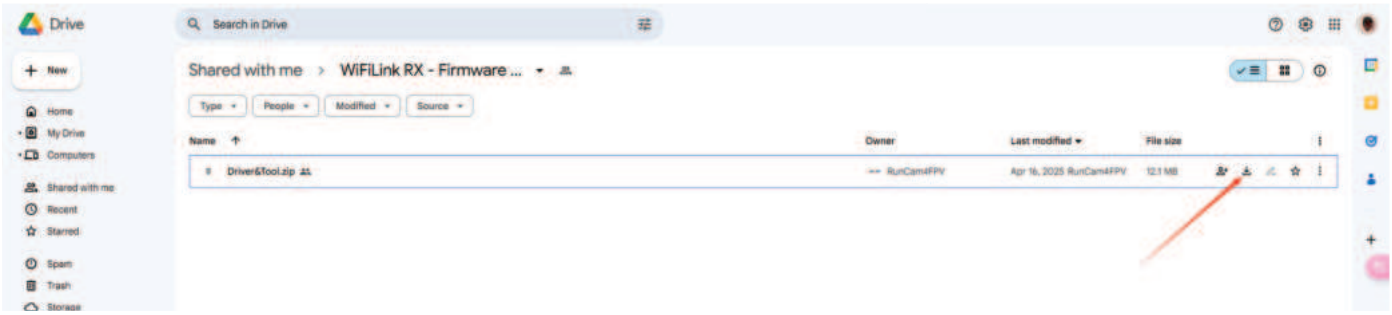
1. Open the link below, select the target version, and locate the image file with the .img.xz extension.
https://github.com/OpenIPC/sbc-groundstations/releases

2.Extract the downloaded compressed file to obtain a system image file.

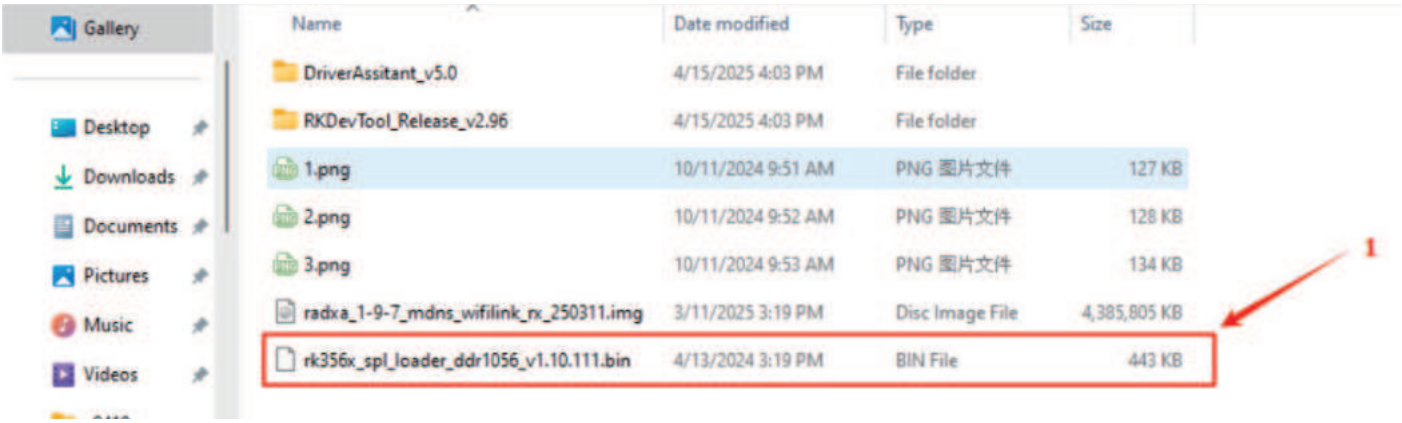
https://flowus.cn/share/9a06aa6f-9c0a-43a8-95e8-a50953f72480?code=ADWFHZ

B. Flashing Software

1.Click the link below to download the compressed Driver&Tool compressed file.
GoogleDrive:
https://drive.google.com/drive/folders/1moljMrfbCeSgvW7LQA1RAOpFrKZshpGl?usp=sharing

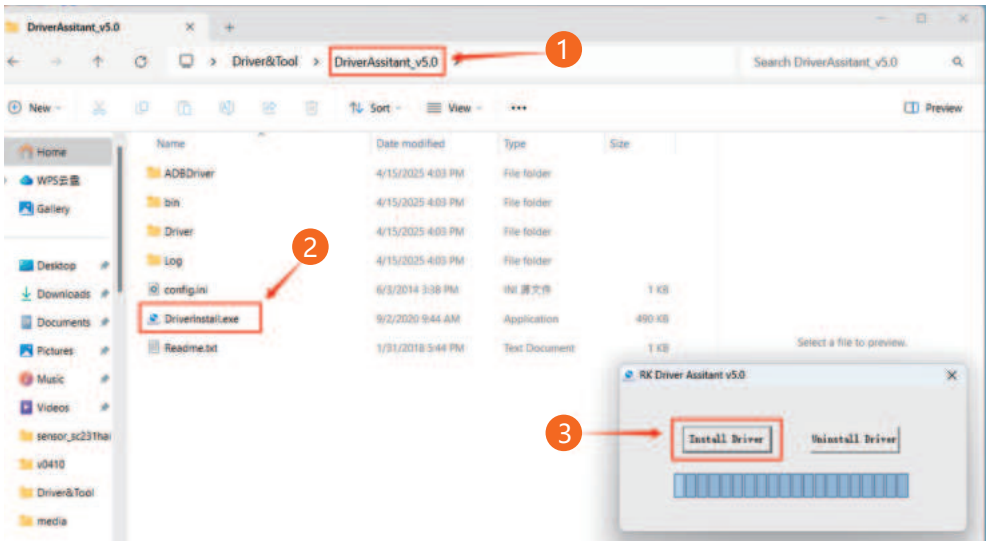


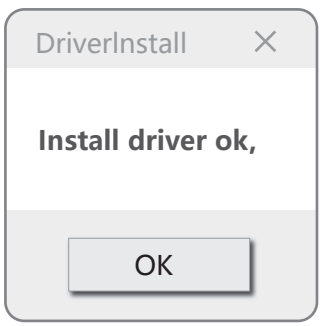
2.Extract the downloaded compressed file, to obtain flashing software and driver.



C. Installing Driver

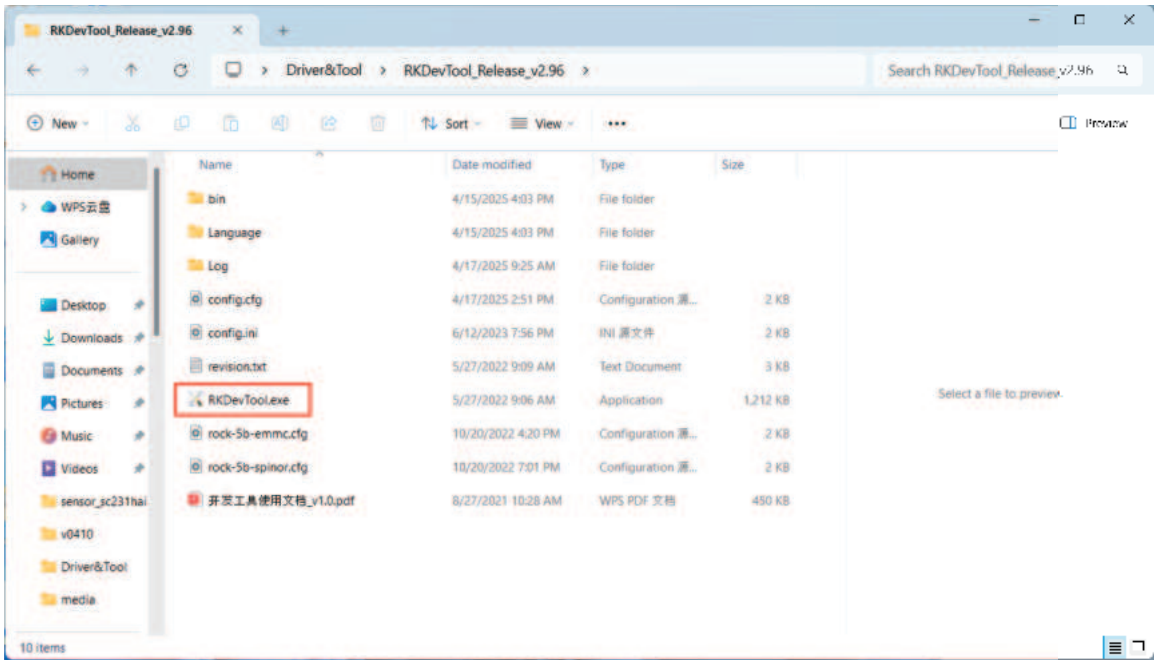
1. Open DriverAssistant_v5.0 folder, find and double click DriverInstall.exe to execute it. Click Install to continue. It takes a few seconds to finish.



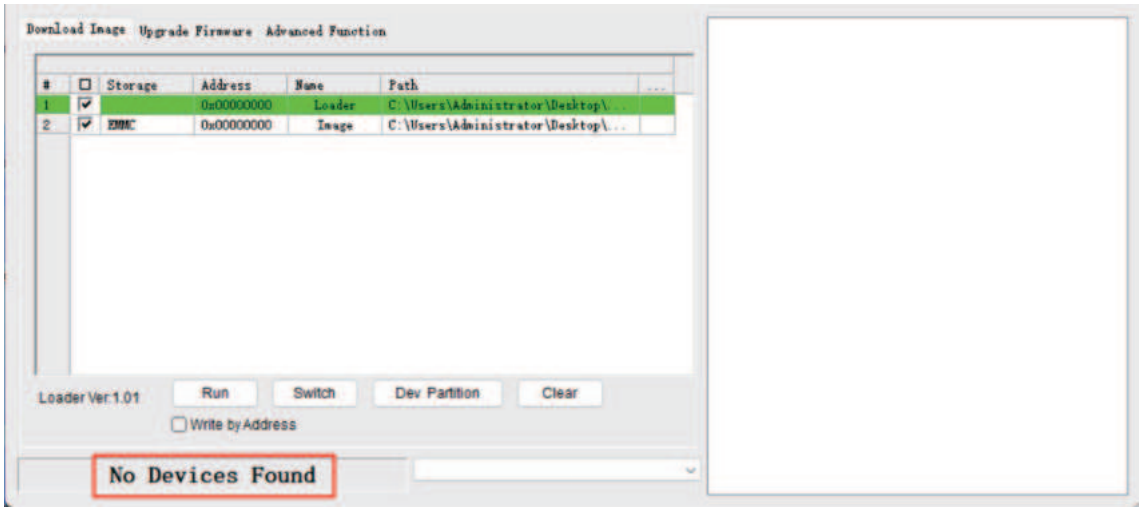


D. Flashing System Image File

1. Open the RKDevTool_Release_v2.96 folder and locate the RKDevTool.exe file. Double-click to execute it.



2.Since the WiFiLink-RX is not yet connected to the computer, the RKDevTool flashing tool will display “No devices found” in the lower-left corner.

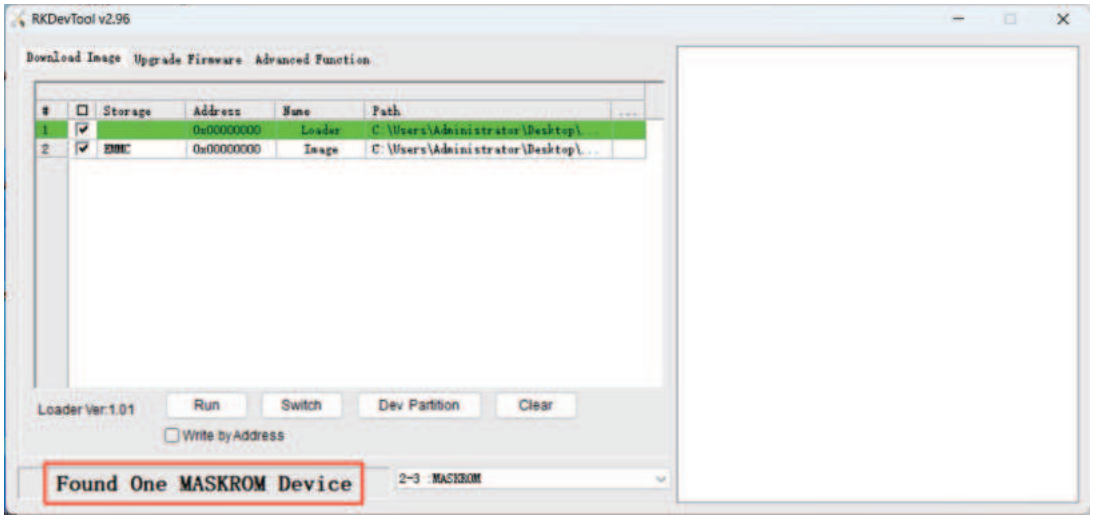


3. Make sure the WiFiLink-RX is properly connected to the antenna, and that the TF card is removed (to prevent data loss).

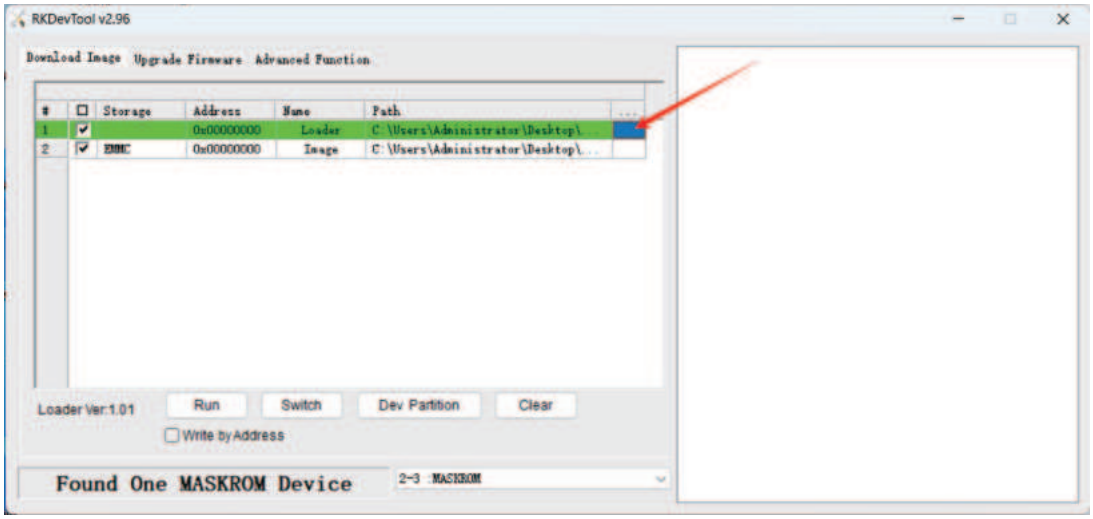
4.Use a SIM eject tool or a small screwdriver to press and hold the flash button, then connect DC power. Wait for 2 seconds, then release the button.

5. Connect the WiFiLink-RX to the computer via Type-C data cable.

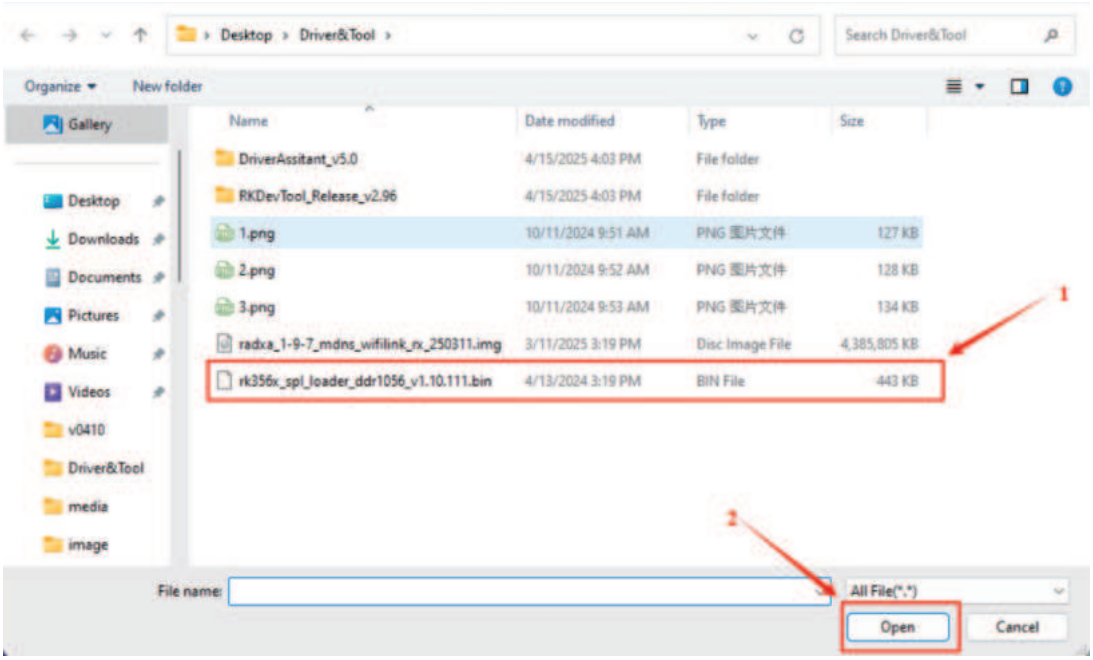
6.If the previous steps were completed correctly, the WiFiLink-RX will enter flashing mode. The flashing tool will display “One MASKROM device found” on the interface.



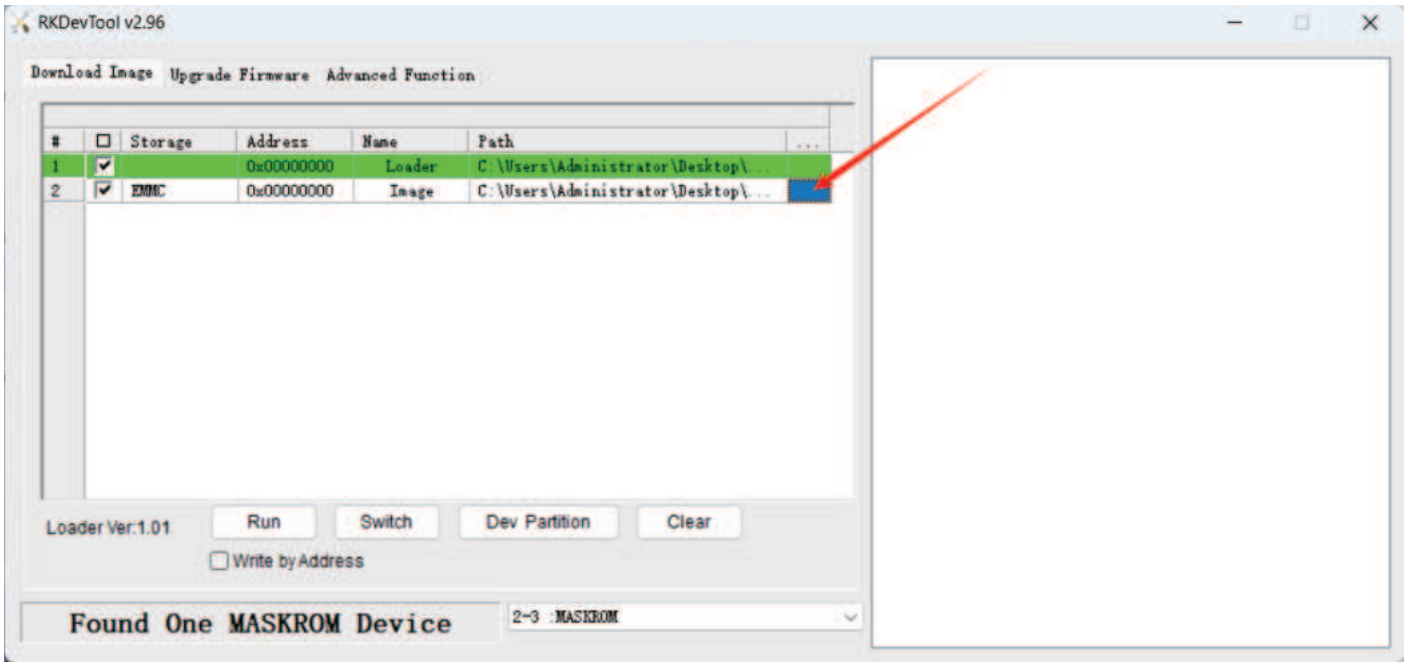
7. When RX enters a flashing mode (MASKROM available), the paths for Loader and Image need to be changed. Click the area shown in the image below to select the “Loader” file.



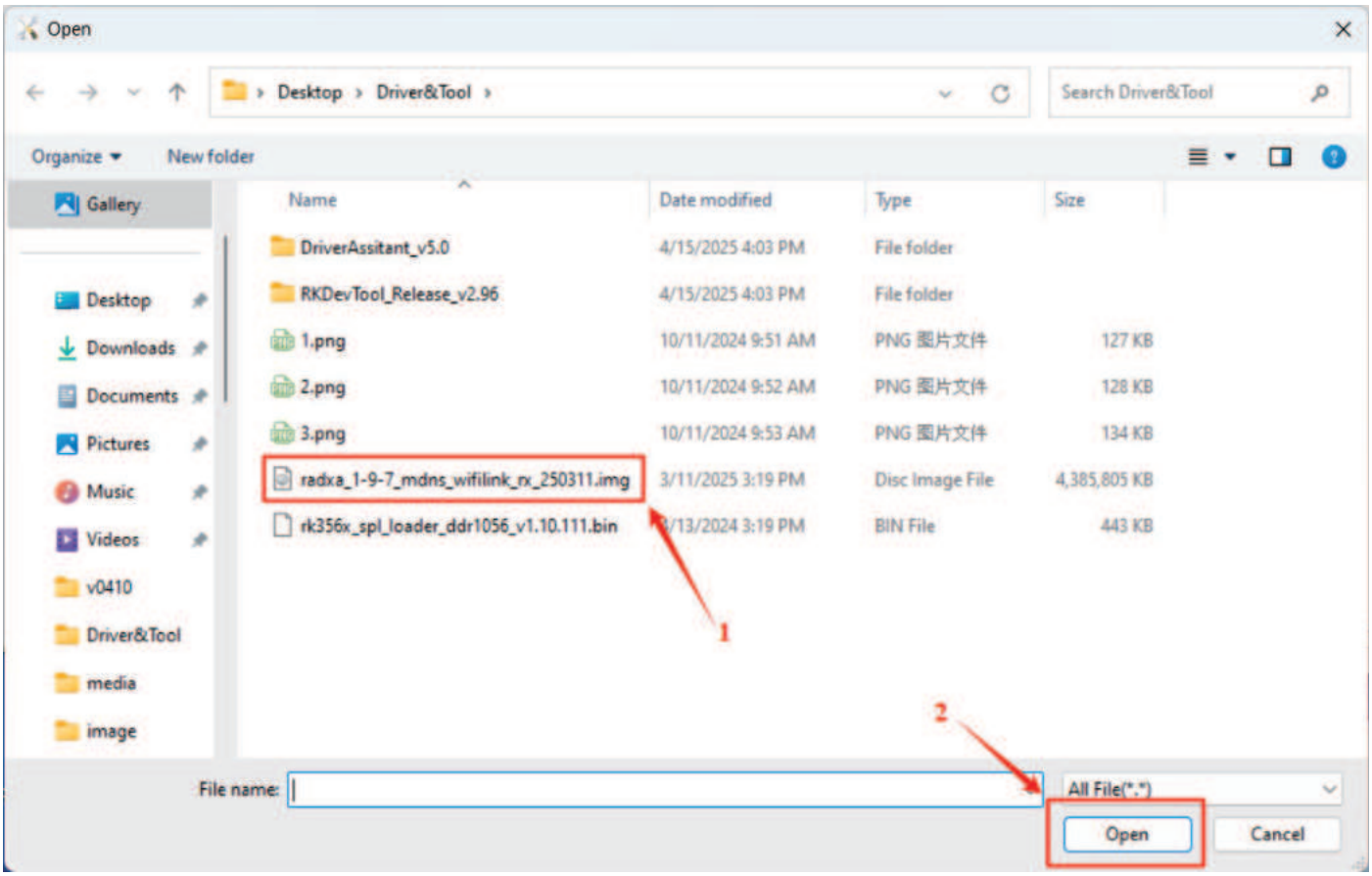
8.Locate Drive&Tool folder and select rk356x_spl_loader_ddr1056_v1.10.111.bin to open.



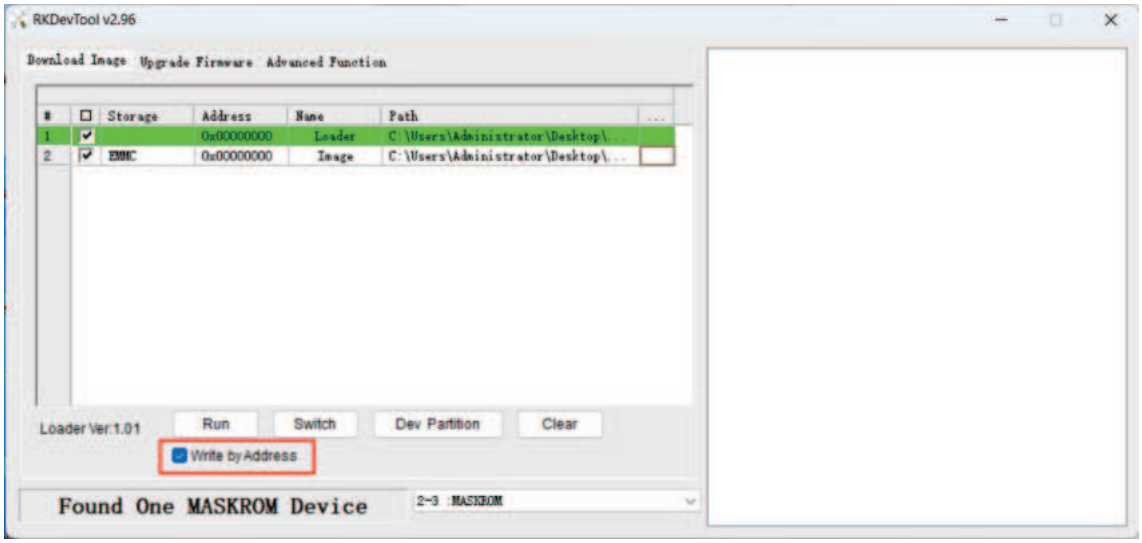
9.Click the area for Image as well.



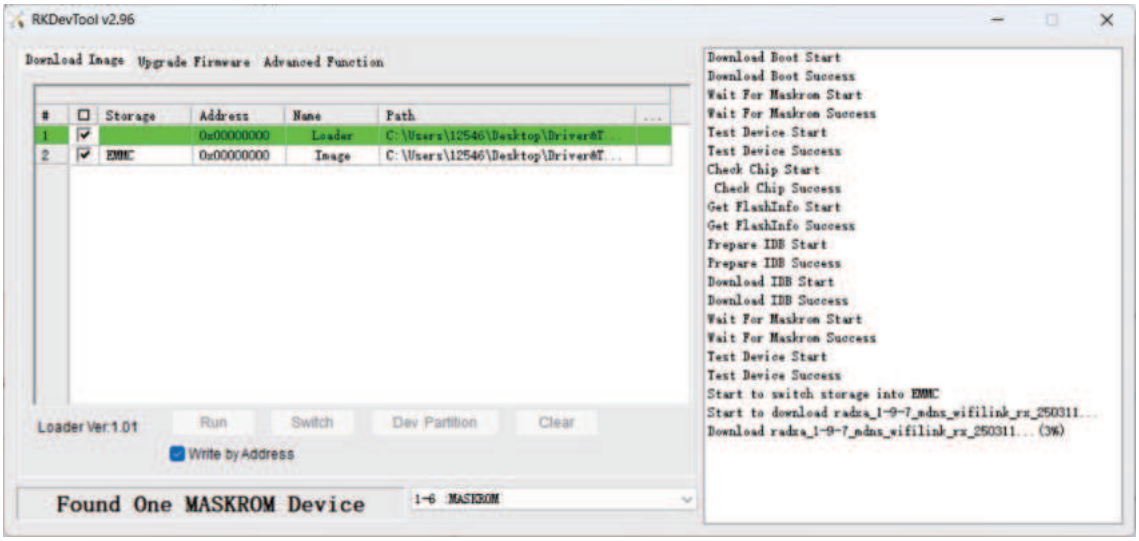
10.Select the system image file to be flashed, then click “Open.” (In this example, version 1.9.8 is used.)



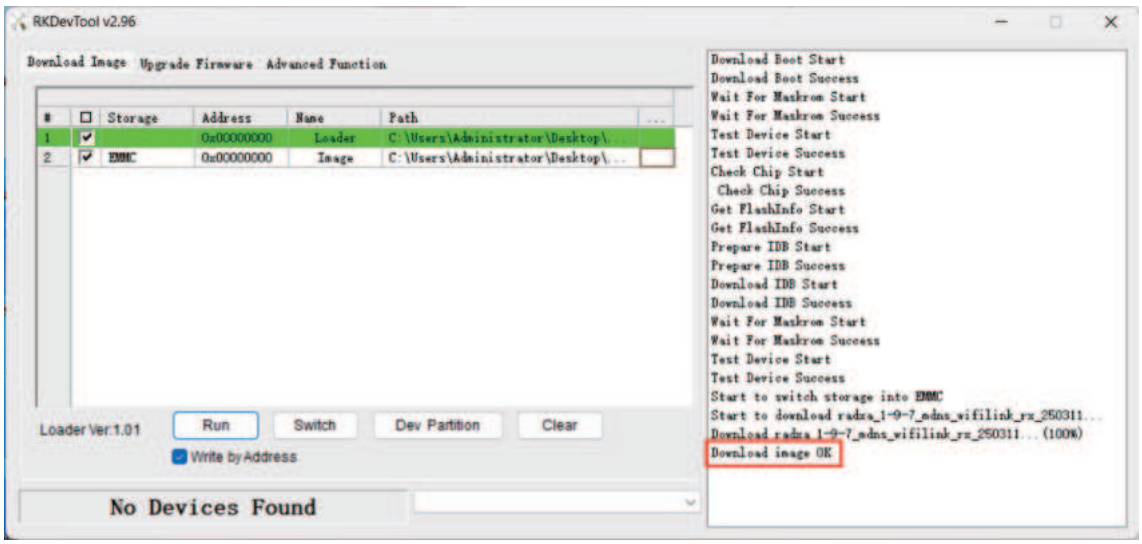
11.After selecting the paths for both Loader and Image, please must tick Write by address.



12.Click to execute, and the tool will start flashing the firmware for WiFiLink RX.



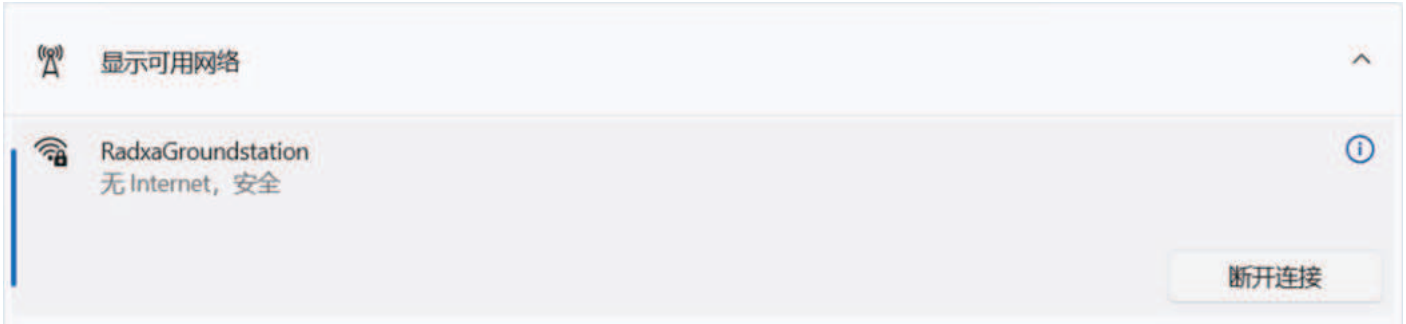
13.It takes about two minutes to finish flashing.



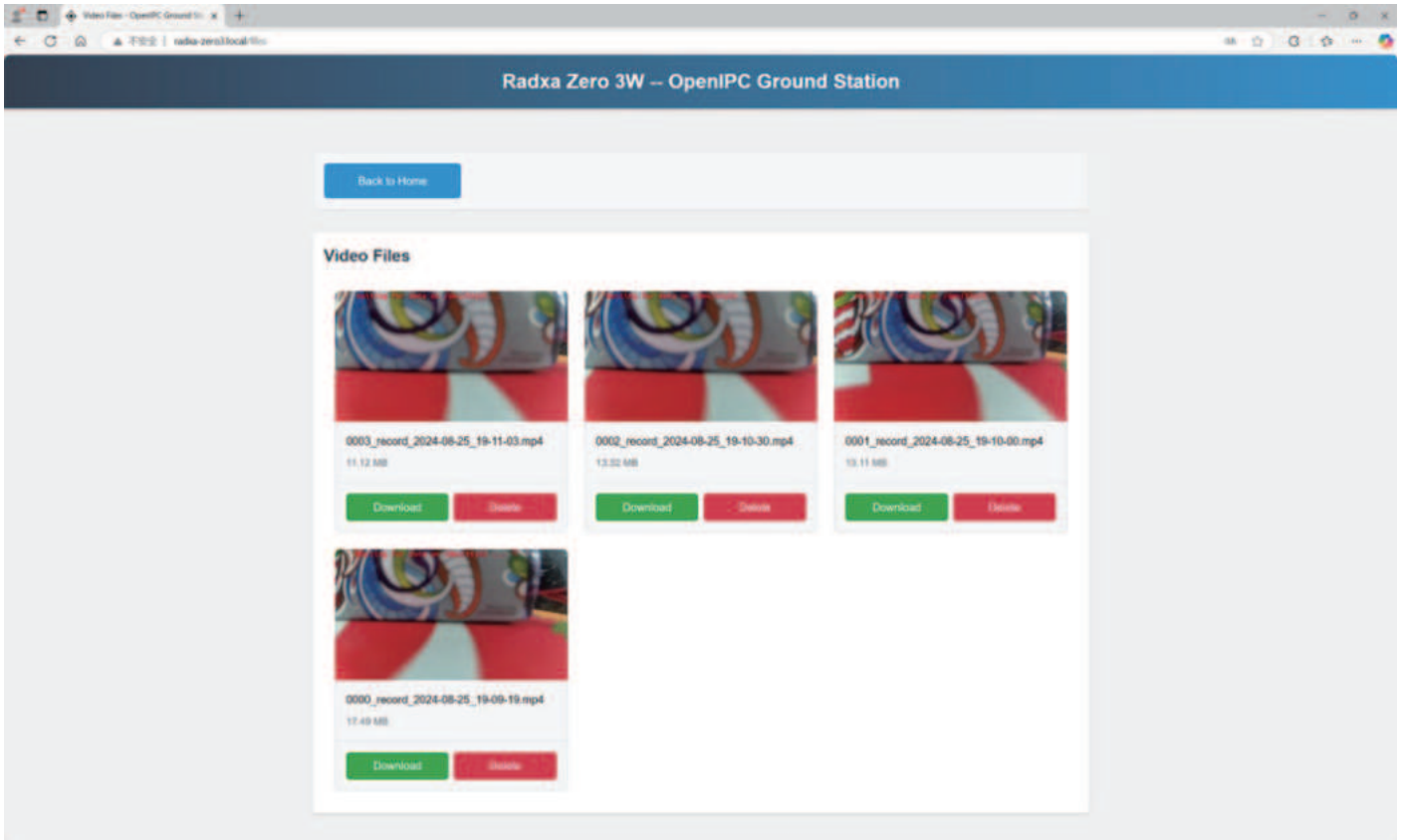
WiFiLink-RX: Exporting Videos from Internal Storage

Note: This feature is available only on version 1.9.7 or later.

1. After installing the antennas on WiFiLink RX, power on the device. Once the system has fully booted, hold the 5-Way Button to the right for 5 seconds to enter AP Mode (hotspot mode). Connect to the Wi-Fi hotspot named “RadxaGroundstation”, with the password “radxaopenipc”.



2. Open a browser and go to radxa-zero3.local to access the OpenIPC WebUI (browsing video files and adjusting ground station and camera settings are available here), click “View Video Files” to see the video list, and click “Download” to download videos. (If a TF card is inserted, files stored on the TF card will also appear here.)



1. Before powering on, please ensure all antennas are properly installed to avoid damage to components.

2、Please confirm that the display supports the set resolution and frame rate; otherwise, it may cause display issues.

3、If using with other 5.8G devices, please select a different frequency channel.

4、If you experience choppy video, it may be due to interference from other 5.8G devices. Try switching to a different frequency channel to resolve this issue.

5、Before using this product, please ensure you fully understand and comply with local laws and regulations.