# Instruction Manual

## SCC-001

## Contents

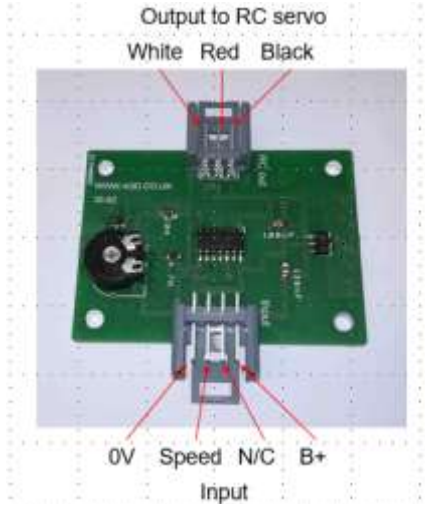


## 1. Description

The SCC-001 is a sound card control module that is designed to go between 4QD motor controllers and those sound cards that require a standard radio control input, such as the ESS-Dual from Sense Hobbies.

## 2. Connections

The SCC-001 was designed to work with the DNO series of controllers and can be plugged directly into the expansion port of the DNO. The pin connections are shown below.




The SCC-001 can also work with other controllers by feeding a speed related positive voltage into the speed terminal, and then adjusting the pot as required.
The SCC-001 has an upper voltage limit of 30V.

## 3. Adjustment

For use with the DNO the pot should be adjusted fully clockwise. This gives a full speed output for an input voltage of ~8V. For higher input voltages the pot should be adjusted so that the maximum output signal corresponds to the vehicle top speed.

## 4. Calibration

It may be necessary to calibrate the sound card to match its zero speed point to the zero speed output of the SCC-001.

The process below describes how to do this for the ESS-Dual, it may differ for other sound cards.

1. Switch on the DNO and the ESS-Dual.
2. Press and hold the + on the ESS-Dual until it gives a long beep to denote it has entered calibration mode.
3. Set the DNO to zero speed, press the + again to store the zero point.
4. Set the DNO to full ahead, give it time to reach full speed, now press + again to store the full ahead point.
5. Set the DNO to zero speed, give it time to stop, now press + again to store the reverse point. The ESS-Dual should now give another long beep and enter operating mode.

## 5. Auto-off

The ESS-Dual has an auto off function that switches the sound off after a preset time. We have found it useful to increase that time from the standard 3 seconds to 60 seconds. To do this you will need to download and install the RCPlus software from www.sensehobby.com. After this is installed, download the required sound file and install it, then click the settings icon and select the “engine” tab. You can now change the “idle delay” to 60, save the changes, go back to the “audio” tab and click “change” then “install” to write the new value to the ESS-Dual.

## 6. Output

The SCC-001 gives an output that corresponds to the standard radio control pulse width protocol. The truth table is shown below.

| Stick position | Controller output | SCC-001 output | Sound card response |
|---|---|---|---|
| Forward | Forward | 2.0 mS | Run |
| Centre | Off | 1.5 mS | Stop |
| Back | Reverse | 2.0 mS | Run |

## 7. Battery eliminator circuit

The SCC-001 provides a 5V supply on the RC output port which can support currents up to 100mA. This is enough to power most RC receivers, but any additional servos should be selected with this current limit in mind.