

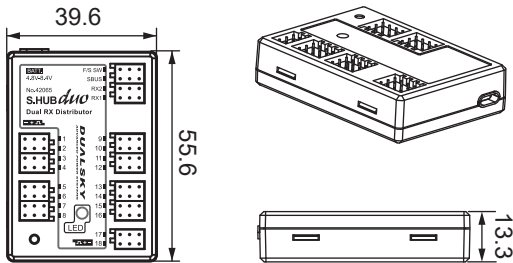
S.HUB duo

— 双路串行总线通道扩展器 — 使用说明书

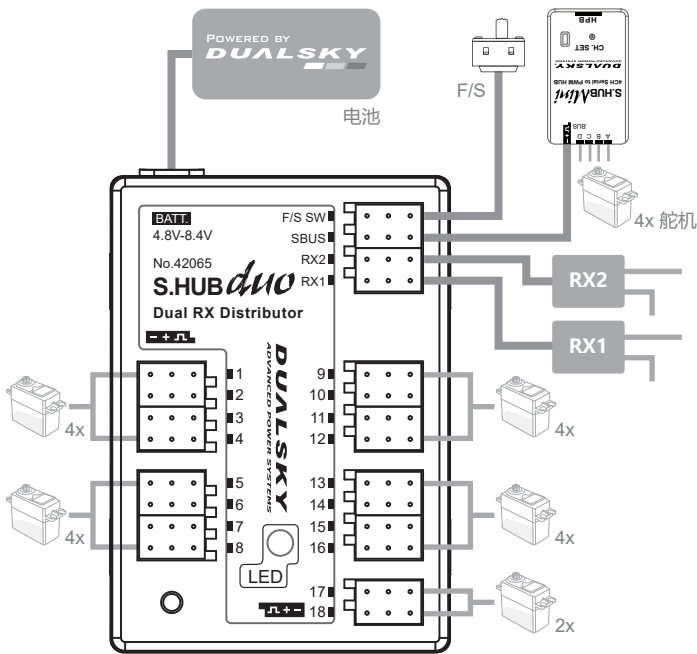
产品规格

- 尺寸: L 55.6 x W 39.6 x H 13.3mm
- 重量: 35.0g
- 工作电压: 4.8V 到 8.4V
- 工作电流: 持续 20A, 峰值 30A
- 串行输入数量: 双路冗余
- 支持的协议: Futaba S.Bus/S.Bus2, JETI EX.Bus, Spektrum SRXL
- PWM输出数量: 18
- S.Bus中继输出: 编码输出
- 电源开关: FSS-4, fail-safe switch
- 稳压输出: N/A
- 外壳材料: PC 塑料
- 应用场合: 用于舵面较多的大型模型, 例如: 滑翔机、像真机、汽油机或涡轮模型

产品尺寸



连线示意图



输入电源及开关

S.HUB duo 采用单电源输入, 电源可以是 2S Lipo (推荐), 2S LiFe 等。产品本体不再提供电压指示功能, 电源直接输出 (不稳压), 用户可以通过回传功能监控接收机电压, 也可以配合双天 RXB 接收机专用锂电池使用, 其集成的 IVM 电压显示器方便随时随地了解电池电量。产品提供安全开关 (Fail safe switch) 功能, 可以连接 FSS-4 (标配, #46814)、FSS-3 (#46813) 甚至遥控开关。注意: 与电池连接后, 即便是关机状态也有毫安级耗电, 如果当日不再使用, 请断开电池连接。

信号输入及LED指示灯

S.HUB duo 支持三种总线协议 (S.Bus, EX.Bus, SRXL), 初始化时优先连接上次使用协议 (快速启动功能), 如果连接不上, 自动切换协议并尝试。

S.HUB duo 支持双接收机冗余。当连接两个接收机时, RX1 为主接收机。当然, 也支持单接收机模式, 连接 RX1 或 RX2 都可以。RX1 和 RX2 端口旁有 LED 指示灯, 连同主 LED, 指示并记录飞行过程中的信号情况, 见下表:

RX1 LED RX2 LED	蓝色	慢闪	快闪
	RX信号正常 (不亮灯:RX未连接)	信号异常	总线故障
主 LED	蓝色	黄色 (可恢复)	红色 (本轮保持)
	RX信号正常 (不亮灯:RX未连接)	一路RX信号异常	两路RX信号异常 或单RX信号异常

RX1 & RX2 端口设计有过载保护机构, 允许接收机连接传感器, 但不建议连接大功率设备, 如: 舵机, 灯光系统等。

舵机输出端口

S.HUB duo 可输出最多 18 个 PWM 通道, 当使用的制式少于 18 通道时, 多余通道没有输出信号。舵机输出端口的频率与输入总线频率自动同步。

举例: 当接收机工作在 S.Bus 16/18CH 模式时, 输出端口频率为 15ms。当接收机工作在 S.Bus 12CH 高速模式时, 输出端口频率同步提高到 6ms (此模式下只能使用数字舵机), 第 13 至 18 舵机端口无输出。单个舵机输出端口的最大连续电流为 2.5A, 最大 5A, 过大的电流会损坏端口插针。

S.Bus 信号中继

无论接入接收机是上述哪种协议, S.HUB duo 解码 PWM 舵机信号的同时, 再次将其编码成 S.Bus 信号, 并通过 SBUS 端口输出。以便接驳更多的 S.Bus 兼容设备, 例如: S.HUB mini (#21898) 或陀螺仪等。端口允许最大 5A 工作电流。

除了获得优质的 S.Bus 总线数据 (双接收机模式) 之外, 当 RX 协议为 EX.Bus 24CH, 系统会将 9CH-24CH 的数据编码到中继 18CH S.Bus 总线中。这样一来, 配合使用 S.HUB mini, 就可以充分利用 24 个通道的功能, 特别是第 19 至第 24 通道。

失控保护

S.HUB duo 的失控保护策略为“保持” (Hold), 舵机保持失控前最后的位置。只有当 RX1 和 (或) RX2 的物理连接线全部故障时, 才会激活 S.HUB duo 的失控保护, 否则, 会执行主接收机的失控保护。

免责声明

首先非常感谢您, 使用本产品。请严格按照手册使用本产品。我们不承担使用本产品或非法改装、操作不当产生的任何责任, 包括但不限于间接损失或连带责任, 最高赔偿不高于产品本身价格。一旦使用即代表您同意本声明的条款。

保修条例

双天电子类产品自售出之日起提供 12 个月的保修服务。如果你想在保修期内索赔, 请立即联系您的经销商。

模型店的收银台收据可证明货物是否在保修期内。请注意, 任何情况下保修期都不会延长。在保修期内, 任何功能缺陷、生产故障或材料缺陷都会免费提供维修服务。我们不会接受任何进一步索赔, 如间接损害货物返回时需自行承担运费, 我们将支付回程费用。运费未预付, 我们将不会接受货物。我们不接受运输造成的损害, 也不弥补运输损失。我们建议您投保运输险, 将您的设备发送到服务中心。

满足以下条件, 我们才能处理您的索赔:

- 提供收银台收据
- 按照说明书正确地使用产品
- 使用推荐的电源和配件
- 不是因为进水, 反极性, 过载而造成的损害
- 请提供一个简洁、准确的故障描述, 帮助我们解决问题

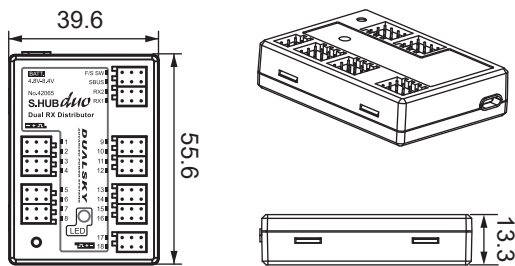
S.HUB duo

Dual RX Distributor Instruction Manual

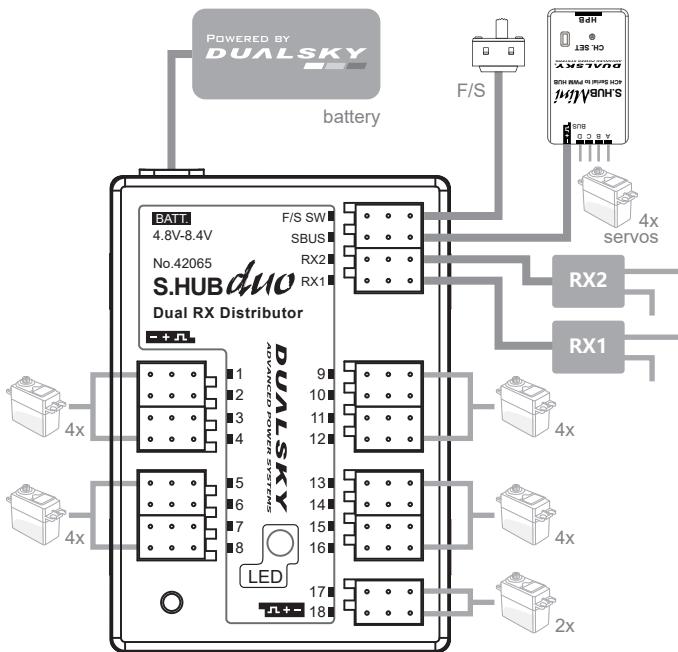
Specifications

- Dimension : L 55.6 x W 39.6 x H 13.3mm
- Weight : 35.0g
- Working Voltage : 4.8V to 8.4V
- Working Current : 20A constant, 30A peak
- Number of serial input : Dual RXs redundant
- Protocol supported : Futaba S.Bus/S.Bus2
JETI EX.Bus
Spektrum SRXL
- Number of PWM output : 18
- S.Bus output relay : Yes, encoded
- Power switch : FSS-4, fail-safe switch
- Voltage Regulator : N/A
- Casing material : PC plastic
- Applications : For the large model which have many control surfaces, for example : glider, scale model, gasoline and Jet.

Dimensions



Wiring Diagram



Input power and switch

S.HUB duo use single power input. The power source can be 2S Lipo (recommended), 2S LiFe, etc. The product no longer provides the voltage indication function. The power supply output directly (unregulated). So that user can inspect the receiver voltage through the telemetry function. S.HUB duo also work well with the Dualsky RXB receiver Lipo battery. Which is integrated with IVM voltage monitor. Pilot can check the capacity easily at any time.

The product provides a failsafe switch function, which can be connected to FSS-4 (standard, # 46814), FSS-3 (# 46813) and even remote switches. Note: After connecting to the battery, even it is turned off, there is a milliamp-level power consumption. If you will not use it on the same day, please disconnect the battery.

Signal input and LED indicator

S.HUB duo supports three kinds of bus protocols (S.Bus, EX.Bus, SRXL). When initializing, it will connect to the protocol which is used the last time firstly (quick start function). If the connection fails, it will automatically switch protocols and attempt to re-connect.

S.HUB duo supports dual receiver redundancy. When two receivers are connected, RX1 is the master receiver. Of course, it also supports single receiver mode, you can connect RX1 or RX2 alternatively. There are LED indicators next to the RX1 and RX2 ports, together with the main LED, indicate and record the signal conditions during the flight. The following is the table:

	Blue	Slow flash	Fast flash
RX1 LED RX2 LED	RX signal is normal (No light : RX doesn't work)	Signal is abnormal	Bus wire failure
Main LED	Blue	Yellow (Recoverable)	Red (Unrecoverable)
	RX signal is normal (No light : RX doesn't work)	1 of 2 RX signal is abnormal	2/2 or 1/1 RX signal is abnormal

The RX1 & RX2 port is designed with overload protection. It allows the receiver to connect with sensors, but it is not recommended to connect high-power equipment such as servos, lighting systems, etc.

Servo output port

S.HUB duo can output up to 18 PWM channels. When the number of channel on the BUS is less than 18, there is no output signal on the extra channels. The frequency of the servo output port is automatically synchronized with the input bus frequency. For example: When the receiver works in S.Bus 16CH / 18CH mode, the output port frequency is 15ms. When the receiver works in S.Bus 12CH high-speed mode, the output port frequency is synchronously increased to 6ms (only digital servos can be used in this mode), and there is no output from the 13th to 18th servo ports. The maximum continuous current of single output port is 2.5A and the maximum is 5A. Excessive current will damage the pins.

S.Bus signal relay

No matter which protocol is connected to the receiver, while the S.HUB duo decodes the PWM servo signal, it encodes channel data into a S.Bus format again and outputs through the SBUS port. To connect more S.Bus compatible devices, such as: S.HUB mini (# 21898) or gyroscope. The port allows a maximum 5A operating current. In addition to obtaining high-quality S.Bus data (dual receiver mode), when the RX protocol is EX.Bus 24CH, the system will encode 9CH-24CH data into the relay 18CH S.BUS. In this way, with the use of S.HUB mini, you can make full use of the functions of 24 channels, especially the 19th to 24th channels.

Signal fail-safe protection

S.HUB duo's fail-safe strategy is "Hold", and the servo maintains the last position before the signal loss. Only when the physical connection lines of RX1 and RX2 are all faulty, the fail-safe protection of S.HUB duo will be activated. Otherwise, the F/S protection of main receiver will be performed.

Disclaimer

Thank you very much for using this product. Please use this product strictly in accordance with the manual. We do not assume any liability arising out of the use of this product or illegal modification or improper operation, including but not limited to indirect damage or joint liability, the maximum compensation is not higher than the price of the product itself. By using this product, you agree to the terms of this statement.

Warranty

Dualsky electronic products warranty is for 12 months from the date of sale. If you want to claim during the warranty period, please contact your dealer immediately.

The cashier receipt at the model store can prove whether the goods are under warranty. Please note that the warranty period will not be extended under any circumstances. Warranty service is provided free of charge for any functional defects, production failures or material defects during the warranty period. We will not accept any further claims, such as the user is responsible to pay the return shipping cost of the indirect damaged goods, we will pay for the return shipping cost to the user. If the shipping costs are not prepaid, we will not accept the goods. We do not accept the damage caused by transportation and do not make up for the loss of transportation. We recommend you to buy transportation insurance and send your equipment to the service center.

We can process your claim if the following conditions are met:

- Provide cashier receipts
- Operate the equipment correctly according to the instructions
- Use recommended power supplies and accessories
- The damage is not caused by water, reverse polarity, or over load.
- Please provide a concise and accurate description of the fault to help us solve the problem