FrSky Electronic Co., Ltd

Frsky CPPM/SBUS Decoder

Instruction Manual

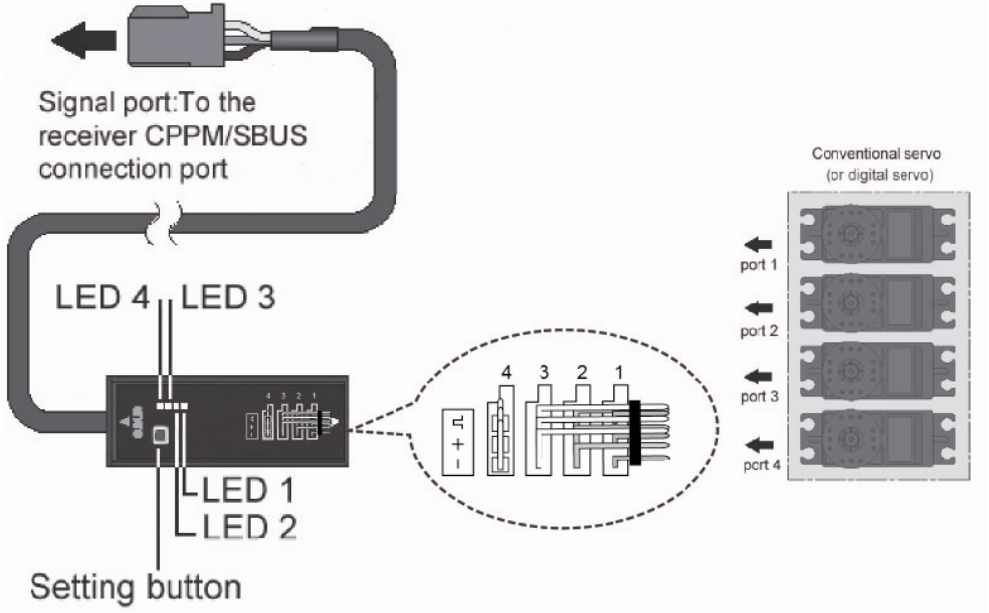
NOTICE: All instructions, warranties and other collateral documents are subject to change at the sole discretion of FrSky Electronic Co., Ltd. For further information please visit https://www.FrSky-rc.com.

Thank you for purchase **FrSky CPPM/SBUS Decoder**. This product can be used as CPPM/SBUS decoder to convert CPPM/SBUS signal for conventional servo (other than use CPPM/SBUS compatible servo directly) with CPPM/SBUS system. In order to fully enjoy benefits of this system, please, carefully read the instruction and set up the devices as described below.

- ⓘ ***Connect the servo and battery connector in the correct polarity**. Connecting the power + and – polarities in reverse by mistake may cause smoke, fire, and damage.*
- ⓘ ***Do not connect any other device (gyro, battery, etc.) other than servo to the servo connection port of decoder**. There is the danger of erroneous operation or damage.*
- ⓘ ***Do not disassemble or modify the product**. FrSky will not be responsible for disassembly or modification other than those specified by us.*

FrSky Electronic Co., Ltd will not be responsible for damage caused by combination with other than FrSky Genuine parts.

Specifications



Operating Voltage: DC 4-10V

Operating temperature range: -10 to 5℃

⚠WARNING

The input voltage should match the servo's proper operating condition. There is the danger of erroneous operation or damage.

NOTE: DO NOT plug in the power HIGHER than the connected decoder/servo operating voltage. Otherwise injury or damage may occur.

Channel Setting

Before installing the **CPPM/SBUS decoder** to the fuselage, set each channel at each servo connector. Use FrSky SCC (Servo Channel Changer), FrSky CPPM/SBUS receiver (TFR8SB etc.), Futaba SBC-1, Futaba SBUS receiver (R6208SB etc.) to set.

It is strongly recommended to use **FrSky SCC** to do channel setting.

ⓘ *Before channel setting, make sure **NO** servo is connected. There is the danger of erroneous operation or damage.*

❖ *Channel setting by **FrSky Servo Channel Changer** (Strongly recommended)*

a. *Connect the **Signal port**of the **decoder**to the **servo connection port** of the **FrSky SCC**.*
b. *Connect the battery to the **battery connection port** of the **FrSky SCC**.*
c. *Quickly press the **decoder's setting button**and select **the servo connection port** at which channel is to be set.*

*Each time the button is pressed, the channel No. of selected **servo connection port** will be displayed by **FrSky SCC** via **Current Servo Channel No.** (See SCC's instruction).*

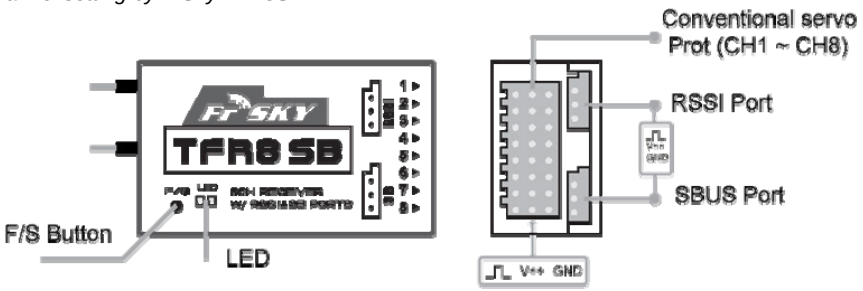
d. *Use **SCC rotate switch**set the "**Set-To**" to the channel you want and push rotate to confirm (See SCC's instruction).*
e. *Switch to "**SET**" and push the rotate switch to confirm channel setting (See SCC's instruction).*
f. *To set the channel of other servo connection ports, quickly press and release the **decoder**'s **setting button** to choose and repeat step **d.** and **e**.*

❖ *Channel setting by Futaba SBC-1*

a. *Connect the **Signal port**of the **decoder** to the **servo connection port** of the **Futaba SBC-1**.*
b. *Connect the battery to the **battery connection port** of the Futaba **SBC-1**.*
c. *Quickly press **the decoder's setting button** and select **the servo connection port** at which channel is to be set.*
d. *Set the **Futaba SBC-1channel selector switch** to the channel you want to set.*
e. *Hold down the setting switch (about 1 second).*
f. *To set the channel of other servo connection ports, quickly press and release the **setting button** and repeat steps **d.** and **e**.*

❖ *Channel setting by Futaba SBUS compatible receiver*

- *Channel setting by FrSky **TFR8SB***



a. *Turn on Frsky CPPM/SBUS decoder, quickly press the **decoder's setting button** and select **the servo connection port** at which channel is to be set.*
b. *Turn off the decoder.*
c. *Connect the receiver's**SBUS port's signal pin** and **RSSI port's signal pin** via provided cable.*
d. *Connect the **Signal port**of the **decoder** to the conventional system output connector (**1** to **8**) corresponding to the channel you want to set.*

Output connector	Channel setting	
	Mode A	Mode B
1	1	9
2	2	10
3	3	11
4	4	12
5	5	13
6	6	14
7	7	15
8	8	16

e. *Turn on the receiver*
   ! *At once when turning on the receiver, the channel setting is completed in mode A.*
   *(To switch to mode B, press the **F/S** button until the red and green **LED** starts to blink simultaneously. The channel setting is completed in mode B)*
   ! *The LED corresponding to the setting mode blinks.*
   *Mode A: **Red** blinks **3** times*
   *Mode B: **Green** blinks **3** times.*
f. *Turn off the receiver.*

- *Channel setting by Futaba SBUS receiver (R6208SB etc.)*
  Please refer to the product specifications.

Installation

▪ *Connection*

a. *Connect the **Signal port**of the **decoder** to the **receiver CPPM/SBUS connection port** or **SBUS hub**.*
b. *Connect a conventional servo or a digital servo to the **servo connection port** of the **decoder**.*
   ➢ *When an SBUS servo was connected, that servo will operate as a conventional servo. However, it operates on the channel set at the servo connection port of the **decoder** instead of the channel set at the servo itself.*

Decoder's LED status		
	CPPM	SBUS
Power on	Last selected servo port	Last selected servo port
Normal working	Flashing when channel has signal	All flashing
Lost signal	Flashing when channel has normal failsafe	All flashing
	OFF with "No Pulse" failsafe	

Cautions

- ⓘ *When use **decoder** with **V8 series CPPM receiver**. **DO NOT**use **more than6channels** of CPPM signal. Otherwisedamage may occur.*
- ⓘ *The factory default firmware of**D series (Two-Way) CPPM receiver**is**21ms for CPPM**. If want to use more than 6 channels, please download and flash with **27ms firmware**from www.FrSky-RC.com. The **V8 series**receiver **CANNOT** be upgrade with this firmware.*
- ⓘ *Before channel setting, **BE SURE** there is **NO** servo connected. There is the danger of erroneous operation or damage.*
- ⓘ *The **decoder**'s output PWM frequency is **automatically match** with the input CPPM/SBUS signal frequency, make sure the proper servo is connected. **Do NOT** use conventional servo with **SBUS High Speed** mode and/or **CPPM mode when frame length is shorter than 14ms**.There is the danger of erroneous operation or damage.*
- ⓘ *With Digital servo, CPPM frame length **MUST NOT** larger than **30ms**; in case of conventional servo, CPPM frame length **MUST NOT** larger than **22ms**. Otherwise erroneous operation or damage may occur.*
- ⓘ *Before take-off, **BE SURE** there is no redundantservo connects to decoder. There is the danger of erroneous operation or damage.*
- ⓘ ***DO NOT** switch receiver **High Speed/Normal Speed** mode when decoder is connected.*
- ⓘ ***Do not fly until inspection is complete.***

✱ *Futaba is trade name and/or trademark of their respective company and is not products of FrSky Electronic Co., Ltd.*

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