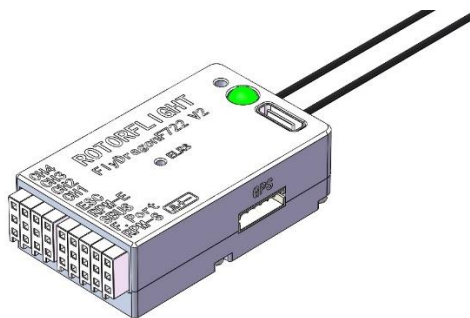# FlyDragonF722 v2 FBL ELRS Receiver Manual_20231231

The Boot Button:

The boot button on top has two functions:

- **FC Firmware Update Mode (DFU):** While power is disconnected, hold the boot button, and then connect USB cable enables DFU mode for updating firmware.

- **Receiver Firmware Update Mode:** While the transmitter is disconnected, power the FC and hold the boot button until the receiver LED stays on. This enables the receiver firmware update mode.

- **Receiver Bind Mode:** Power the FC and press the boot button once. The receiver LED would turn off and then turn back on. Continue pressing the button 2 more times. Make sure the receiver LED doing **quick double-blink**. Which indicates ELRS binding mode.

How to Bind:

- **Create New Model:** Copy **Heli.yml** file in **7.TX16S 遥控器\模型文件模板** from the online drive into **TEMPLATES** -> **PERSONAL** folder on the TX16S SD card. Long press **MDL** button, click New Model -> PERSONAL -> Heli. Please refer to **模板说明.txt** for the channel mapping information.

- **Lua Script:** Copy **elrsV3.lua** in **10.ELRS 接收机\固件与脚本\固件\3.2.1** from the online drive into **SCRIPTS** -> **TOOLS** on the TX16S SD card.

- **Bind:** Make sure the receiver is in bind mode following the instructions above. Press **SYS** button on the transmitter, under TOOLS page, press ExpressLRS. (If you are using the ExpressLRS script for the first time, it would take a few seconds to compile. Simply press the ExpressLRS button again)
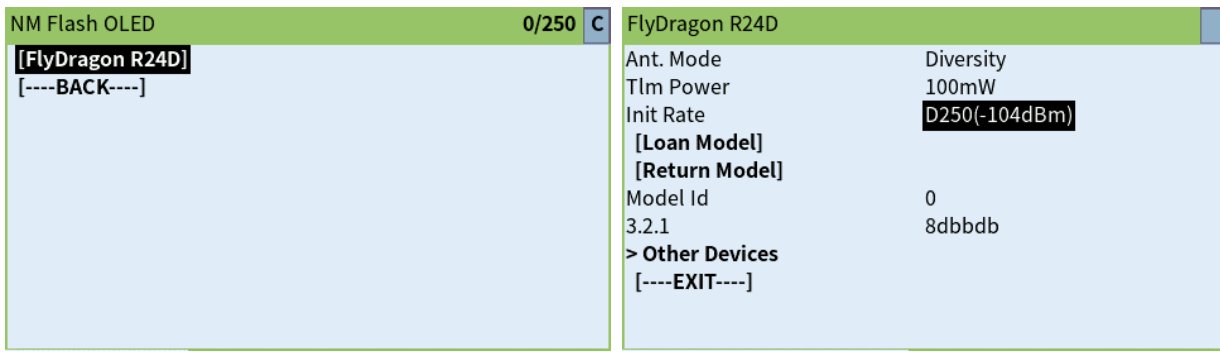

Recommended settings for TX: Packet Rate = D250 Hz, Telem Ratio = 1:64，Switch Mode = Wide，TX Power = 100mW. Click **[Bind]** to start binding.Click **RTN** button to refresh. If successful, **Other Devices** menu would appear.

Click **Other Devices** to enter RX menu.

NM Flash OLED	0/250 C
[FlyDragon R24D]	
[----BACK----]	

FlyDragon R24D	
Ant. Mode	Diversity
Tlm Power	100mW
Init Rate	D250(-104dBm)
[Loan Model]	
[Return Model]	
Model Id	0
3.2.1	8dbbdb
> Other Devices	
[----EXIT----]	

Setup the RX menu as shown above. Make sure the Init Rate corresponds to the TX Packet Rate.

Click **Other Devices** to go back to the TX menu. Set Model Match to **On**.

| NM Flash OLED	0/250 C
Packet Rate	D250(-104dBm)
Telem Ratio	1:64 (78bps)
Switch Mode	Wide
Model Match	On (ID: 0)
> TX Power (100mW)	
> VTX Administrator	
> WiFi Connectivity	
> Backpack	
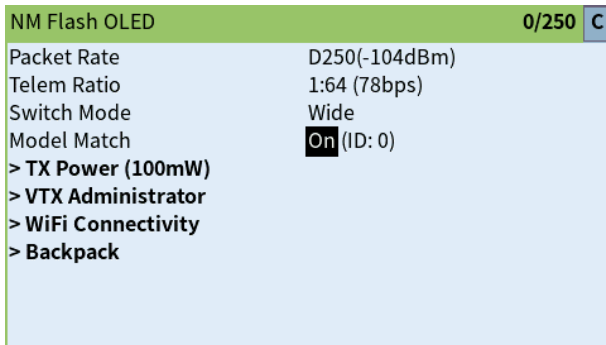
Long press **RTN** button to exit Lua script. Power cycle the FBL and make sure the ELRS receiver LED stays on, indicating a successful bind. This concludes the binding process.

How to Flash Receiver Firmware:

There are three methods to flash receiver firmware: UART, WiFi, and BF/RF Passthrough.

- **UART:** Use serial port of the receiver to flash firmware. This is applicable to external receivers.

- **WiFi:** The receiver has a WiFi mode, which acts like a WiFi hotspot. When connecting to it, under 10.0.0.1 address, one could upload firmware directly into the receiver. This is also typically applicable to external receivers. Because the FlyDragon V2 FBL has an aluminum case, WiFi signal is blocked. Therefore, WiFi mode is turned off by default.

- **BF/RF Passthrough:** The firmware is passed through from Rotorflight into the receiver. This method is among the most stable and easy-to-use methods. We will be introducing it below.

- **Download Configurator:** One simple way to flash ELRS receiver is by using **flash_download_tool** to pre-compiled firmware.

- **How to Use flash_download_tool：**

  - Open **Rotorflight Configurator**, connect the FB, and go to the CLI (command line) page:
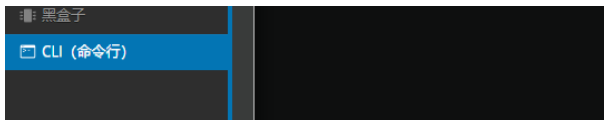
 - Type **serialpassthrough 0 0 rxtx none** and click **Enter.** Then, close the **Rotorflight Configurator**.

  ```
  serialpassthrough 0 0 rxtx none
  ```
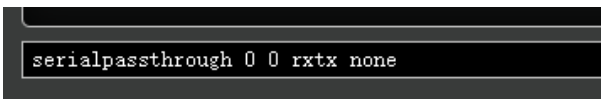
  - From the **10.ELRS 接收机\固件下载软件** folder on the drive, unzip **flash_download_tool_3.9.5_0.zip**, double click **flash_download_tool_3.9.5.exe** to launch **flash_download_tool**. In the menu, select ESP8285 for ChipType and click OK.
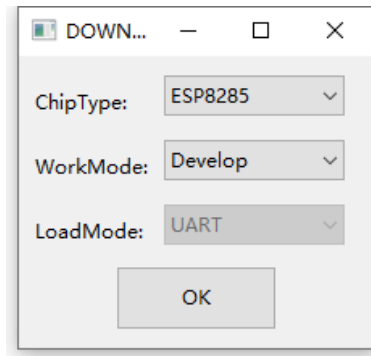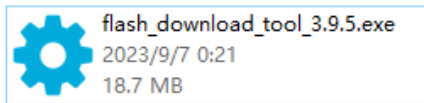
➤ Open the **FlyDragon R24D v3.2.1_8dbbdb.bin** firmware file under **10.ELRS 接收机\固件与脚本\3.2.,** use address **0** as shown below:
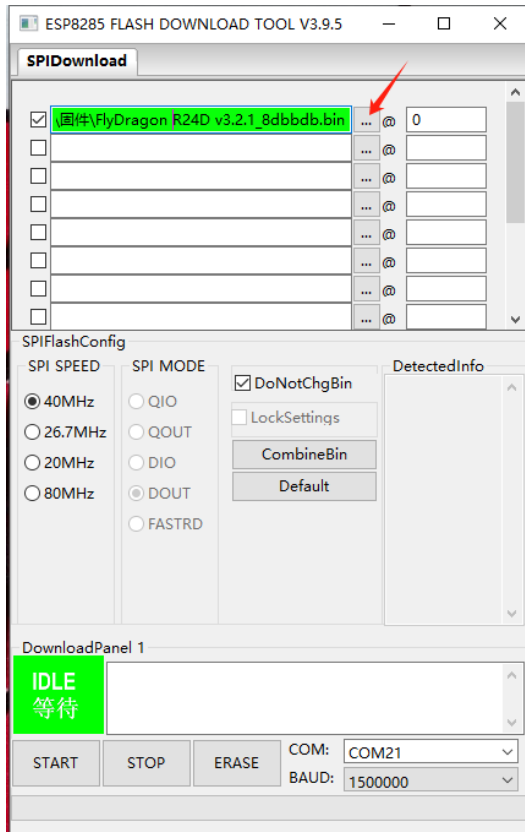

➤ Setup everything following the example above. You may want to open device manager on your computer to check the port number for the FBL. For example, the FBL is currently connected to **COM7** (image below)
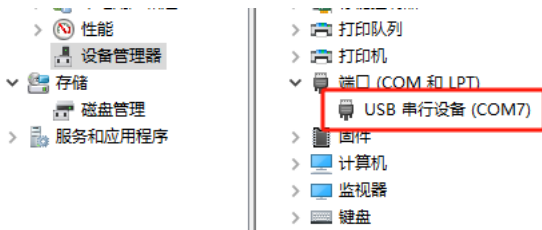
➤ Go back to **flash_download_tool**, and select corresponding port number (here it is **COM7**), and click **START**.
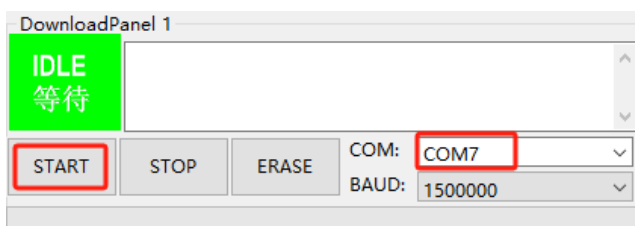
➤ Make sure the transmitter is off. Hold **boot** button until the ELRS receiver LED stays on. Meaning that the receiver begins to update its firmware. (If the firmware fails to update, try click **STOP**, then click **START**.)
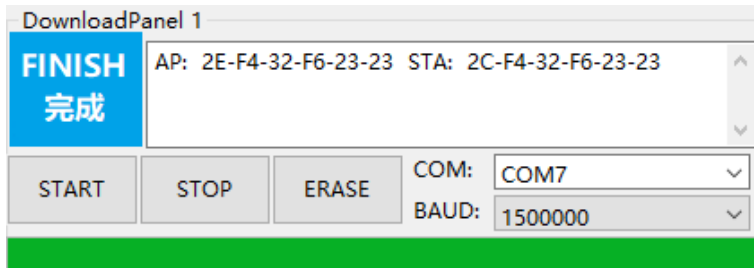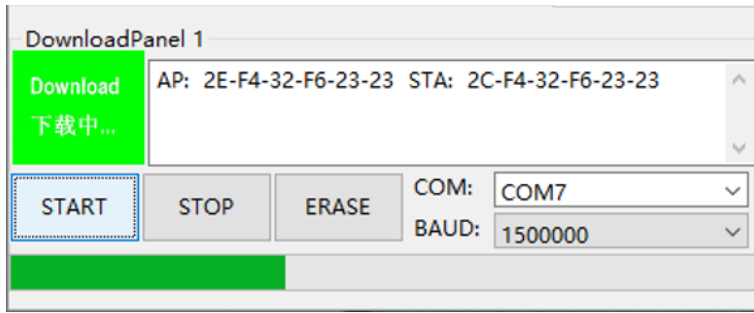
> ➢ The firmware should be updated if everything is done correctly. You should then unplug the USB cable, reboot the FBL to bind again.
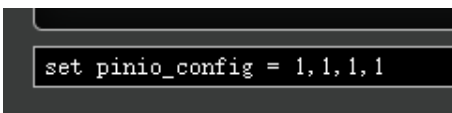
How to Enable/Disable the Internal Receiver:

■ The internal receiver is default turned on. When using external receivers, we need to turn it off. Connect the Flydragon F722 V2 to the **Rotorflight Configurator.** Go to CLI (command line) page:

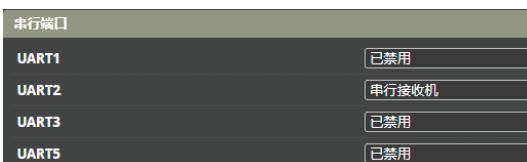■ **Command to enable the receiver:** set pinio_config = 129,1,1,1

■ **Command to disable the receiver:** set pinio_config = 1,1,1,1

Type **save,** and press **Enter** to save any changes.

■ **Changing UART:** The internal receiver uses UART1. When using external receivers, we need to select a different UART port for **Serial Rx**. For example, if the user wants to use SBUS or F.Port port, the Serial Rx should be on UART2 as shown below:

UART1 = Disabled, UART2 = Serial Rx