



ER16

Instruction Manual



ELRS 2.4G 16-Channel Receiver

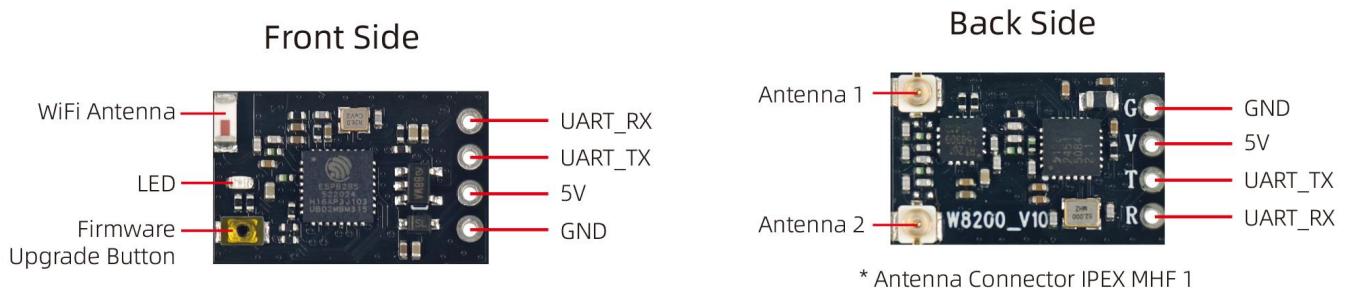
Contents

1. Introduction	2
2. Specifications	2
3. LED Indication	2
4. Binding	2
5. Configure Betaflight Flight Controller	3
6. Configure APM Flight Controller	4
7. Upgrade Firmware	4

1. Introduction

RadioLink ER16 receiver is a 2.4G remote control system receiver developed based on the open-source project ExpressLRS. It is compatible with ExpressLRS 2.4G modules and transmitters. It employs LoRa modulation technology, and features high receiving sensitivity, strong anti-interference capabilities, and long range. It operates in the globally free 2.4G frequency band.

The GitHub address: <https://github.com/ExpressLRS/ExpressLRS>



2. Specifications

- Dimension: 20x12.5mm
- Weight: 1.2g
- Working Voltage: 4-9V
- Frequency Band: 2.4GHz ISM
- Telemetry Power: 22dBm
- Antenna Connector: Dual IPEX MHF 1
- Output Protocol: CRSF
- Compatible Transmitters: All transmitters compatible with 2.4GHz ExpressLRS modules

3. LED Indication

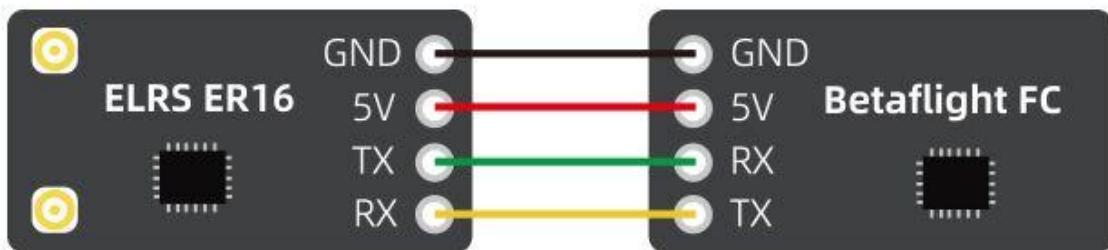
- Solid on: Binding successfully/Transmission signal received
- Flash double quickly: Binding status
- Flash slowly: No transmission signal received
- Flash fast: WiFi upgrade status

4. Binding

- (1) Power on ER16 receiver three times consecutively, with a power-up interval of less than 1.5 seconds.
- (2) The indicator light of the receiver will flash twice, indicating it has entered the binding status.
- (3) Press the BIND button on the ExpressLRS remote control (transmitter or module).
- (4) The indicator light of the receiver will turn solid, indicating successful binding.
- (5) After successful binding, the program will record the paired remote control device. The next power-on will restore the last binding record. No need to bind them every time the receiver is powered on.

5. Configure Betaflight Flight Controller

(1) Connect ER16 to any serial port of the Betaflight flight controller. (Take UART6 as an example to show the settings):



(2) Connect the flight controller to the computer. Open Betaflight Configurator and connect. Click Ports menu and enable Serial RX of UART6.

The screenshot shows the Betaflight Configurator software interface. The left sidebar has tabs for Setup, Ports (which is selected), Configuration, Power & Battery, Failsafe, Presets, PID Tuning, Receiver, Modes, Adjustments, Motors, and OSD. The main area is titled 'Ports'. It contains a note about valid combinations and a warning about VTX table setup. A table lists serial ports with their identifiers, configuration, serial rx status, and telemetry output. The 'Serial Rx' column for 'UART6' is highlighted with a red box.

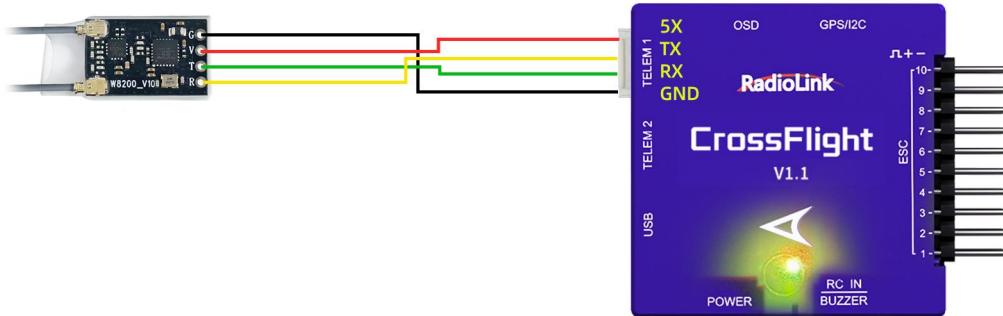
Identifier	Configuration/MSP	Serial Rx	Telemetry Output
USB VCP	115200	<input type="checkbox"/>	Disabled AUTO
UART1	115200	<input type="checkbox"/>	Disabled AUTO
UART2	115200	<input type="checkbox"/>	Disabled AUTO
UART3	115200	<input type="checkbox"/>	Disabled AUTO
UART4	115200	<input type="checkbox"/>	Disabled AUTO
UART6	115200	<input checked="" type="checkbox"/>	Disabled AUTO

(3) Click Receiver menu. Select Serial (via UART) for receiver mode, and set CRSF for serial receiver provider.

The screenshot shows the 'Receiver' tab in the Betaflight Configurator. The 'Receiver Mode' dropdown is set to 'Serial (via UART)' and is highlighted with a red box. Below it, a note says 'The UART for the receiver must be set to 'Serial Rx' (in the Ports tab)'. The 'Serial Receiver Provider' dropdown is set to 'CRSF' and is also highlighted with a red box.

6. Configure APM Flight Controller

(1) Connect ER16 to the TELEM1 port of the APM flight controller. The following example uses the TELEM1 port of the Radiolink CrossFlight flight controller:



(2) Connect CrossFlight flight controller to the computer and set the following 3 parameters in Mission Planner:

Set SERIAL1_BAUD to 115
Set SERIAL1_OPTIONS to 0
Set SERIAL1_PROTOCOL to 23

7. Upgrade Firmware

This example uses the method of downloading the officially released firmware and then using ELRS to compile the firmware. **The default firmware version is ExpressLRS-3.3.**

(1) Download the official ELRS firmware. You can use the latest version or choose an older one. It is best to keep the version of the transmitter and the receiver the same. Inconsistencies may cause malfunctions. Here is the link to download the firmware:

<https://github.com/ExpressLRS/ExpressLRS/releases>

Releases · ExpressLRS/ExpressLRS · +

https://github.com/ExpressLRS/ExpressLRS/releases

Product Solutions Open Source Pricing

ExpressLRS / ExpressLRS (Public)

Code Issues 20 Pull requests 8 Discussions Actions Projects Wiki Security Insights

Releases Tags

Find a release

Apr 3

wvarty

3.2.1

8dbbdbe

Compare

ExpressLRS V3.2.1 Latest

Getting Started 3.0 Documentation

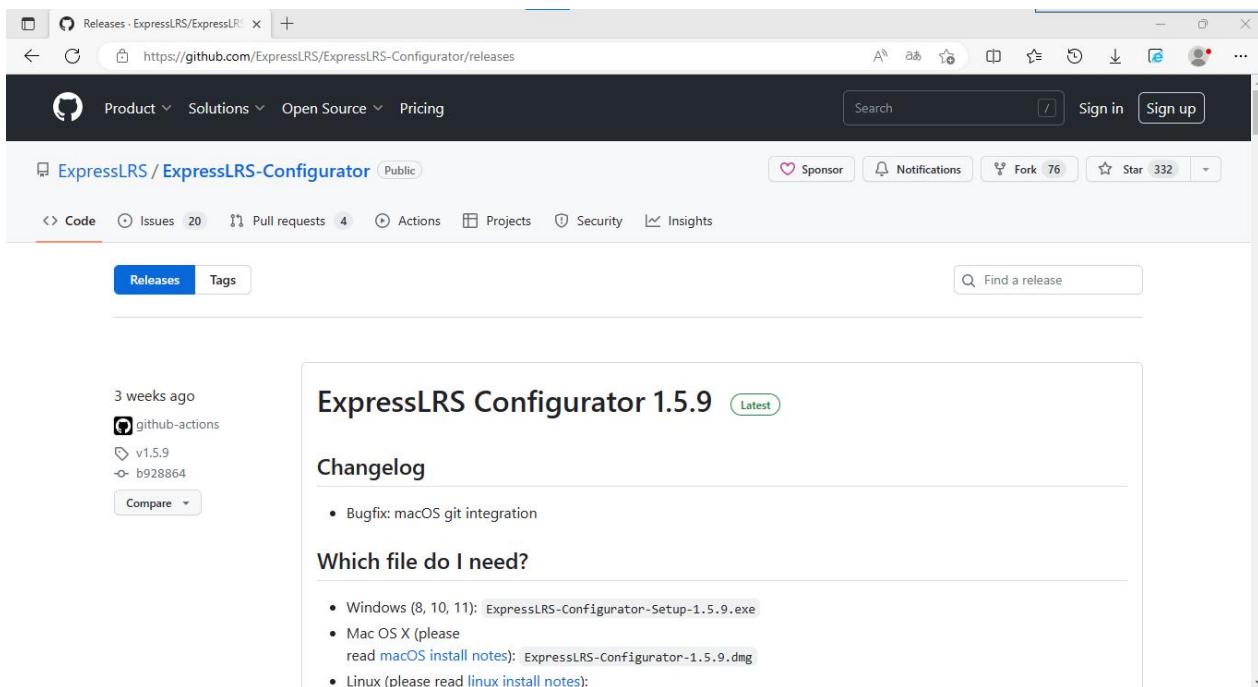
The important stuff

- Arming must be on AUX1 for safety and feature reasons, having this fixed allows us to maintain small packet sizes and deliver better aux channel options
- Be sure to flash both the TX and RX.
- Lua script MUST be updated to elrsV3.lua and is backwards compatible with 2.x. Get it here: [Lua](#)

Compatibility

(2) Download ExpressLRS Configurator tool. Download the appropriate tool based on your computer system. Here is the download link:

<https://github.com/ExpressLRS/ExpressLRS-Configurator/releases>



3 weeks ago

ExpressLRS / ExpressLRS-Configurator (Public)

Releases Tags

Find a release

ExpressLRS Configurator 1.5.9 (Latest)

Changelog

- Bugfix: macOS git integration

Which file do I need?

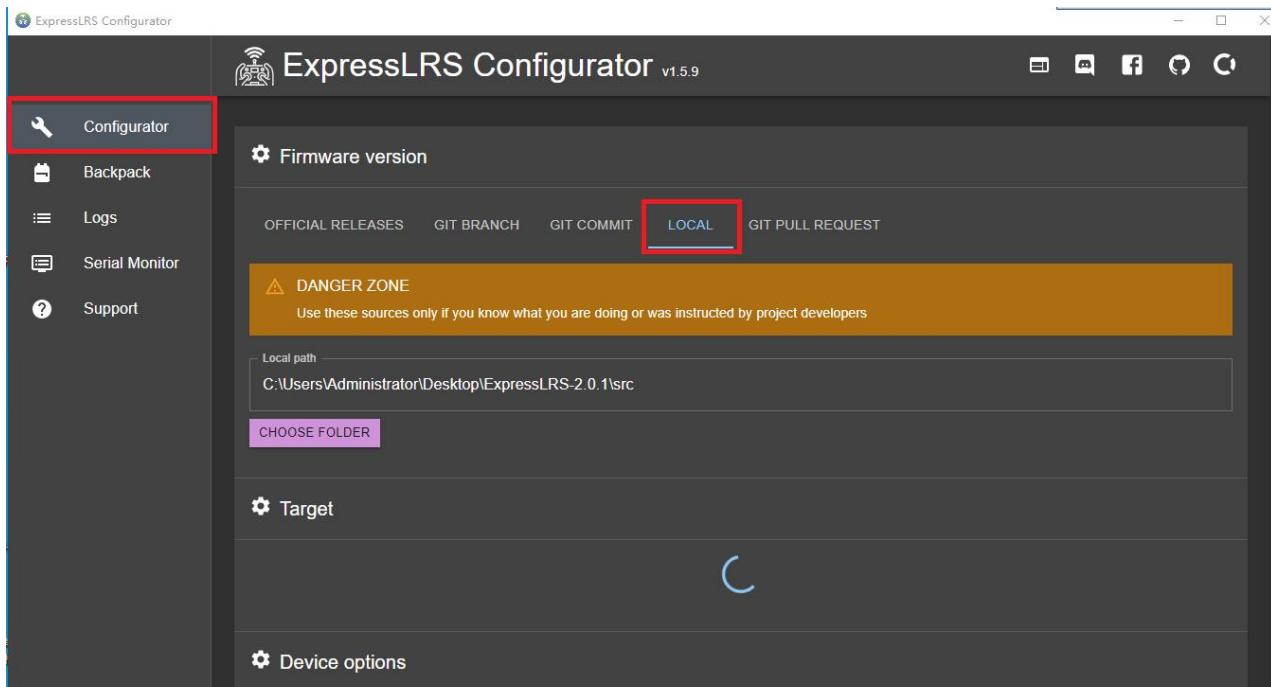
- Windows (8, 10, 11): ExpressLRS-Configurator-Setup-1.5.9.exe
- Mac OS X (please read macOS install notes): ExpressLRS-Configurator-1.5.9.dmg
- Linux (please read linux install notes):

(3) Install ExpressLRS Configurator.

(4) Prepare a USB to UART TTL adapter cable (as shown on the right). Please note that the adapter cable needs to be cross-connected to the T and R pin of the receiver.



(5) Open ExpressLRS Configurator. Select Configurator -- click LOCAL, and use offline local compilation.



Configurator

Backpack

Logs

Serial Monitor

Support

Configurator v1.5.9

Firmware version

OFFICIAL RELEASES GIT BRANCH GIT COMMIT LOCAL GIT PULL REQUEST

DANGER ZONE

Use these sources only if you know what you are doing or was instructed by project developers

Local path

C:\Users\Administrator\Desktop\ExpressLRS-2.0.1\src

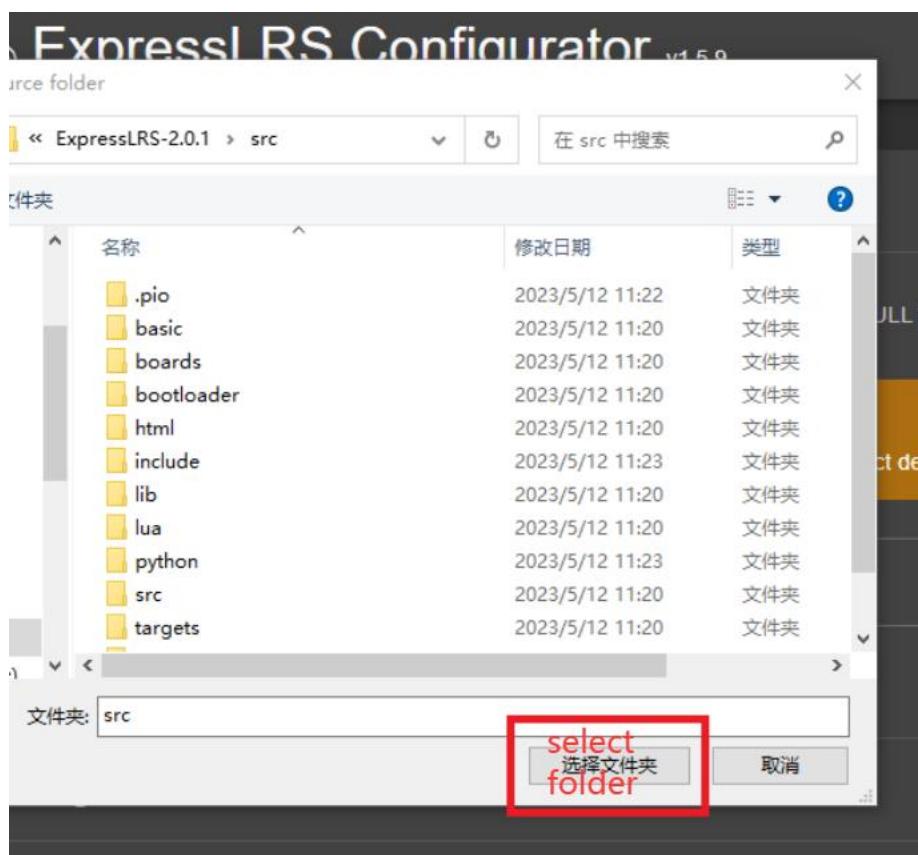
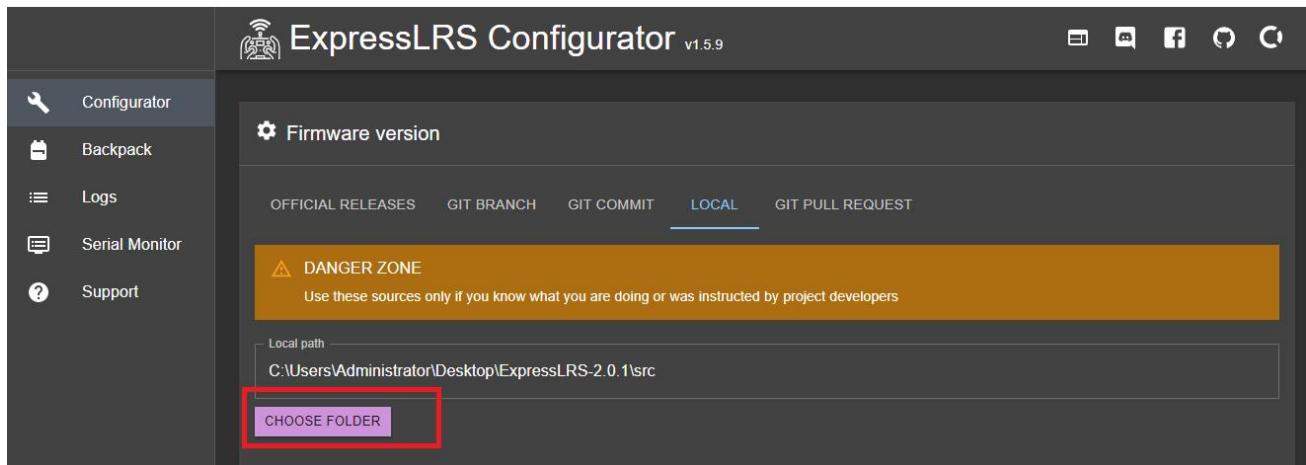
CHOOSE FOLDER

Target

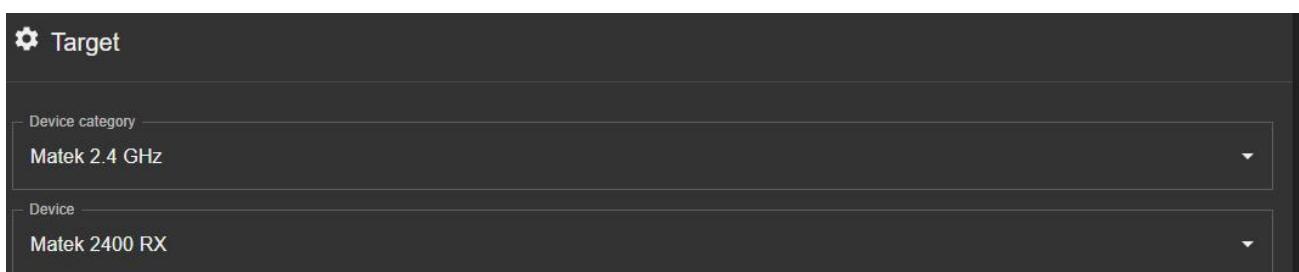
Device options

(6) Unzip the firmware downloaded. We use ExpressLRS-2.0.1 as an example.

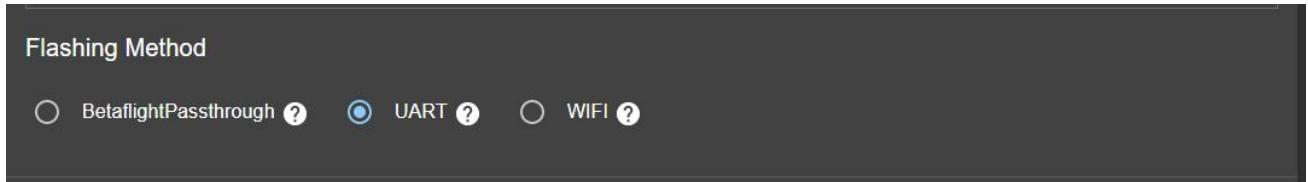
(7) Click “CHOOSE FOLDER” to select the file path to be compiled. Please note that you need to enter the src folder. Otherwise, compilation will not be successful.



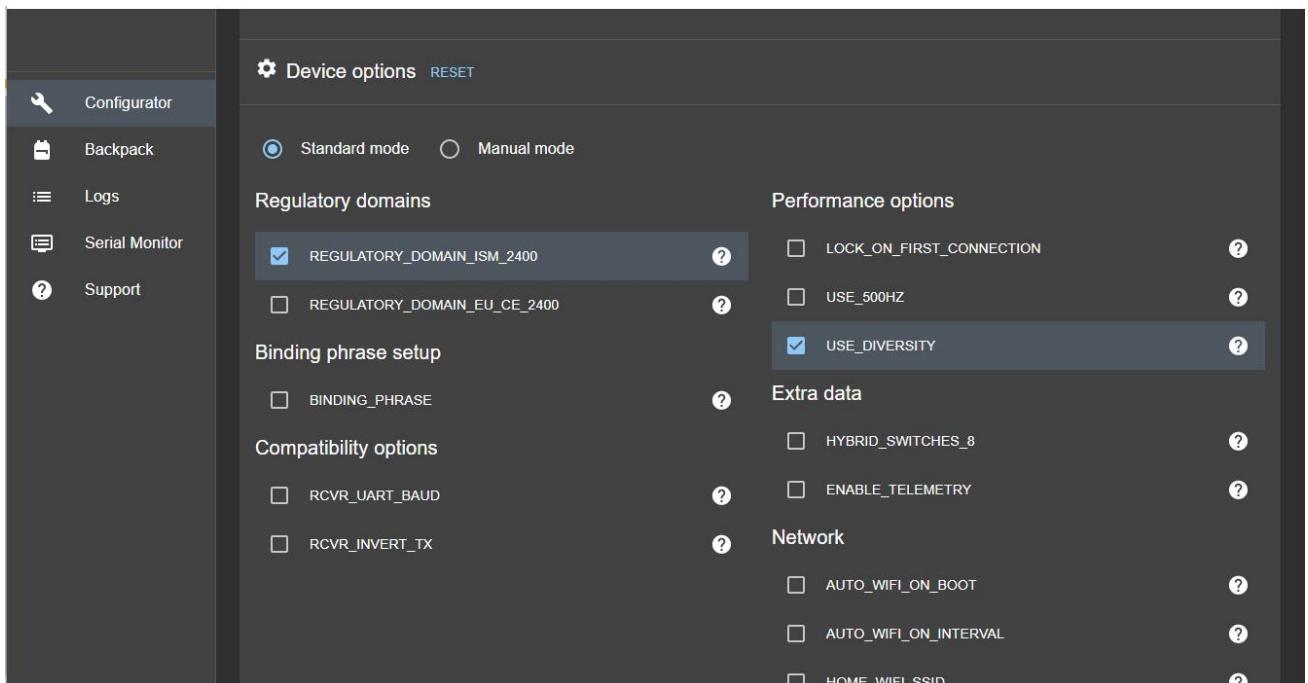
(8) Select the hardware information. Select "Matek 2.4GHz" from the "Device category" dropdown menu; and select "Matek 2400 RX" from the "Device" dropdown menu. If the firmware version is ExpressLRS-3.xx, the model selected in the "Device" dropdown menu is "Matek 2400 RX R24D".



(9) Select serial port (UART) for flashing method. You can also try other download methods on your own.

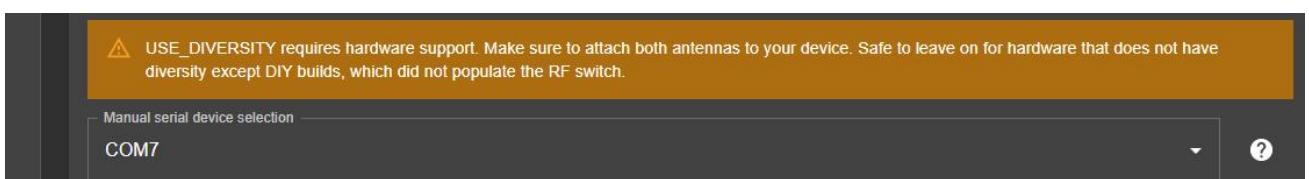


(10) Set the device options. Since we are using dual-antenna diversity, we need to check USE_DIVERSITY; otherwise, it will defaults to single antenna.

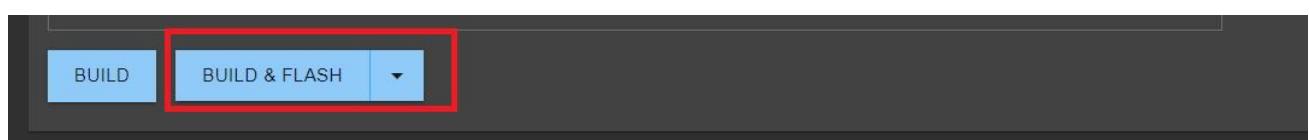


(11) Press and hold the firmware upgrade button on the receiver while powering it on. A solid light on the receiver indicates that it has entered firmware upgrade mode. If it is in another mode, please try again until the light stays on.

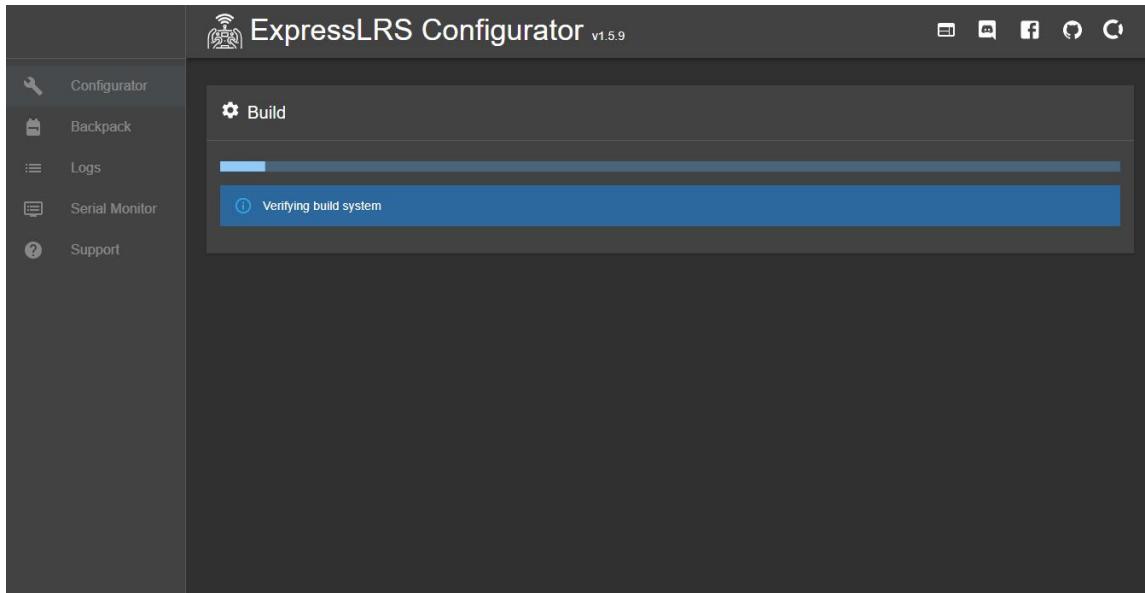
(12) The compiler will recognize the serial port number. Select the recognized serial port number COMxx in the Manual serial device selection. Alternatively, you can leave it blank; the tool will automatically detect it during subsequent downloads.



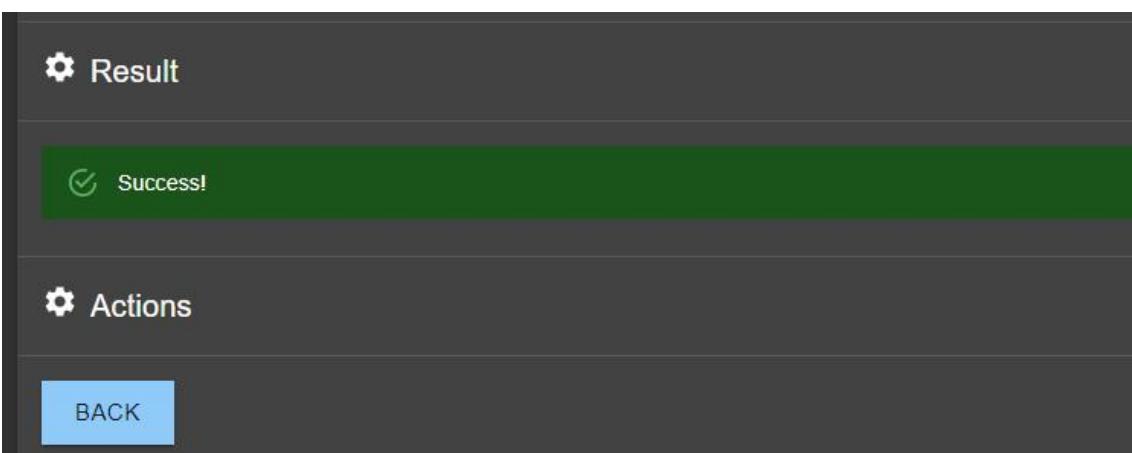
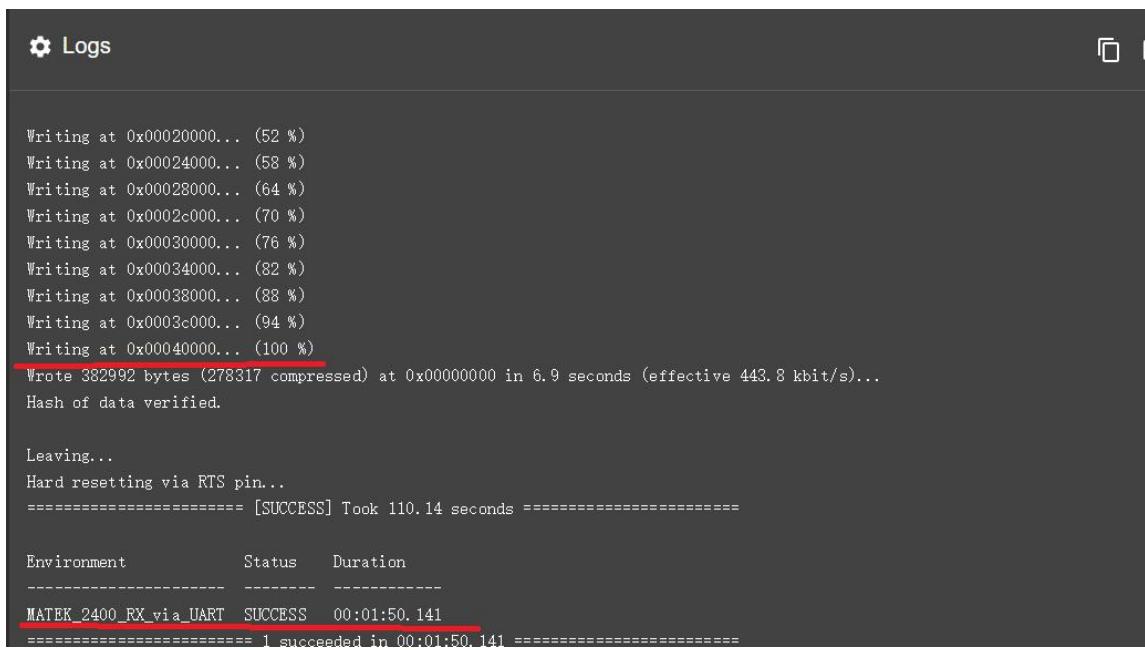
(13) Select BUILD & FLASH.



(14) The program compilation process has begun and will take some time. Please be patient and follow the prompts if any errors occur.



(15) The Logs window displays the entire compilation process. When the following page appears, it means the program has been downloaded to the receiver, and you will see a green "Success" under Result!



Technical Support Here



Contact RadioLink RL
via Facebook Messenger



ER16 User Manual



ER16 FAQ



ER16 Tutorials

If the above communication cannot solve your problem, you can also send emails to our technical support: after_service@radiolink.com.cn This content is subject to change. Please download the latest version from https://www.radiolink.com.cn/er16_manual

Thank you again for choosing RadioLink product.