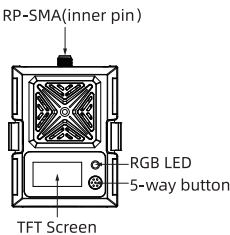
COREWING

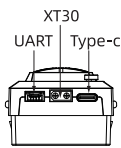
SIRIUS TX 2G4 Moudle

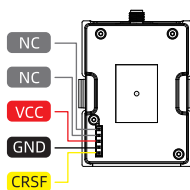
Sirius

User manual V1.0

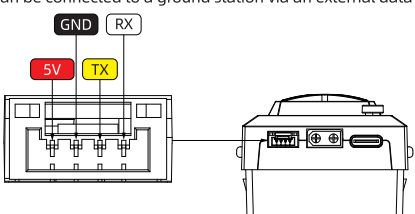
01 ProductReview







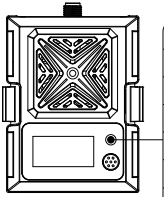
Below the high-frequency head, in addition to the XT30 power connector and Type-C port, there is also a GH1.25 serial port output. The pinout for this port is shown in the diagram below. By default, the serial port outputs CRSF protocol data and can be connected to a ground station via an external data link.



02 Five-Way Button Operation Guide

Operation Action	Interaction method	Main Interface Functions	Settings Menu Function
Up / Down	Short Press	Switch to linked data page	Scroll menu items up / down
Left / Right	Short Press	None	Return to previous level / Enter next level
Center Press	Short Press	None	Confirm current setting
Center Press	Long Press (2s)	Enter Settings Menu	None

03 Status indicator light



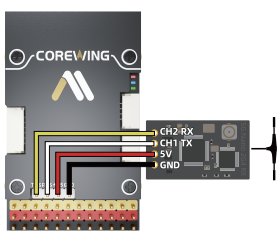
- Rainbow Gradient: Starting up
- Green Flashing: Web update mode enabled
- Blue Flashing: Bluetooth joystick enabled
- Red Flashing: RF chip not detected
- Orange Double Flash: Entering Bind mode
- Orange Triple Flash: Connected, but settings do not match model match
- Orange Slow Flash: Waiting for connection with receiver
- Solid RGB: Connected; color change indicates current refresh rate

RGB colors corresponding to each refresh rate

Color	Red	Yellow	Yellowish-green	Green	Cyan	Light blue	Blue	Blue-violet	Purple	Magenta
Refresh Rate (Hz)	F1000	F500	D500	D250	333 Full	500	250	150	100 Full	50

04 Hardware Connection

Solder the receiver using DuPont 4P single-ended wires,and insert the DuPont wires into the corresponding pin headers.



Receiver end	RX	TX	5V	GND
Flight Control Unit	TX	RX	4V5	GND

05 Basic Configuration

Caution: When powering on the LNB, ensure a properly matched antenna is installed. Failure to do so may result in damage to the LNB.

1. Using an EdgeTX/OpenTX transmitter with a standard JR expansion slot, install the high-frequency head into the transmitter's JR slot;

2. Open the transmitter's (MDL) model setup menu, disable the internal RF (Internal RF), enable the external RF (External RF), and set it to CRSF. Set the baud rate to 5.25M;

SETUP	2/12
Internal RF	
Mode	OFF
External RF	
Mode	CRSF
Baudrate	5.25M
Status	1000Hz
Ch.Range	CH1 – 16

3. Open the (SYS) System Settings menu on the remote control. Within the Advanced Tools or SD Card interface, locate the ExpresssLRS Lua script and select it to open the script.

TOOLS		1/7
01	ExpressLRS	
02	Game-Hsteroids	
03	Game-Breakout	

4. After opening the Lua script, if it reads the LNB information (as shown below), the remote control has been configured correctly. Subsequent operations such as modifying LNB parameters and performing frequency matching can be performed within the Lua script.

The RF head supports two operating modes. Please select parameter settings according to your use case:

CRSF Mode: Used for conventional RF head operation.

MAVLink Mode: Used when telemetry functionality is required.

Sirius TX2G4	CRSF Mode	MAVLink Mode
Packet Rate	250Hz(-108dBm)	F1000(-104dBm)
Telem Ratio	Std(1:128)	1:2(19921bps)
Switch Mode	Wide	Hybrid
Link Mode	Normal	MAVLink
Model Match	Off (ID: 0)	
> TX Power (1000mW)		

06 Frequency Synchronization Operation

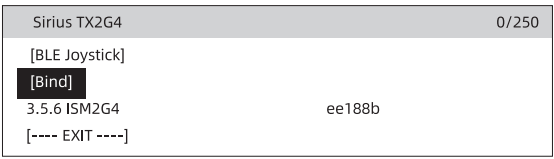
Note: The firmware versions of the LNB and receiver must be consistent; otherwise, tuning may fail.

Sirius TX2G4	TX
3.5.6 ISM2G4	ee188b

SG Nano 2.4G RX	RX
3.5.6	ee188b

1. Rapidly power on and power off 3 times each. On the 4th time, keep the power on continuously until the LED light displays a double-flashing pattern.

2. Open the Lua script on the remote control, locate the [Bind] option, and click it to put the LNB into frequency-matching mode.



3. After entering pairing mode, the high-frequency head will remain in this state for 5 seconds. During this period, successful pairing will not trigger any notification. After 5 seconds, it will automatically exit pairing mode.

4. Observe the receiver's LED status:
It changes from rapid flashing to slow flashing, then to a steady glow, indicating successful pairing.

For detailed pairing instructions, scan the QR code to view the tutorial.

ELRS Binding Procedure

07 Flight Control Parameter Settings

1. ArduPilot Firmware Flight Controller Parameter Settings

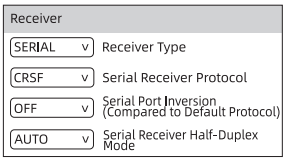
Open CoreWing APP → Click "Remote Controller Calibration" → Click "Receiver"Select the corresponding configuration option according to your use case:

CRSF Mode (Standard Use): Select "ELRS CRSF" for one-click configuration.
MAVLink Mode (Telemetry Required): Select "ELRS Mavlink" for one-click configuration.
For detailed setup instructions above, scan the QR code to view the tutorial.

ArduPilot Settings

2. INAV Firmware Flight Controller Parameter Settings

a. When using as a CRSF high-frequency head/receiver:
① Enter “Port” settings, enable the “Receiver” option for the receiver port, refer to BF port settings. After configuration, click “Save and Restart” in the bottom-right corner.
② Enter “Receiver” settings, locate “Receiver Configuration”, configure according to the diagram. After configuration, click “Save and Restart” in the bottom-right corner.



b. If MAVLink telemetry is required,
scan the QR code for detailed setup instructions.

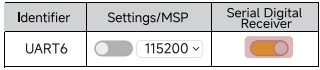
iNav/BF Settings

3. BF Firmware Flight Controller Parameter Settings

a. On the Ports page, enable the “Serial Digital Receiver” for the serial port (as shown for UART6 in the right image).

b. Click Save and Restart in the bottom-right corner.

The CRSF mode settings for iNav are the same as those for Betaflight (BF).



08 Data Transmission and Connection to Ground Station

Note: To use telemetry functionality, you must first set the RF head and receiver to MAVLink mode, and configure the flight controller parameters according to 07 Flight Controller Parameter Settings.

1. Open the Lua script on the remote control and enter the **Backpack** menu;

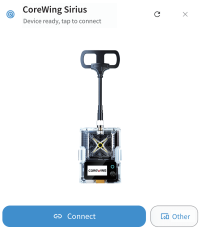
2. Click the Backpack option, scroll the wheel, and set it to **On**;

3. Click the Telemetry option, scroll the wheel to set it to **BLE**.
After configuration, restart the remote for changes to take effect.

Sirius TX2G4	0/100
Backpack	On
DVR Rec	Off
DVR Srt Dly	0s
DVR Stp Dly	0s
HT Enable	Off
HT Start Channel	AUX1
Telemetry	BLE
Version	CW1.5.4
[----BACK----]	

4. Open the CoreWing app on your phone and tap Search Device ;

5. Find "CoreWing -xxxx", and click to connect.



APP Connection
Detailed Operations

6. After a successful connection, the information bar on the app's main interface will display the aircraft data transmitted back by the LNB (as shown below).

09 Specifications

Product Name	Sirius 2.4G ELRS
Regulatory Domain	ISM 2400
MCU	ESP32S3(main)/ESP32C3(Backpack)
Frequency Range	2400MHz - 2480MHz
RF Power	1000mW（Max）
Max Receiver Refresh Rate	500Hz / F-1000Hz(F-1000Hz mode requires EgdeTX 2.7.1 or later)
Min Receiver Refresh Rate	50Hz
Wi-Fi	Supported
Bluetooth	Supported
XT30 Power Supply Voltage	DC 6V - 16.8V
Weight	65g (with antenna) 59g (without antenna)
Dimensions	68*50*35mm (without antenna)

10 Package Contents

1 × Sirius TX Moudle 

1× GH1.25 4P Cable 

1 × 2.4GHz Antenna 

1 × User manual 

About ELRS

ExpressLRS is an open-source high-performance wireless communication protocol purpose-built for drones and remote control devices. Its core strengths include ultra-low latency, long-range transmission capabilities, and robust anti-interference performance. Due to the rapid development pace of the ExpressLRS project, many sections in the documentation cannot be updated in real-time. For the most comprehensive information, please check the ELRS github repository and official website.

github page:https://github.com/ExpressLRS/ExpressLRS
Official website:https://www.expresslrs.org

For more details, scan the QR code.

APP Download

Knowledge Base

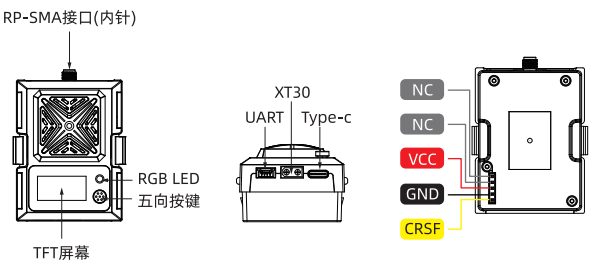
COREWING

天狼星 ELRS TX 2G4

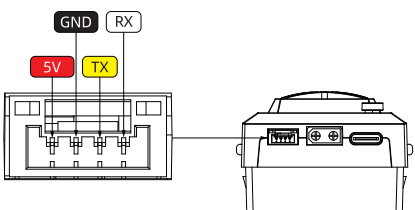
Sirius

使用说明书 V1.0

01 产品示意图



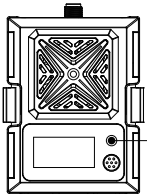
在高频头的下方除了XT30供电接口和Typc口，还包含一个GH1.25的串口输出，该接口的线序如下图所示。串口默认输出CRSF协议数据，可外接数传连接地面站。



02 五向按键操作说明

操作动作	交互方式	主界面功能	设置菜单功能
向上/向下	短按	切换至链接数据页面	菜单项上/下翻转
向左/向右	短按	无	返回上一级 / 进入下一级
中心按下	短按	无	确认当前设置
中心按下	长按(2s)	进入设置菜单	无

03 状态灯指示



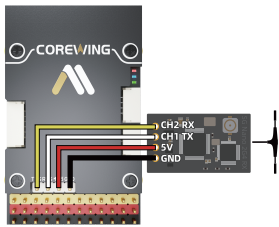
- 彩色渐变: 正在启动
- 绿色快闪: Web更新模式已启用
- 蓝色快闪: 蓝牙摇杆已启用
- 红色快闪: 未检测到射频芯片
- 橙色双闪: 进入绑定（Bind）模式
- 橙色三闪: 已连接, 但与模型匹配中的设置不符
- 橙色慢闪: 等待与接收机建立连接
- RGB常亮: 已连接, 颜色变化标识当前刷新率

各刷新率对应的RGB颜色

颜色	红色	黄色	黄绿色	绿色	青色	淡蓝色	蓝色	蓝紫色	紫色	品红色
刷新率(Hz)	F1000	F500	D500	D250	333 Full	500	250	150	100 Full	50

04 硬件连接

使用杜邦4P单头连接线焊接接收机，
并把杜邦连接线插入对应的排针。



接收机端	RX	TX	5V	GND
飞控端	TX	RX	4V5	GND

05 基本配置

注意: 高频头通电时, 必须安装好匹配的天线, 否则容易烧毁高频头。

1. 使用带有标准JR拓展仓的EdgeTX/OpenTX遥控器, 将高频头装入遥控器JR仓内;

2. 打开遥控器的（MDL）模型设置菜单, 关闭内置射频（Internal RF）, 打开外置射频（External RF）并且设置为CRSF, 波特率设置为5.25M;

SETUP	2/12
Internal RF	
Mode	OFF
External RF	
Mode	CRSF
Baudrate	5.25M
Status	1000Hz
Ch.Range	CH1 – 16

3. 打开遥控器的（SYS）系统设置菜单, 在拓展工具或SD卡界面中, 找到ExpresssLRS Lua脚本, 选中打开脚本;

TOOLS	1/7
01	ExpressLRS
02	Game-Hsteroids
03	Game-Breakout

4. 打开Lua脚本后, 若读取到高频头信息（如下图）, 则已正确配置好遥控器, 后续可在Lua脚本中修改高频头参数、进行对频等操作。
高频头支持两种工作模式, 请根据使用场景选择参数设置:

CRSF模式: 用于常规高频头使用;
MAVLink模式: 用于需要进行遥测功能时;

Sirius TX2G4	CRSF模式	MAVLink模式
Packet Rate	250Hz(-108dBm)	F1000(-104dBm)
Telem Ratio	Std(1:128)	1:2(19921bps)
Switch Mode	Wide	Hybrid
Link Mode	Normal	MAVLink
Model Match	Off (ID: 0)	
> TX Power (1000mW)		

06 对频操作

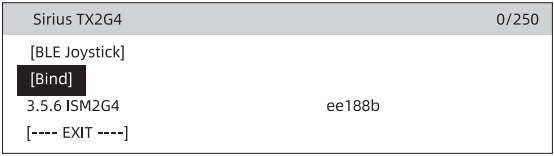
注意: 高频头和接收机的固件版本需保持一致, 否则可能会对频失败。

Sirius TX2G4	高频头
3.5.6 ISM2G4	ee188b
[---- EXIT ----]	

SG Nano 2.4G RX	接收机
3.5.6	ee188b
> Other Devices	

1. 快速上电、下电各3次, 第4次保持上电不断电, 直至LED灯呈双闪状态。

2. 遥控器打开Lua脚本, 找到[Bind]选项, 单击[Bind]选项使高频头进入对频状态;



3. 高频头进入对频状态后将持续5秒，
期间对频成功不会有提示信息，5秒后自动退出对频状态；

4. 观察接收机LED灯状态，
由双闪变为慢闪，再变为常亮状态，即对频成功。

对频详细操作可扫描二维码查看教程。

ELRS 对频设置

07 飞控参数设置

1. ArduPilot固件飞控参数设置
进入CoreWing APP → 点击"遥控器校准" → 点击"接收机"
根据使用场景选择对应的配置选项：

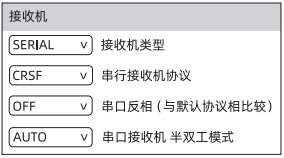
CRSF模式（常规使用）：选择"ELRS CRSF"，一键配置。
MAVLink模式（需要遥测）：选择"ELRS Mavlink"，一键配置。

上述详细设置可扫描二维码查看教程。

ArduPilot参数设置

2.INAV固件飞控参数设置

a. CRSF模式配置
1.端口设置：进入"端口"，在接收机端口开启"接收机"选项（参考BF端口标准配置）
2.接收机设置：进入"接收机"，在"接收机配置"项按图示完成设置
3.保存重启：点击右下角"保存并重启"以生效所有配置



b. MAVLink模式配置
扫描二维码即可查看详细的配置教程，按步骤进行设置。

iNav/BF参数设置

3.BF固件飞控参数设置

1.进入端口页面，打开"串行数字接收机"选项（以UART6为例）
2.点击右下角"保存并重启"

标识符	设置/MSP	串行数字接收机
UART6	115200	

iNav使用CRSF模式的设置和BF的设置相同。

08 数据回传与连接地面站

注意：使用遥测功能需先将高频头与接收机设置为MAVLink模式，
并根据07 飞控参数设置 配置好飞控参数。

1. 遥控器打开Lua脚本，进入**Backpack**菜单；

2. 单击Backpack选项，拨动滚轮，设置为**On**；

3. 单击 Telemetry 选项，拨动滚轮，设置为**BLE**,设置完成后重启遥控器生效；

Sirius TX2G4	0/100
Backpack	On
DVR Rec	Off
DVR Srt Dly	0s
DVR Stp Dly	0s
HT Enable	Off
HT Start Channel	AUX1
Telemetry	BLE
Version	CW1.5.4
[----BACK----]	

4. 手机打开CoreWing APP，点击 搜索设备 ；

5. 找到“CoreWing-xxxx”，点击即可连接。

APP 连接详细操作

6. 连接成功后，APP主界面的信息栏中会显示高频头回传的飞机信息（如下图）。

09 参数表

产品名称	天狼星 Sirius 2.4G ELRS高频头
工作频段	ISM 2400
芯片	ESP32S3(main) / ESP32C3(Backpack)
射频范围	2400MHz - 2480MHz
射频功率	1000mW
最大接收机刷新率	500Hz/F-1000Hz / (F-1000Hz模式需要EgdeTX 2.7.1或更高版本)
最小接收机刷新率	50Hz
Wi-Fi	支持
蓝牙	支持
XT30外部供电	DC 6V - 16.8V
重量	65g(含天线) / 59g(不含天线)
尺寸	68*50*35mm

10 包装清单

1 × 天狼星 Sirius 高频头

1× GH1.25 4P连接线

1 × 2.4GHz 天线

1 × 说明书

关于ELRS
ExpressLRS 是一款开源的高性能无线电通信协议, 专为无人机和远程控制设备设计。其核心优势在于超低延迟、远距离传输及强大的抗干扰能力。由于ExpressLRS项目更新的速度比较快,说明书中许多内容没法及时更新, 更多内容欢迎访问ELRS项目库和官方网站介绍。

github地址:https://github.com/ExpressLRS/ExpressLRS
官方网站:https://www.expresslrs.org

更多其他操作教程，请扫码查看

APP下载　　知识库