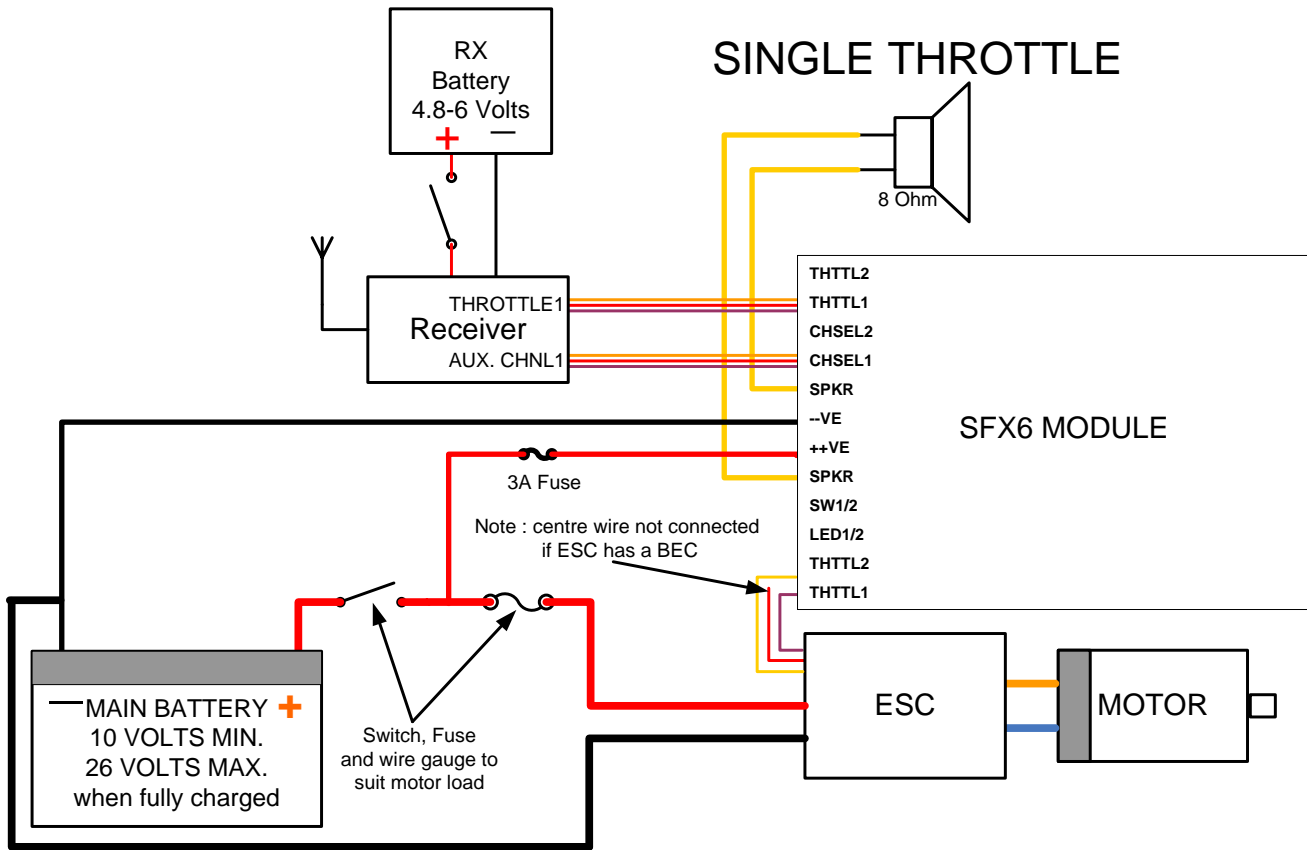


Supply voltage range : 10Volts – 26Volts

Loudspeaker Impedance : 8 Ohms – DO NOT use lower than 8 Ohms on voltages greater than 14V.

This is a Quick Start Guide only. For comprehensive instructions, please read the SFX6HWManual.pdf document in the Manuals folder on the SFXPC3 CD-ROM.

WIRING FOR ONE THROTTLE – WITH RECEIVER BATTERY



Please note : When using a separate battery for the receiver, if the ESC has an active BEC, the centre wire of the servo lead **MUST BE CUT**. This avoids the Rx. Battery and the ESC BEC “fighting each other”, which will likely severely damage the ESC. **For other wiring details, see the SFX6 Module Hardware manual on the CD-ROM.**

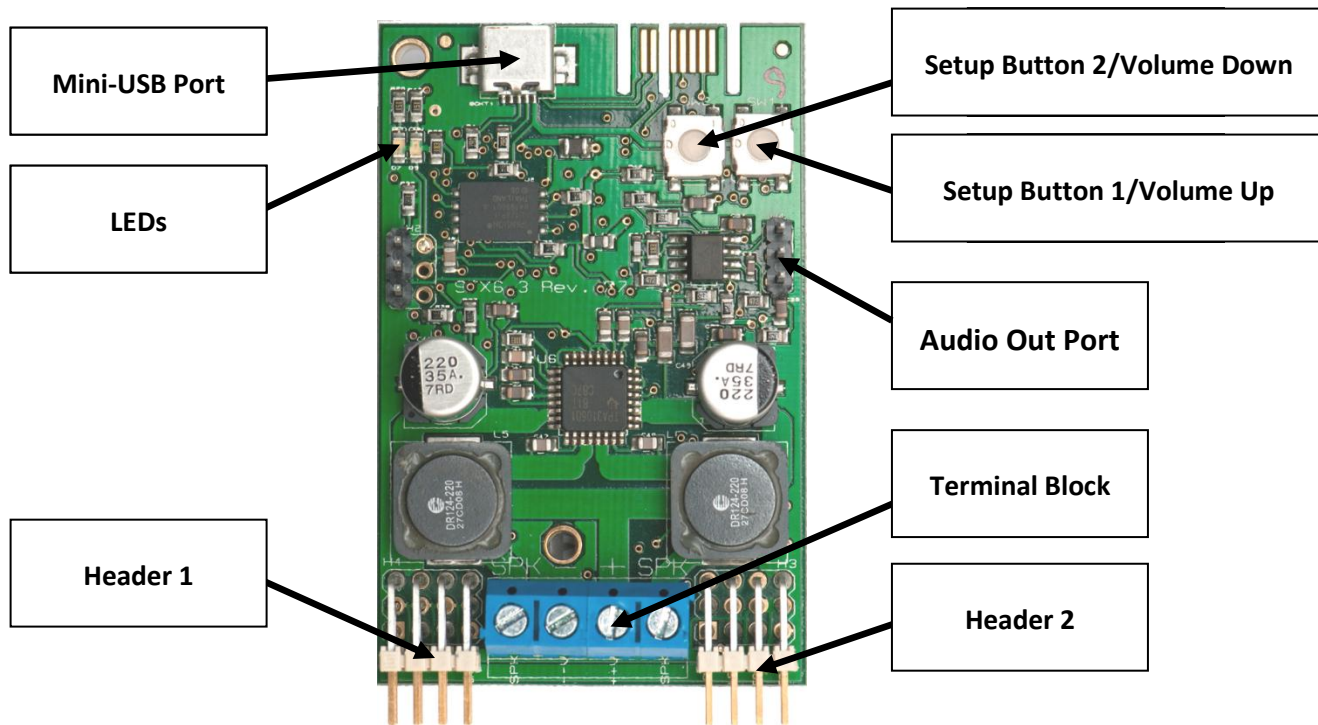
DO NOT CONNECT ANY RECEIVER lead to LED1/2 OR SW1/2. Your receiver will be fried if you do.

DO NOT REVERSE THE BATTERY CONNECTIONS. THE MODULE WILL BE DESTROYED IF YOU DO.

MODEL TANK CUSTOMERS – PLEASE SEE THE HW MANUAL FOR SPECIAL PROVISIONS FOR MODEL TANKS

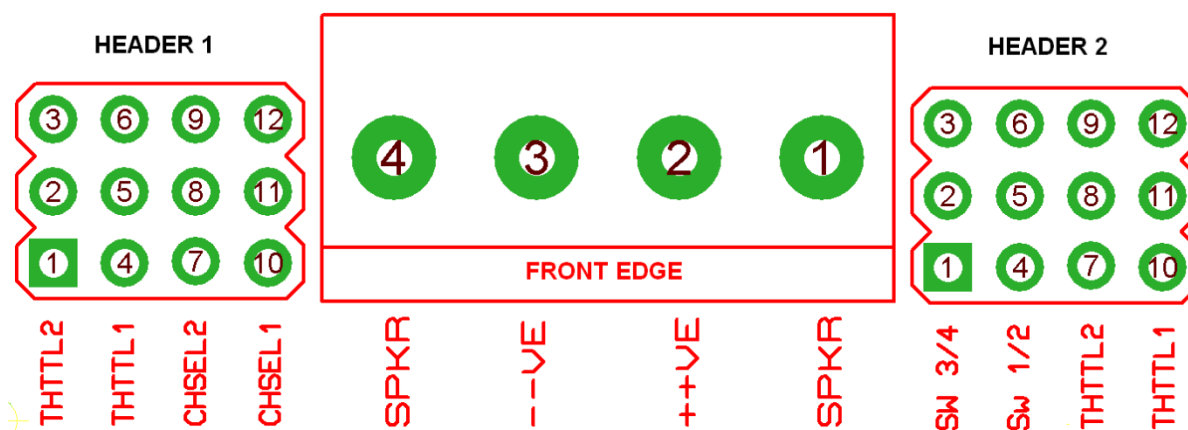
When installing, be sure to run separate power lines to the battery just for your module. If the power lines are shared with motor or ESC lines, the electrical noise generated by them will almost certainly interfere with the sound module. **It is highly recommended to have a 3A quick-blow fuse or circuit breaker in the power line as well as a switch.**

SFX6 SOUND MODULE CONNECTIONS



Power supply input and loudspeaker connections are made through the centre terminal block. All R/C receiver inputs for throttles and channel select are made at Header 1. Extra throttle connections, LED and switched outputs are made at Header 2. All these connectors are located at the bottom of the board. **Setup Buttons 1 and 2** are multi-purpose buttons having different functions at different times depending on what is happening at the time. In order to hear sound from the speaker, power (10V – 26V) must be on the main terminal block terminals 2 and 3.

TERMINAL BLOCK AND CONNECTOR H1/H2 DETAIL



Throttle connections **THHTL1/THHTL2** can be made at either **HEADER 1** or **HEADER 2**. These are straight through connections and allow the ESCs to also be connected to the receiver throttle signals without using a Y servo lead.

HEADER 1 Detail – Use male – male servo leads

Pin Numbers	Board Legend	Function	Notes
1, 2, 3	THTTL2	Throttle2 signal in from receiver. 1 is GND, 2 is receiver power, 3 is Throttle2 signal.	Receiver power is on pin 2
4, 5, 6	THTTL1	Throttle1 signal in from receiver. 4 is GND, 5 is receiver power, 6 is Throttle1 signal.	Receiver power is on pin 5
7, 8, 9	CHSEL2	Sound Select2 signal in from receiver. 7 is GND, 8 is receiver power, 9 is Sound Select2 signal.	Receiver power is on pin 8
10, 11, 12	CHSEL1	Sound Select1 signal in from receiver. 10 is GND, 11 is receiver power, 12 is Sound Select1 signal.	Receiver power is on pin 11

TERMINAL BLOCK DETAIL

Pin Numbers	Board Legend	Function	Notes
1, 4	SPKR	Loudspeaker - Do NOT use less than 8 Ohms	
2	++VE	Main Battery positive 10Volts – 26 volts	Do NOT reverse Battery leads!!
3	--VE	Main Battery negative 10Volts – 26 volts	Do NOT reverse Battery leads!!

Header 2 Detail – Use any servo connector and wire

Pin Numbers	Board Legend	Function	Notes
1, 2, 3	SW 3/4	Switched Outputs 3/4. 1 is SWITCH4, 2 is MAIN POWER, 3 is SWITCH3.	TAKE CARE!! Main Battery power is on pin 2
4, 5, 6	SW 1/2	Switched Outputs 1/2. 4 is SWITCH2, 5 is MAIN POWER, 6 is SWITCH1.	TAKE CARE!! Main Battery power is on pin 5
7, 8, 9	THTTL2	Throttle2 signal in from receiver (if present). 7 is GND, 8 is receiver power, 9 is THTTL2 signal.	Receiver power is on pin 8. Can be used to feed ESC2
10, 11, 12	THTTL1	Throttle1 signal in from receiver. 10 is GND, 11 is receiver power, 12 is THTTL1 signal.	Receiver power is on pin 11. Can be used to feed ESC1

NOTES :

- LEDs for guns etc. connect between their LED1/2 output terminals 4, 6 and a positive supply voltage which can be the same supply as the module on pin 5. **DO NOT** exceed 5A on each output or **10 Amps total** for all LED and switched outputs. Switched output loads are connected identically to the LEDs.
- It is highly recommended to include a 3Amp quick blow fuse in the power line to the SFX6 module. This protects, to some degree, against wiring errors.

3. The servo leads for Throttle and Channel Select inputs may be either Futaba style (black, red, white) or JR style (brown, red, orange). **The brown or black wire is always the GND, 0V or –VE connection and should always be inserted towards the outside of the receiver case and towards the board of the sound module.**

THROTTLE1 AND THROTTLE2 SETUP

The engine sounds are linked to the receiver throttle outputs. For most engine sounds, there are separate engine start-up and shutdown sounds. All these sounds are controlled by the position of the throttle controls.

The throttle neutral or off and maximum forwards and reverse (if applicable) throttle settings for your specific transmitter and receiver have to be stored in the module. This procedure also stores the neutral/off pulse information for the two **Channel Select** inputs.

As of release 3.1.1 the setup for this throttle information is completely automatic (by default). For the vast majority of cases, there is no throttle setup procedure required.

Simply wire up the module and start using it. You must ensure that your transmitter is switched on with the throttle sticks in their centre position (for forwards and reverse throttles) or in the OFF position (for forwards only throttles) BEFORE you switch on the receiver and sound module. The red/green LEDs will flash alternately quickly for about 5 seconds. During this time the module is setting itself up. At the end of this period, when you want to move the throttle stick, it **MUST** be moved in the forwards direction first. This tells the module which direction is forwards and which is reverse for forwards and reverse throttles.

The only exceptions to the Auto Setup method are :

1. If you want absolute precision over the throttle range selection mechanism right after power up or
2. If you are using the second engine sound as a gun turret turning sound, as in a model tank or a large warship.

If either of these two conditions apply then you have to configure the module to **NOT** use the Auto Setup feature. This is done using the SFXPC3 Windows Application **Control Panel->Hardware Tab** as detailed in the **SFXPC3SWManual.pdf** document in the Manuals folder on the SFXPC3.1.1 CD-ROM. Then you follow the Button Throttle Setup procedure as detailed in the **SFX6HWManual.pdf** document in the same folder.

CONTROLLING THE ENGINE SOUNDS

By default, the Engine Sounds are switched on and off by the throttle controls only. The engine sound increases in up to 32 steps of increasing pitch. These sounds can be recorded by you and added manually or, more usually, they can be generated automatically by the SFXPC3 software. You can choose 8, 16, or 32 steps. Usually 16 steps is sufficient for a very smooth response.

With some models, e.g. model tanks and some model aircraft, it is preferable to control the engine start-up and shutdown sounds using a switch instead of the throttle position. To do this, the Engine Sound Mode has to be set to "Switched with Sound Clip #" in the SFXPC3 Control Panel->Hardware Tab. Then, typically, you would add a NULL (empty) sound clip to be associated with the engine sound. Then when that sound is switched on, the engine start-up sound will play and continue to idle and when that sound is switched off, the engine shut-down sound (if any) will play, then stop. In this case, you usually make the NULL sound clip the first one in the Regular Sounds (i.e. sound clip #1).

In either mode the engine sound increases in pitch, from neutral to maximum forwards and from neutral to maximum reverse (if there is a reverse). If the throttle is forwards only, different behaviour is required since there is no reverse.

For both types of throttle (forwards or forwards/reverse), nudge the throttle control forwards a little (to step 1) and the corresponding engine sound will start playing. If there is a separate engine start-up sound, that sound will play and then continue to loop from its loop point. As you move the throttle stick forwards the engine sound will increase in pitch. You can set an adjustable "**Start Deadband**" in the SFXPC3 software to make the sound start at a specific "Step", rather than Step 1. This is useful for model aircraft where the propeller does not always start turning right away.

For Forwards/Reverse throttles, if the throttle is moved back to the neutral position the engine sound will continue to play in idle indefinitely. This is good for model boats and tanks. To switch off the engine sound, nudge it into reverse very slightly and **hold it there for about 2 seconds**. If you move it too far, the engine sound will continue to play with its increasing speed. If there is a separate engine shutdown sound, it will play then stop. If there is not a separate engine shutdown sound, the engine sound will stop after the 2 second delay.

CONTROLLING "REGULAR" (NON-ENGINE) SOUNDS

There are several ways of controlling the Regular (non-engine) sounds. The default method is to use a single on/off switch on the transmitter to control the sounds – this is called "**Switched R/C 1 x N**" mode since a single Transmitter switch is used to control many (N) sounds..

Alternatively, if you have a four channel transmitter and are controlling a land based vehicle, or a model boat, you can use one of the unused proportional stick channels to simulate a switch.

The different modes are selected in the **SFXPC3 Control Panel->Hardware Tab** and work like this :

“Switched R/C 1 x N” Mode : One transmitter ON/OFF channel is used to switch N sounds

1. Toggle Sound Select 1 **from OFF to ON and back to OFF** N times quickly to select sound N. After a timeout of about 1 second (adjustable), Sound N will start playing. This is “**Latched**” action. Repeat to switch Sound N Off.

OR

2. Toggle Sound Select 1 **from off to ON and back to OFF** N-1 times and then move to on position **and hold it there** – Sound N will play for as long as the switch is in that **ON** position. Release the switch to the **OFF** position to switch Sound N Off. This is “**Momentary**” action.

It is best to not use the **Latched** mode unless you really need to. That mode is meant for long playing sounds such as sonar pings etc. where you would not want to hold the switch/stick in the on position for too long.

For all other sounds such as guns, horns, Morse code etc. it is best to use the momentary mode by holding the switch in the on position for as long as you want that sound to play. That way you will be sure that when you release the switch/stick to the off position, that sound will stop playing.

“Switched R/C 1 x 1” Mode : One transmitter ON/OFF channel is used to switch 1 sound

If you need only one other non-engine sound such as a single gunfire or horn sound, you can configure the module to simply use one on/off Switch to switch that one sound. I.E. move the switch from its **OFF** to **ON** position to switch sound N On. Move it back to its **OFF** position to switch sound N Off. You set which sound is assigned to that switch using the SFXPC3 Control Panel->Hardware Tab – see the SW manual.

“Proportional R/C Mode” : One proportional channel is used to switch four sounds on/off

1. Move Tx stick half-forward for more than 1 second = Sound 1 Turns ON;
2. Move stick quickly full forward = Sound 2 ON;
3. Move Tx stick half-backwards for more than 1 second = Sound 3 ON;
4. Move stick quickly full backwards = Sound 4 ON;

1-4, above, are configurable for “**Momentary**” or “**Latched**” using SFXPC3.

“**Momentary**” action means that the sound plays only for as long as the stick remains in the position needed to switch it on. When the stick is returned to the centre position, the sound turns off. If you want to play more than one non-engine sound simultaneously, then one or both must be configured for “**Latched**” operation. This is so the first sound will remain on while you move the stick to switch the second sound on. “**Latched**” action means that you move the stick to the position needed to switch the sound on. When you return the stick to the centre position, the sound remains on. Then to turn it off, you repeat that procedure.