

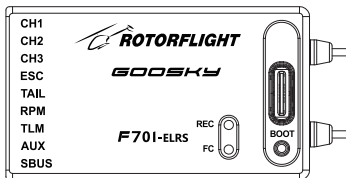
F701飞控

使用说明

F7 Flight Controller

User Guide

飞控介绍



硬核配置：STM32F722 主控 + ICM42688P 高精度 IMU, 为复杂算法提供强劲算力基础。

内置接收机：集成 ELRS 接收机(UART1), 无需外接, 极大简化布线, 实现真正即插即飞。

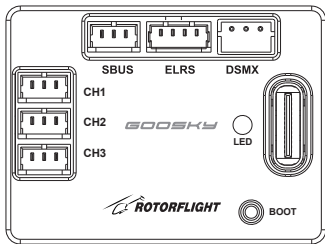
精准控制：专为 Rotorflight 优化, 毫秒级响应与超稳姿态, 助力极致特技飞行体验。

极致扩展：多达 6 个 UART 接口, 预留 GPS、数传等端口。

全协议兼容：除内置 ELRS 外, 全面支持 CRSF、SBUS、DSMX、FBUS 等十余种接收机协议。

工业供电：5-16V 宽电压输入, 串口输出 5V/1.5A, 为各类外设提供稳定电力保障。

Flight Controller Overview



Hardware Configuration:

Equipped with STM32F405 main processor + ICM42688P 6-axis IMU sensor, and 128MB Blackbox memory (supports 60+ flight data logs)

Precision Control:

Optimized specifically for Rotorflight 2.2 to achieve ultra-responsive control and exceptional stability

Fully Compatible Protocols:

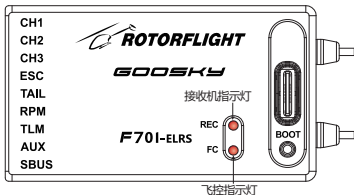
Plug-and-play support for DSMX / SBUS / ELRS receivers — no soldering required

Industrial-Grade Protection:

CNC aluminum alloy casing with high anti-interference performance and impact-resistant design

Ultra-compact size: 24 × 33mm, weight: only 11g

飞控灯语介绍



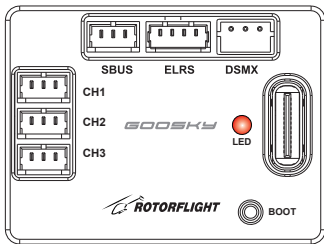
飞控 LED 指示灯灯语介绍

允许解锁	红灯常亮	
禁止解锁	红灯慢闪	
已解锁	红灯熄灭	
解锁失败	红灯快闪	

接收机灯语介绍

进入对频模式	红灯双闪	
未进入对频	红灯慢闪	
已对频	红灯常亮	

Flight Controller LED Status Indicators



LED Status Descriptions:

System is ready to arm	Solid red	
Arming not permitted	Slow flashing red	
System is armed	Rapid blinking red	
Arming attempt failed	Fast flashing red	

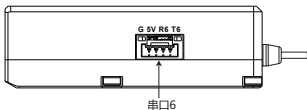
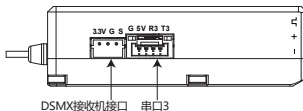
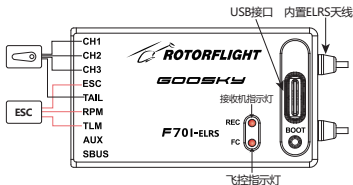
参数表

固件	Rotorflight
主控芯片 (MCU)	STM32F722RET6
陀螺仪/惯性单元 (IMU)	ICM42688P
气压计	SPL06
黑匣子	128M/256M
舵机接口 (共4路)	CH1,CH2,CH3,Tail (最高支持12v)
遥测支持	S.BUS, S.Port, MSP, EDGETX, ELRS
支持的电调协议 (ESC)	PWM, Oneshot, Multishot, Dshot300, Dshot600
支持尾舵/尾电机切换	支持
RPM传感器	支持 (来自ESC转速传感器)
UART 接口 (共6个)	内置ELRS接收机 (UART1)
	SBUS, DSMX (UART2)
	预留串口 (UART3)
	预留串口 (UART6)
	辅助开关AUX (UART4-TX4)
	电调回传 (UART5--RX5)
支持的接收机协议	CRSF, ELRS, S.BUS, FBUS, PPM, MSP , DSMX
电调输入电压范围	5-16v (注意不要超过舵机使用电压)
串口电源输出	5v-1.5A (注意接入设备请不要超过此电流)

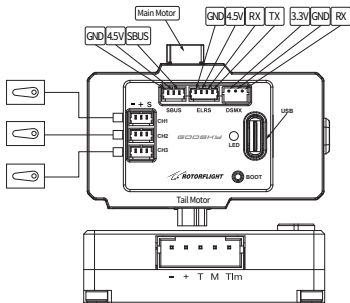
Specifications

Firmware	Rotorflight
Main Controller (MCU)	STM32F405RGT6
Gyroscope / IMU	ICM42688P
Servo Ports (3 total)	CH1, CH2, CH3
Receiver Protocols Supported	S.BUS, S.Port, MSP, EDGETX, ELRS
ESC Protocols	Supports PWM, Oneshot, Multishot, DShot300 (DSHOT600 not recommended)
Tail Motor / Tail ESC Switching	Supported
UART Ports (3 total)	ELRS/ DSMX (UART 1)
	ESC Telemetry (UART 5)
	SBUS (UART 2)
Supported Receiver Protocols	CRSF, ELRS, S.BUS, FUBS, MSP, DSMX
ESC Input Voltage	5-16v (Do not exceed ESC-rated input voltage)

飞控接口定义



Flight Controller Port Definitions



CH1-CH2-CH3: Servo interface

SBUS: JST 1.25mm 3PIN

ELRS: JST 1.25mm 4PIN,

Note : Connect receiver TX to FC RX, and receiver RX to FC TX

DSMX: HX 1.5mm 3PIN

BOOT Button: Used for firmware updates. Press and hold the BOOT button, then power on the flight controller to enter DFU (Device Firmware Upgrade) mode.

飞控接口定义

CH1-CH2-CH3: 斜盘舵机接口。

Tail: 尾舵接口。

ESC: 电调PWM信号插口。

RPM: 电调转速回传接口。

TLM: UART5-RX5,电调信息回传接口, 根据电调协议, 回传电压, 电流, 温度等信息。

AUX: UART4-TX4, 辅助开关, 可用于其他设备的开关, 如飞控备用电容等。

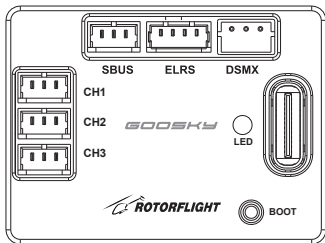
SBUS: UART2-RX2, SBUS接收机接口, 接入电压同电调BEC输出电压, 因此需注意接收机工作电压范围。

串口3, 串口6: 拓展设备接口, 请注意接入串口的所有设备, 总电流不得超过1.5A。

DSMX接口: UART2-RX2, DSMX接收机接口, 由3V3供电, 请勿接入其他设备。

BOOT按键: 用于飞控固件升级, 先用镊子等按住BOOT按键, 再给飞控上电, 可进入DFU (固件烧录模式)。

Receiver to Serial Port Mapping



Receiver Type	Serial Port
ELRS	UART1
DSMX	UART1
SBUS	UART2

Receiver Settings:

<https://www.rotorflight.org/docs/configurator/tabs/receiver>

内置接收机使用方法

1, 对频:

与正常ELRS接收机相同, 对飞控连续上电两次, 接收机指示灯变为双闪状态, 即可进入对频模式, 使用ELRS遥控进行对频。

2, 飞控配置:

打开UART1-串行接收机。

Serial Ports		
UART1	Serial Rx	Auto
UART2	Disabled	Disabled
UART3	Disabled	Disabled
UART4	Disabled	Disabled
UART5	ESC Telemetry	Auto
UART6	Disabled	Disabled

接收机类型选择-TBS CRSF

Receiver Type	
Receiver Protocol	TBS CRSF

以上所有操作, 均保存并重启即可。

3, 关于接收机升级, 此接收机使用betaflight直通方式进行升级, 具体升级方法可参考我们官网技术知识库。

Transmitter Setup

Warning: For safety, it is recommended to remove the helicopter main blades and tail blades during setup.

1. Power on the transmitter and enter the switch setup menu (Using TX16S as an example)

A. Create a new model

B. Enter the mixer setup

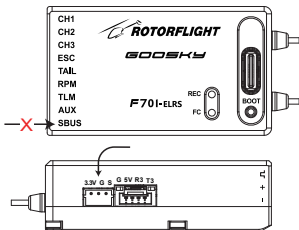
Add the following channels and assign functions accordingly (used for flight control, throttle hold, RPM selection, etc.):

Channel	Control Function	Input Source
CH1	Aileron	Ail (default)
CH2	Elevator	Ele (default)
CH3	Collective (Throttle)	Thr (default)
CH4	Rudder	Rud (default)
CH5	Flight Mode Switch	SA
CH6	Throttle Output	Thr
CH7	RPM Selection	SE
CH8	Pose Mode	SB

2. Enter the Special Functions setup

Trigger	Function	CH	Value	Enable	Effect
SF ↑	Override Value	6	100	Enabled	Throttle ON
SF ↓	Override Value	6	-100	Enabled	Throttle OFF

飞控使用注意事项



- 1, 如果使用DSMX接收机时, 请勿在SBUS接口接入其他设备, 否则接收机无法正常使用。
- 2, UART3、UART6端口供电为5V-1.5A, 接入设备的总电流请勿超过1.5A, 否则会导致飞控供电不足。
- 3, SBUS接口的电压与电调, 输入电压相同, 因此请注意您的接收机工作电压范围。
- 4, 由于考虑到使用其他类型接收机的用户, 内置ELRS接收机的WIFI功能默认处于关闭状态, 防止在飞行中进入wifi模式, 产生不必要的干扰, 您可以使用BETAFLIGHT直通方式进行升级接收机的固件。
- 5, 所有插口接入时, 需要注意线序是否正确, 否则会导致设备无法正常使用, 甚至烧坏设备。

Transmitter Setup

3. Check Mixer Settings

Enter the channel view page and configure according to the table below:

Channel	Control Function	PWM Value	Output maximum effect
CH1	Aileron	988us/1500us/2012us	Roll Right
CH2	Elevator	988us/1500us/2012us	Pitch Forward
CH3	Collective (Throttle)	988us/1500us/2012us	Collective Up
CH4	Rudder	988us/1500us/2012us	Yaw Clockwise
CH5	Flight Controller Lock	988us-1500us (Disarm)	Arm
		1500us-2012us (Arm)	
CH6	Throttle Hold	988us-1500us (0)	100%
		1500us-2012us (100%)	
CH7	RPM Selection	988us (RPM 1)	RPM 3
		1500us (RPM 2)	
		2012us (RPM 3)	
CH8	Pose Mode	988us-500us (Manual)	Pose Mode ON
		1500us-2012us (Pose)	

Notes on Arming and Disarming:

- 1, First, disarm the helicopter by toggling the SA switch on channel 5
- 2, Then enable throttle hold by toggling the SF switch on channel 6

调参下载

登录 **www.GOO-SKY.com**. 进行下载

注意：官网中软件为稳定版本,如需获得软件的最新版本
可登录此网址：<https://github.com/rotorflight/rotorflight-configurator/releases/>



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Configurator Download

Visit: www.GOO-SKY.com to download the software.

Note: The version provided on the official website is a stable release. To access the latest versions, please visit:

<https://github.com/rotorflight/rotorflight-configurator/releases/>



GOOSKY



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This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure statement

The device has been evaluatec to meel general RF exposure requirement. The device can be used in portable exposure condition without restriction.