

## SHOCKWAVE 3 RADIO COMPATIBILITY

### RC INDUSTRY STANDARD PWM INPUTS ONLY ARE SUPPORTED

The **ShockWave 3** sound module is compatible with any radio control (RC) industry standard transmitter and receiver that outputs **1- 2ms PWM (Pulse Width Modulated)** pulses with a frame rate (repetition rate) between 50 and 100 Hz. Any RC radio can be used on any transmission frequency.

### SPEKTRUM SMART ESCS AND SIMILAR PRODUCTS ARE INCOMPATIBLE, BUT THERE ARE WORKAROUNDS.

Some RC receivers such as Spektrum, Jeti and possibly other brands, when used with their own manufacturer's SMART telemetry ESCs output the throttle signal in their manufacturer's proprietary digital data stream format instead of the industry standard PWM signal format.

That digital signal format cannot be interpreted by our ShockWave 3 sound module and it will think there is no valid throttle signal present and the engine sound will not work.

If you are using Spektrum radio products, there are several workarounds if that is the case as follows:

1. Use another brand of ESC that is not Spektrum SMART compatible.
2. Use another brand of receiver that is not Spektrum SMART compatible.
3. Use the provided SMART ESC with a different Spektrum SMART receiver with more than six channels and program your transmitter to output a duplicate throttle channel on another receiver output channel. Use the original throttle channel to feed the ESC and use the duplicated throttle channel to drive the sound module.

### TELEMETRY AND SOME GYRO STABILIZED RECEIVERS MAY CAUSE PROBLEMS

Telemetry equipped receivers can cause problems in two areas. Similar problems have also been found in Spektrum AS3X receivers.

The telemetry receiver is actually a transceiver (transmitter/receiver) which is receiving RC control signals part time and transmitting telemetry data back to the remote-control radio part time.

Because the ShockWave 3 sound module's RC inputs respond so fast they may be susceptible to picking up radio interference from the telemetry transceiver on the servo leads which can cause erratic control of the sounds.

For older ShockWave 3 boards earlier than Revision 10, i.e. Rev. 07 or Rev. 08, this can generally be corrected by using our special Resistor-Capacitor filter servo leads which are available at extra cost from us. Please email us at [contactus@modelsoundsinc.com](mailto:contactus@modelsoundsinc.com) for further details.

**Our latest Revision 10 boards, shipped since November 25 2021, have built in Resistor-Capacitor filters on the board, so any such interference should be a non-issue.**

## YOU MAY HAVE TO ADJUST THE STARTUP DELAY PERIOD

The **ShockWave 3** sound module must have stable RC inputs from the radio receiver before it can be used. There is an adjustable Startup Delay period that allows the **ShockWave 3** sound module to wait for the receiver to complete its own initialization and start outputting valid and stable RC pulses.

This delay period defaults to 6 seconds, as delivered from Model Sounds Inc. This is adequate for most receivers. However, some advanced receivers such as the gyro stabilized Spektrum AS3X series require considerably longer than this before it provides stable outputs.

If you experience unexpected startup behaviour of the sound module and non-sensical throttle-controlled engine sounds, then a **Startup Delay** period that is too short may be the cause.

In that case, you need to increase the Startup Delay period by editing the [BasicHardwareSettings.txt](#) file on the microSD card of the **ShockWave 3** module. It has a minimum value of 3 seconds and a maximum value of 20 seconds.

## PISTOL GRIP RADIOS ARE NOT SUPPORTED

We **DO NOT** support the use of pistol grip style radios which are popular with some model boaters. The extremely small range of throttle trigger movements on this type of radio makes it very difficult to start up and shutdown the engine sound unless you are using a separate switched radio channel for engine sound startup and shutdown.

If you want to use the throttle control to startup and shutdown the engine sound, you will have to use an airplane style stick radio instead.