

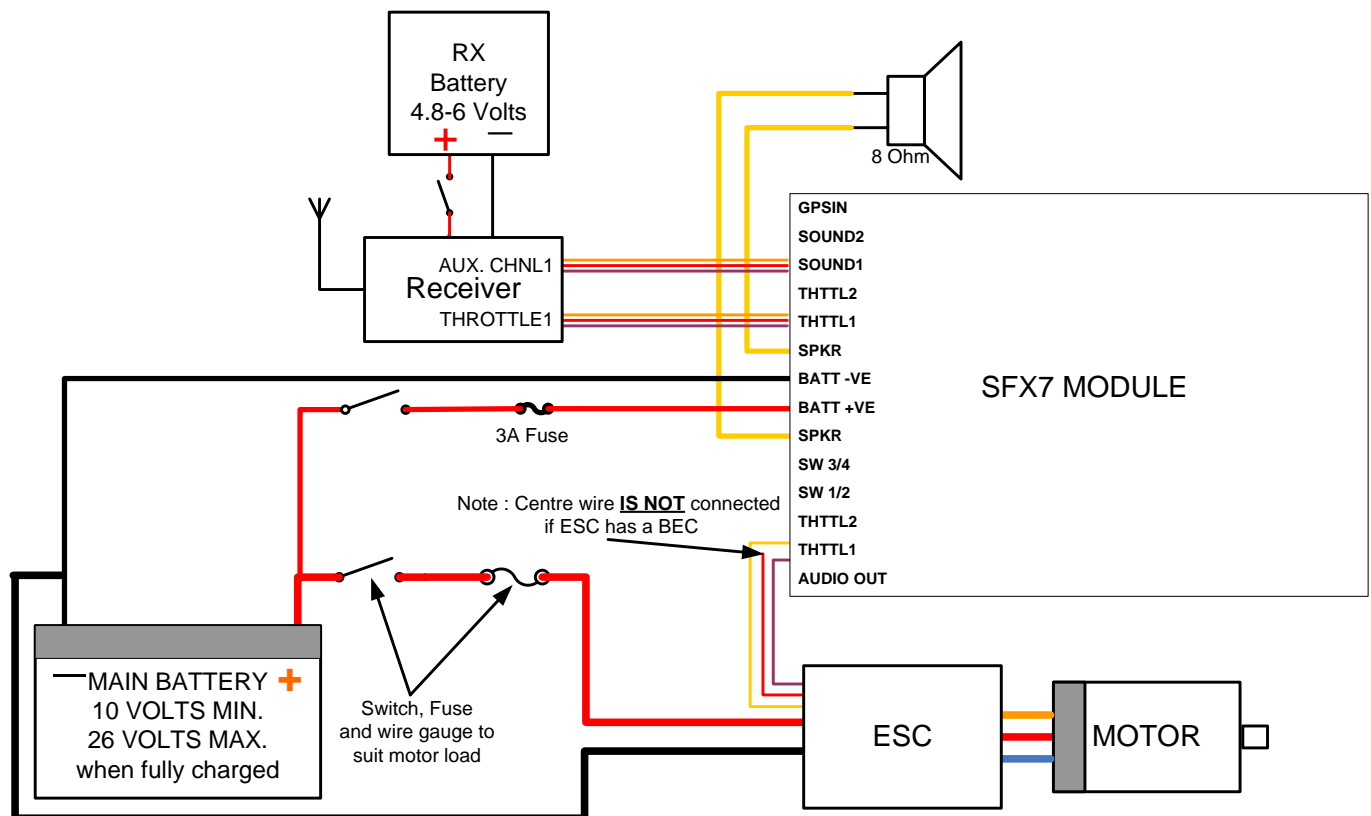
Supply voltage range : 10Volts – 26Volts

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 SFX7HWManual.pdf reference manual in the Manuals folder on the micro-SD Card that is in the sound module. Push to release the micro-SD Card from the Sound Module and insert it into the USB micro-SD Card reader included with the sound module or any other micro-SD card reader.

Insert the card reader into a free USB port on your PC and BACK UP the entire card.

WIRING FOR ONE THROTTLE – WITH RECEIVER BATTERY

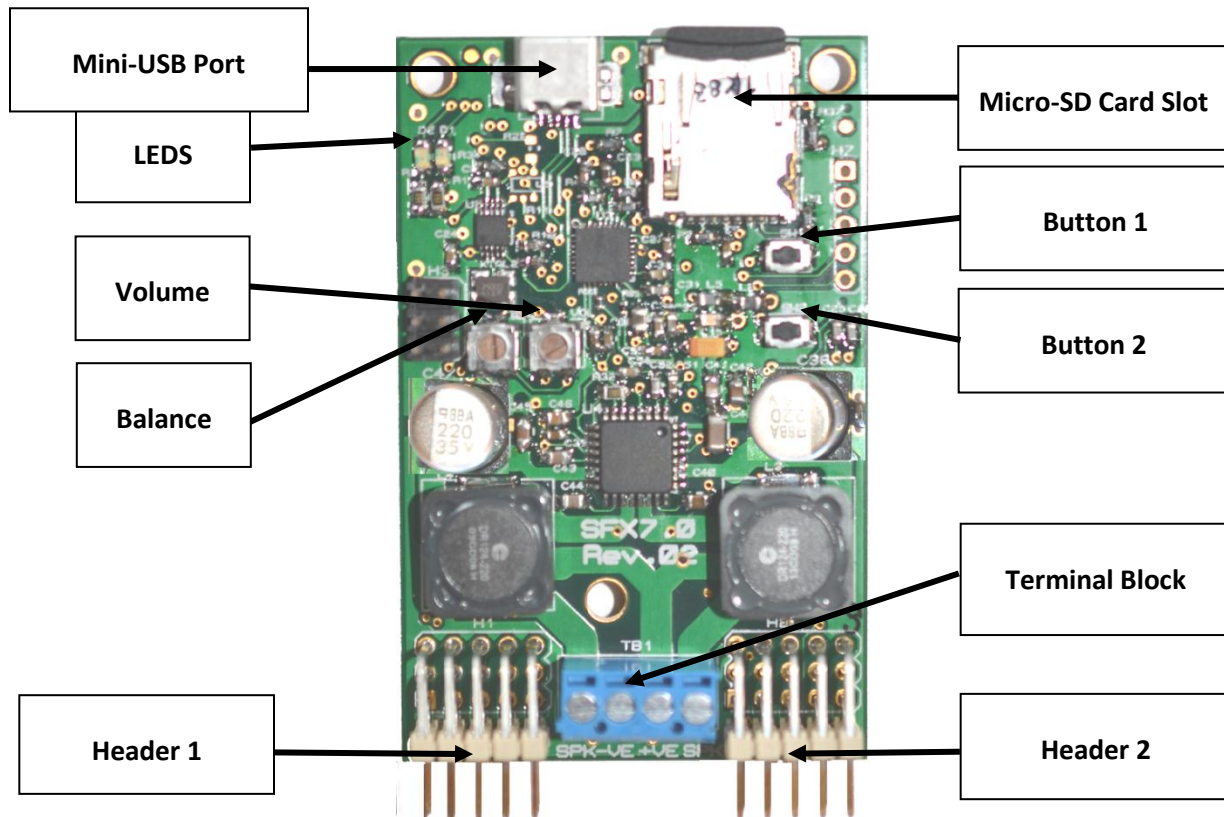


Please note : When using a separate battery for the receiver, if the ESC has an active BEC, the centre wire of the servo lead **MUST BE CUT**. This avoids the Rx. Battery and the ESC BEC “fighting each other”, which will likely damage the ESC. For other wiring details, see the SFX7 Module Hardware manual on the micro-SD Card.

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

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.

SFX7 SOUND MODULE CONNECTIONS



Power supply input and loudspeaker connections are made through the centre terminal block. All R/C receiver inputs for throttles and sound select are at Header 1. Additional throttle connections, optional switched outputs and audio line outputs are at Header 2. In order to hear sound from the speaker, power (10 – 26Volts) must be on the main terminal block terminals 2 and 3.

TERMINAL BLOCK AND CONNECTOR H1/H2 DETAIL



HEADER 1 Detail – Use Male-Male Servo Leads

NOTE: The silk screened markings on the board may have the THRTL1/SOUND1 and THRTL2/SOUND2 interchanged. The Board markings are incorrect. The markings in this manual are correct.

Pin Numbers	Board Legend	Function	Notes
1, 2, 3	GPSIN	Input from external GPS receiver for enhanced Doppler effects. 1 is GND, 2 is internal +3.3V power, 3 is GPS IN signal.	Do not draw power from pin 2
4, 5, 6	SOUND2	Sound Select2 signal in from receiver. 4 is GND, 5 is receiver power, 6 is Sound Select2 signal.	Receiver power is on pin 5
7, 8, 9	SOUND1	Sound Select1 signal in from receiver. 7 is GND, 8 is receiver power, 9 is Sound Select1 signal.	Receiver power is on pin 8
10, 11, 12	THRTL2	Throttle2 signal in from receiver. 10 is GND, 11 is receiver power, 12 is Throttle2 signal.	Receiver power is on pin 11
13, 14, 15	THRTL1	Throttle1 signal in from receiver. 13 is GND, 14 is receiver power, 15 is Throttle1 signal.	Receiver power is on pin 14

Terminal Block Detail

Pin Numbers	Board Legend	Function	Notes
1, 4	SPKR	Loudspeaker - Do NOT use less than 8 Ohms on voltages above 12Volts. 4 Ohms is OK on 10-12Volts.	
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

Pin Numbers	Board Legend	Function	Notes
1, 2, 3	SW 3/4	Switched Outputs 3/4. 1 is SWITCH4 , 2 is RECEIVER POWER , 3 is SWITCH3 .	Receiver power is on pin2.
4, 5, 6	SW 1/2	Switched Outputs 1/2. 4 is SWITCH2 , 5 is RECEIVER POWER , 6 is SWITCH1 .	Receiver power is on pin 5.
7, 8, 9	THRTL2	Throttle2 signal out to ESC1. 7 is GND , 8 is receiver power , 9 is THRTL2 signal.	Receiver power is on pin 8. Can be used to feed ESC2
10, 11, 12	THRTL1	Throttle1 signal out to ESC1. 10 is GND , 11 is receiver power , 12 is THRTL1 signal.	Receiver power is on pin 11. Can be used to feed ESC1
13, 14, 15	AUDIO	Line level Audio Out signals – 1.0V R.M.S. 13 is GND , 14, is Left Signal , 15 is Right Signal .	Used to feed external amplifier(s).

NOTES :

1. LEDs for guns etc. connect between their LED1/2 output terminals 4, 6 and a positive supply voltage which can be the same receiver 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.
2. 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 can be 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 **Sound 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 6 seconds. During this time the module is setting itself up and allowing the receiver outputs to stabilize. 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, you have to configure the module to **NOT** use the Auto Setup feature. This is done using the SFXPC4 Windows Application **Control Panel->Hardware Tab** as detailed in the **SFXPC4SWMannual.pdf** document in the Manuals folder on the micro-SD Card. Then you follow the Button Throttle Setup procedure as detailed in the **SFX7HWManual.pdf** document in the same folder.

TAKING CARE OF THE MICRO-SD CARD

As soon as you receive the SXF7 sound module, remove the micro-SD card and backup all its files onto your computer hard drive. A free USB micro-SD Card reader is included to assist with this.

The micro-SD Card connector has a latch i.e. you push the card in to insert and lock it and push it again to release the card for removal. During installation in your model or other testing it is possible to accidentally push the card in without noticing and it may then fall out and get lost. It is therefore advisable to put a piece of adhesive tape over the card and its connector to make sure this does not happen.

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 SFXPC4 software. You can choose 8, 16 or 32 steps. 16 steps is usually sufficient for a 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 **SFXPC4 Control Panel->Hardware Tab**. Then you would add a NULL (empty) sound clip to be associated with the engine sound. 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.

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 **SFXPC4 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 SFXPC4 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;