

ELRS-720M-TX

High-frequency head

Instruction manual



Welcome to ExpressLRS!

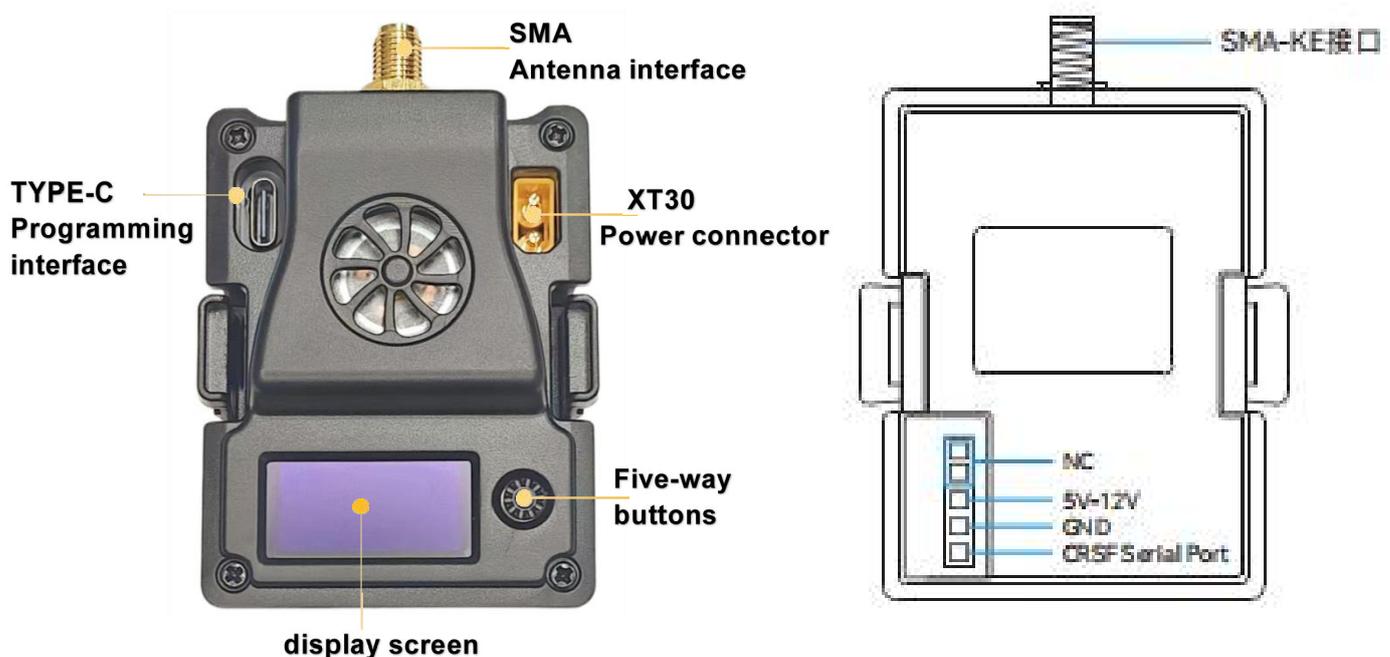
ELRS-720M-TX The high-frequency head is a new generation of remote control wireless system developed based on the open-source project ExpressLRS. The ELRS system has the characteristics of long remote control distance, stable connection, low latency, high refresh rate, and flexible configuration.

The official Github address of the project: <https://github.com/ExpressLRS>

1、 Basic parameters

- Frequency Band: (720MHz version/720-1020Mhz optional)
- Output power: 100mW/250mW/500mW/1000mW
- Refresh rate: 25Hz/50Hz/100Hz/200Hz
- Input Voltage: 5-12V(2S)
- Main control IC: ESP32+SX1276, backpack chip ESP8285

ELRS-720M-TX The high-frequency head can be used with all remote controls on the market that use the JR interface. (Interface diagram):



Note: Before powering on the ELRS-900-TX high frequency, install the matching antenna. Otherwise, it will cause damage to the high-frequency head PA chip.

2、 Basic configuration

By default, the ELRS-720M-TX high-frequency head only accepts signals from the Crossfire Serial Data Protocol (CRSF). The high-frequency head interface of the remote control needs to support CRSF signal output. The following takes the OpenTX remote control system as an example to illustrate how to configure the remote control to output CRSF signals and use the LUA script to control the ELRS high-frequency head.

3、 CRSF protocol

In OpenTX, select MODELSELECTION to enter the MODELSETUP page, where you can turn Internal RF off (set to OFF), enable External RF, and set Output Mode to CRSF. This is shown in the figure below.

MODEL SETUP	
Use global funcs	
Internal RF	
Mode	OFF
External RF	
Mode	CRSF
Channel Range	CH1-16
Receiver	00

If the ELRS-915-TX high-frequency head is connected correctly, and the remote control is configured as the CRSF output of the external high-frequency head (External RF) according to the above, the ELRS high-frequency head can be used normally in principle.

4、 LUA script manipulation

If you want to modify the power and refresh rate of the ELRS high-frequency head, you need to use the LUA script of the OpenTX system. It is shown below.

- Copy the official LUA script ELRS.lua to the SD card of the remote control, the path is Scripts/Tools;
- On the OpenTX system, press and hold the SYS button (e.g., RadioMaster T8 remote controller, etc.) or the MENU button (e.g., Frsky Taranis X9D remote controller, etc.) to enter the SD-HC CARD interface, select the ELRS.lua script and run the script on the interface
- If the LUA script runs successfully, the following figure shows the page.

ExpressLRS 0bf0d9 0:250	
Pkt Rate	200Hz(-112dbm)
TLM Ratio	1:64 (62bps)
Power	1000 mW
RF Freq	915Mhz ISM
[Bind]	[Wifi Update]

- Using the LUA script, you can choose to configure parameters such as Rate, Ratio, and Power. The following table describes all LUA script features.

Note: The official LUA script ELRS.lua can be downloaded from the ELRS support website (see More Information section at the URL).

5、 Alignment

The factory firmware of the ELRS high-frequency head uses the ExpressLRSV3.5.0 official version of the protocol, and there is no binding phrase set. Therefore, the linking receiver must also be V3.0.0~V3.5.0, and the linking password has not been set.

The ELRS high frequency head enters the matching state. Use the LUA script and select Bind. The ELRS high frequency head enters the matching state. See the "LUA Script Manipulation" section for details.

	The name of the parameter	Parameter description
0:250	Packet and bad packet ratio	Located in the upper right corner of the page. Represents the number of packets sent per second by the HF head and the remote control directly, as well as the number of bad packets
Pkt. Rate	Packet frequency	The higher the frequency, the shorter the interval between high-frequency hair packets and the more accurate the control
TLM Ratio	Packet return rate	For example, 1:64 means that the high-frequency head sends out 64 packets and the receiver sends back one packet
Power	power	High-frequency head transmitting power
RF Freq	Radio frequency	The frequency of the radio used by the current HF head
Bind	bind	The high-frequency header enters the binding state
Wifi Update	WIFI update	The high frequency head enables the WIFI function for firmware update

6、 Power setting

ELRS high-frequency head currently support 100 mw / 250 mw / 500 mw / 1000 mw/ is optional.

ELRS high-frequency head transmission Power switch to use LUA scripts, choose the Power, can be in 100 mw / 250 mw / 500 mw / 1000 mw / switch directly. See "LUA Script Manipulation"