

# 3-channel SBUS/SBUS2 to PWM decoder

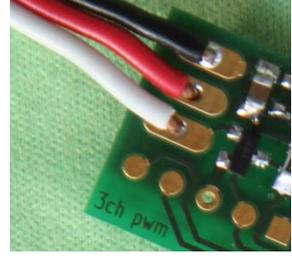
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## Connections & Use

- Decoder is delivered without SBUS connector cable & servo connectors.
  - User can minimize connectors by soldering servo wires directly to the decoder PCB.
  - Or 3x3 pin header to be soldered to enable servo wire connections.

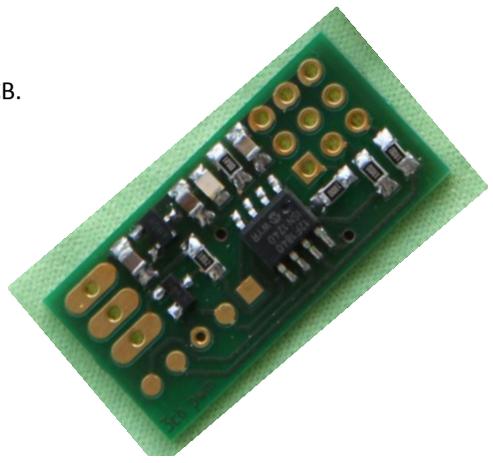
### SBUS Input side:

- SBUS Signal (White),
- Voltage(+) (Red),
- Ground (black)



### Servo connections:

- Separate PWM signals (White),
- Shared Voltage(+) (Red),
- Shared Ground (Gray)



<b>Voltage range</b>	3.5V - 10V (2S LiPo OK)
<b>PWM Voltage</b>	3.3V
<b>Servo update frequency</b>	14ms or 7ms depending on Receiver mode: <ul style="list-style-type: none"> <li>FASST™: 1/14ms</li> <li>FASSTest™ 18CH: 1/14ms</li> <li>FASSTest™ 12CH: 1/7ms</li> </ul>
<b>Servo PWM signal timing</b>	Virtually simultaneous PWM control:
<b>PWM signal</b>	<ul style="list-style-type: none"> <li>Min: 880µs</li> <li>Center: 1520µs</li> <li>Max: 2160µs</li> </ul> (equals to Futaba FASST™ receivers' PWM signal)
<b>resolution</b>	11 bits / channel, 625ns / step
<b>Channels</b>	16+2 depends on transmitter
<b>Max Current</b>	5A, depending on cooling & connecting cable.
<b>Compatibility (Tested with)</b>	Testattu <ul style="list-style-type: none"> <li>Futaba FASST™ R6203SB - SBUS</li> <li>Futaba FASSTest™ R7008SB - SBUS &amp; SBUS2</li> <li>Futaba FASSTest™ R7003SB - SBUS &amp; SBUS2</li> </ul>
<b>Dimensions</b>	30mm x 15mm x 4mm

- The Led is used to indicate channel setting status. The LED is ON all the time in normal use while there is valid SBUS or SBUS2 signal present. LED OFF indicates frame lost and if longer period failsafe will be activated. **Intermitted flickering is normal with Telemetry enabled FASSTest receivers due to telemetry functionality.**

**WARNING! Failure to comply may cause permanent damage:**

- Do not try to connect the decoder to transmitter's SBUS2 connector: Automatic channel setting is not supported;
- If DG1 or DG2 is programmed to control servo PWM make sure the servo can tolerate extreme movement (880µs & 2160µs)
- While soldering connectors and wires make sure no short circuits were created!
- Always protect the decoder with shrink tube - short circuits may destroy the device
- Always test whole system before flying.
- Keep Channel1 programmed around middle in normal use while powering receiver on: this prevents unintentional channel setting mode entry and accelerates power on. Channel1 can be used normally fex as Aileron.

### Channel setting method

- Preparations
  - Set **maximum servo travel** for Channel 1 (Ch1) and set Ch1 about center
  - Remove mixers that could move several channels simultaneously
  - Pair RX & TX (use 14ms modes!). Connect only SBUS decoder alone to Rx.
- Hold Ch1 either min or max (usually aileron stick to either side) while switching receiver power on.
- LED starts blinking steadily, move Ch1 immediately to the opposite end
- LED is solid ON, move stick immediately back to the same end as (2.)
- LED starts blinking fast. **CENTER Channel1 now!**
- LED starts blinking sequentially 1x, 2x, and 3x. This indicates PWM output of the decoder. Same PWM output is indicated until any channel movement is recognized. See (7):
 

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- Move significantly Some Channel (x) that is to be associated to the indicated PWM output. The LED gets solid for a while to confirm selection - at this phase do not move anymore any channels! For remaining outputs 6<sup>th</sup> & 7<sup>th</sup> steps will follow for 2<sup>nd</sup> (y) and 3<sup>rd</sup> (z) PWM output.
- The decoder confirms successful change of settings by blinking the LED quickly
- Switch receiver power off

**Disclaimer**  
 Manufacturer or seller of the decoder assumes no responsibility for possible damages or malfunctions caused directly or indirectly by the use of the decoder. Seller has no opportunity to ensure correct use of the decoder and sufficient testing before use. Also compatibility of other devices possibly used simultaneously in the same system cannot be verified by the seller or manufacturer.  
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