

## SHOCKWAVE 3 RADIO COMPATIBILITY

### RC INDUSTRY STANDARD PWM OR SERIAL BUS RECEIVERS 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.

The most recent ShockWave 3 Revision 10 board when used with the new 5.1.3 release also supports various vendor's Serial Bus signals on its Serial Bus Inputs (Header 2). It can be used with the following serial bus types - Spektrum SMART SRXL2, Graupner SUMD, Futaba S.Bus, FlySky iBus, JRPropo XBus, Jeti ExBus, and Multiplex SRXL.

### 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.

1. 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.**

2. When using a Serial Bus receiver such as mentioned above, such as when you are connecting a Spektrum SMART ESC or any other serial bus device, you cannot connect the serial bus receiver line to the ShockWave 3 PWM inputs. These are the THTTL1, THTTL2, and SOUND1/2/3 inputs on Header H1.

The signal format on the serial bus is a digital data stream which the standard PWM inputs cannot interpret. In this case connect the serial bus line to one of the two identical SERBUS input pins on Header H2.

You cannot simultaneously use the PWM inputs at the same time as the serial bus input – connect one or the other.

## 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. To this end, 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.