

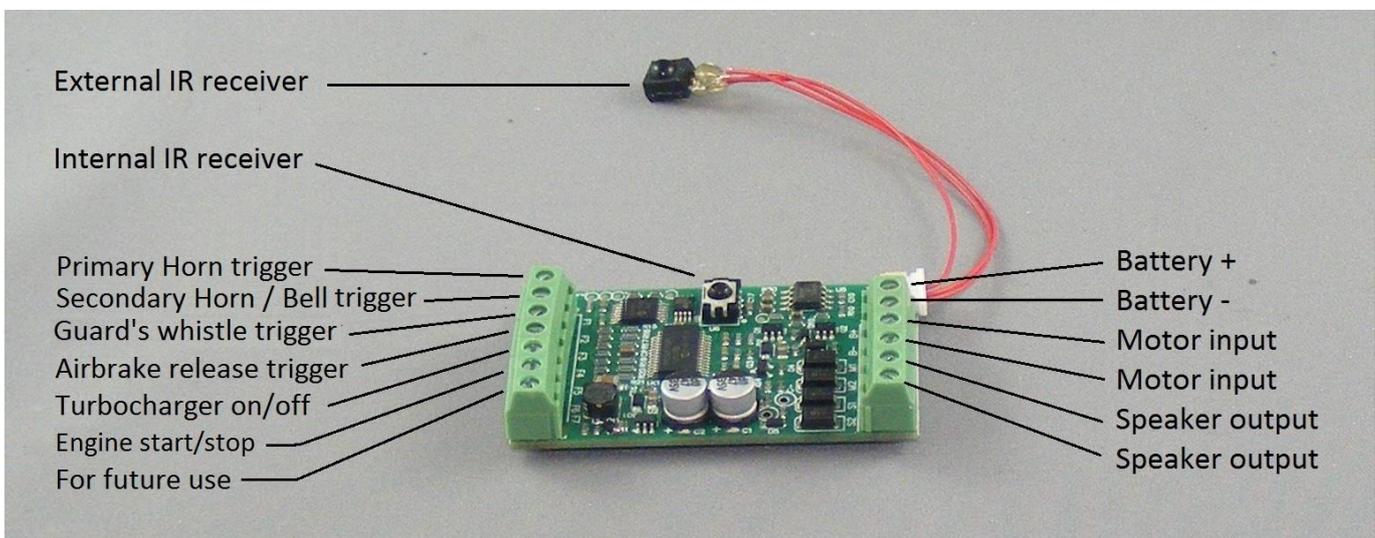
# MYLOCOSOUND

## UNIVERSAL SOUND FOR LARGE SCALE, DC, DIESEL LOCOS & RAILCARS

### 1. OVERVIEW

- Easy installation using screw terminals with no soldering.
- Uses a TV remote control to adjust the sounds to match the prototype loco.
- Provides an engine sound which matches the loco speed and load.
- Single and dual tone horns with adjustable tone to suit the loco.
- Full remote control of the horn, bell, airbrake, guard's whistle and optional turbocharger.
- For track powered DC or battery powered radio controlled railways
- Measures 55mm x 33mm x 11mm.

### 2. CONTENTS



The soundcard generates synthesised sound which is adjustable to reproduce the sounds of most diesel locos and railcars. The terminal connections on the right are necessary for the soundcard to generate diesel sounds which vary with the loco speed and load. The terminal connections on the left trigger the various sounds where the locomotive controller has the appropriate outputs available.

Sounds can also be triggered by a Sony infra-red TV remote control which you may have ordered with the soundcard or purchased locally yourself. Low cost, universal, TV remote controls are available from most consumer electronics stores and need to be set to Sony coding to work with the soundcard. Although it can be used when running in the garden, the remote control is intended mainly for the adjustment and testing of sounds.



The remote control communicates with the soundcard via two infra-red receivers. One is located on the soundcard and the other is on a flying lead which allows it to be fixed to any external surface of the loco. Adjustments to the sounds can then be made without taking the loco apart to access the soundcard.

### 3. SPEAKERS AND SOUND QUALITY

The soundcard requires an 8 ohm loudspeaker which is not included. A 4 ohm speaker can also be used but you may cause the soundcard to overheat and temporarily shut down if the volume is very high and the soundcard is in a confined space. Your choice of speaker is highly important because it determines the quality of the sound produced. A power output of at least one watt is recommended.



The lowest cost option is to fit speaker from your local consumer electronics store. Typically these come in 27mm or 57mm diameters. Use the largest which you can fit in your loco.



For a better quality sound and more volume, the speaker needs to be baffled. That means that it needs to be built into the front face of an airtight box so that sound is heard only from the front of the speaker and none from the back. The plastic top of a spray paint can is good for making a baffle as shown in the diagram.

A good solution, which ensures high quality sound with lots of deep throbbing bass, is to purchase an 8 ohm impedance external speaker unit for iPod and MP3 music players and remove the two speaker modules, in their enclosures, for use in two locos. These are readily available at consumer electronics stores.

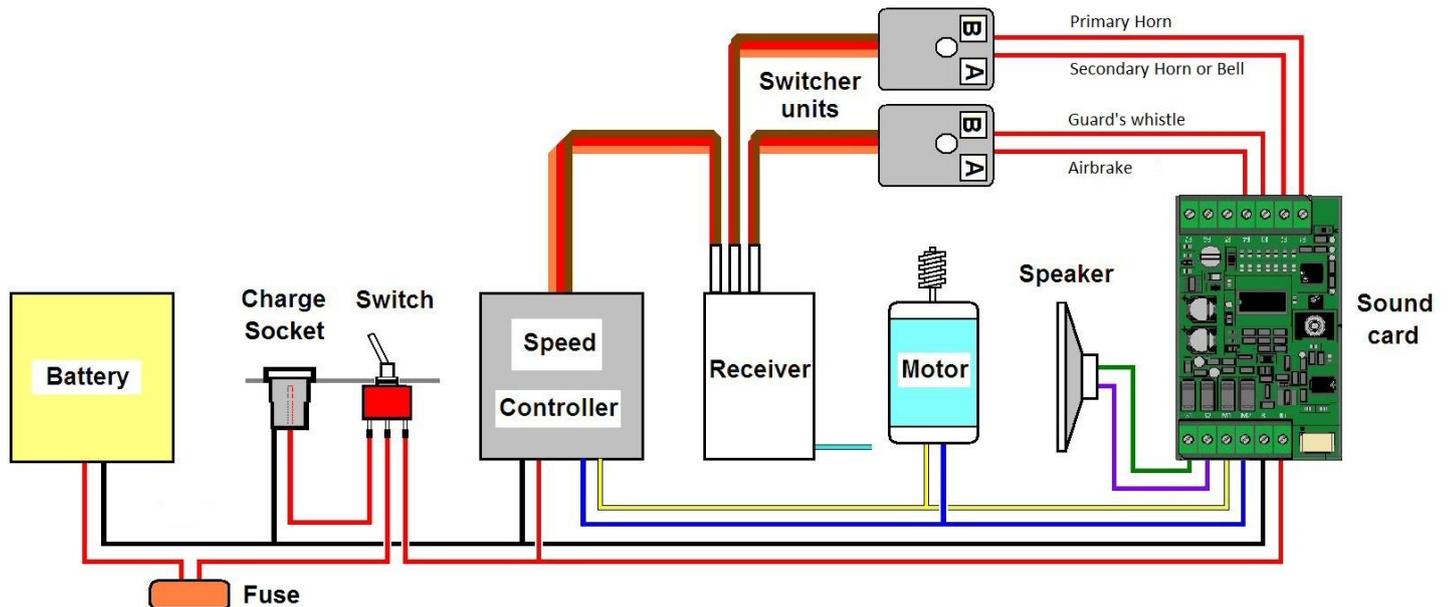


Speakers can be connected to the terminals either way around.



## 5. INSTALLING THE SOUND CARD IN A BATTERY POWERED LOCOMOTIVE OR RAILCAR

The wiring diagram below shows a typical installation for common types of battery powered radio control systems.

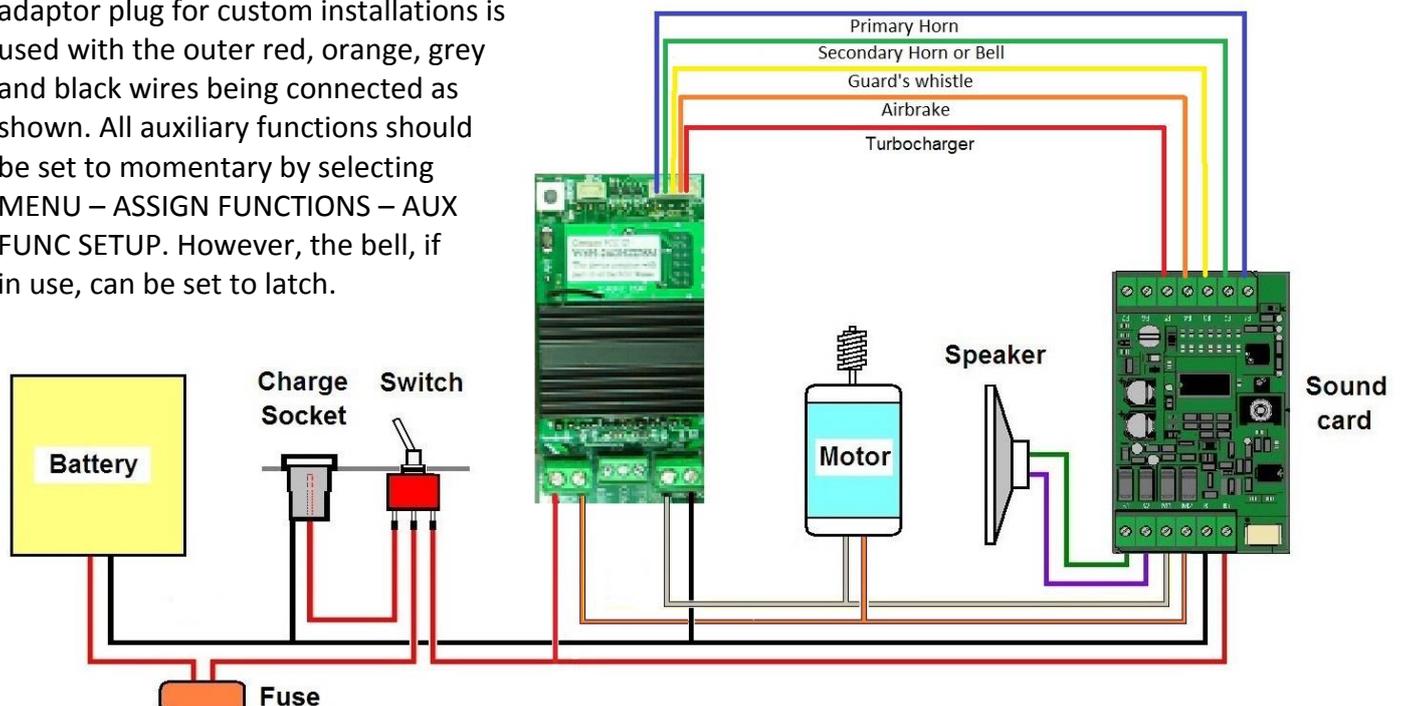


The receiver shown has two function channels, each of which can operate two triggers via two switcher units. The fifth soundcard trigger, the turbocharger, therefore cannot be radio controlled and will need to be switched on, if required, by the IR remote control.

The above wiring diagrams can be seen in colour by visiting the web site at [www.mylocosound.com/installs](http://www.mylocosound.com/installs). Also shown are specific wiring diagrams for RCS, Barker, Mac 5, RailBoss, Mtronics, Roundhouse, Electronise and LocoLinc.

The Crest Revolution can trigger all six sound functions and is connected as shown in the diagram below.

To connect the Crest Revolution, the adaptor plug for custom installations is used with the outer red, orange, grey and black wires being connected as shown. All auxiliary functions should be set to momentary by selecting MENU – ASSIGN FUNCTIONS – AUX FUNC SETUP. However, the bell, if in use, can be set to latch.



## 6. THE INFRA-RED RECEIVERS

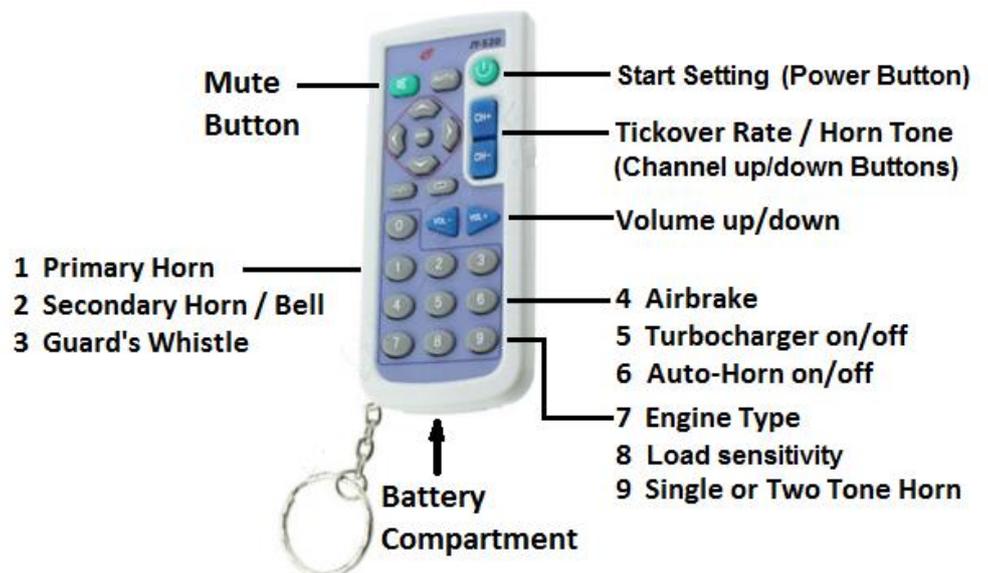
The infra-red receivers accept commands from the handheld remote control to adjust or trigger sounds. Two receivers are provided. One is fixed in the middle of the soundcard. The other is on a flying lead which plugs into the small white socket as shown on page one.

In some installations, the soundcard is visible when installed in the loco. This usually occurs when the soundcard is mounted on the floor of a cab, with or without windows. In this case, the remote control can be pointed directly at the soundcard and the on-board receiver is all that is needed.

If the soundcard is within the loco and is not visible then the flying lead needs to be used. Plug it into the white socket and glue the black receiver, round side outwards, to any external surface of the loco to which you can easily point the radio control. Do not paint the receiver.

## 7. THE REMOTE CONTROL

The soundcard will operate with any Sony™ TV remote control using the buttons described in this section. It will also operate with any universal remote control when it is set to Sony coding. MyLocoSound can supply a suitable remote control, the one illustrated here, or they can be purchased from your local consumer electronics store, Kmart, Good Guys, etc. for less than \$20. You will probably find a number of



codes listed for Sony and will need to try each one until you get to the code which operates the soundcard volume, mute and function buttons correctly. The code for Audiosonic remote controls from Kmart is 0188.

The MyLocoSound remote control comes with a CR2025 or CR2032 battery fitted but isolated. From the battery compartment, pull out and discard the plastic tab to activate the battery. It is a universal device which has been pre-programmed to Sony™ coding. Do not hold down the mute button for more than a second since this can cause the remote control to lose its coding. If your remote control stops working then please refer to the Trouble Shooting Guide at the end of these instructions to re-establish the coding.

Other, locally purchased universal remote controls will usually have a battery compartment in the back and their own instructions for setting Sony coding.

Note that the buttons on the remote control auto-repeat if held down. If you want a single event to occur, like turning on the safety valve, then press the safety valve and release it immediately. If you want to make a large change in volume or tone then you can hold the button down to avoid the need to press the button repeatedly.

## 8. CONFIGURING THE SOUND CARD

There are two versions of the diesel soundcard; one for American locos and one for Australian. The differences are:

	Function Terminal	Remote Control Button	
American	2	2	Controls a bell
	3	3	Sounds "All aboard"
Australian	2	2	Controls an alternative horn.
	3	3	Sounds a guard's whistle.
	6	Mute	Starts and stops the engine.

There are a few settings which need to be specified to match the sounds to the particular locomotive or railcar. Place the loco on the track and switch it on. Then proceed as follows:

- **Turbocharger.** Press button 5 to turn the optional turbo charger on or off. You should hear it.
- **Engine type.** There are five different engine options on the 7 button of the remote control. When the button is pressed, the number of beeps indicates which option is now selected. The three, four and five beep options are the same basic engine but operating in three ways. Three beeps is for diesel mechanical engines and will go through two gear changes as the speed is increased. Four beeps will cause the engine to increase linearly. Five beeps will produce a louder exhaust sound as the engine is notched up.
- **Control mode buttons.** Press the 6 button on the remote control to change the control mode.
  - One beep – Indicates manual mode. In this mode all sounds are triggered only by pressing a radio control function or by using the remote control buttons. The horn will sound for as long as its button is pressed.
  - Two beeps – Indicate simple automatic mode. This is designed for controllers which have no function buttons, as is often the case with track power, or at exhibitions, etc. where you don't want to operate manually. The horn will sound once automatically when the loco moves off and then once more three times a minute when the loco is on motion. A reed switch can be placed under the loco and be connected to the F1 terminal to make the horn sound when the loco passes over a magnet. Another reed switch, connected to the F2 terminal, can be used to trigger the bell which will turn on when crossing a magnet and then off at the next magnet.
  - Three beeps – Indicate American automatic mode. Again this is designed for controllers which have no function buttons, as is often the case with track power, or at exhibitions, etc. where you don't want to operate manually. However, it follows American rules.

The horn will sound two long toots when the loco moves off forwards or three short when backing up. If these occur the wrong way around then reverse the leads at the M1/M2 terminals. When the loco stops, a single short toot will indicate brakes on. A reed switch can be placed under the loco and be connected to the F1 terminal to make the horn sound the grade crossing sequence when the loco passes over a magnet.

Another reed switch, connected to the F2 terminal, can be used to trigger the bell which will turn on when crossing a magnet and sound for a set time. This time is set using the remote control. Press button 2, let the bell sound for the desired time and then press button 2 again to stop it. The bell will then ring for that time when the F2 terminal is triggered.

- **Horn type.** Press the 9 button on the remote control. A single beep means that the soundcard is set to European two tone horns. A double beep means that the soundcard is set to single tone horns. Three beeps is for more modern US horns.
- **Bell.** If the horn is set to two or three beeps then a bell becomes available on function 2. Bells are not used in Europe so, if a one beep horn is selected then the bell on function 2 is replaced with a short horn.
- **Horn tone and volume.** Press the 1 button to start the horn. Use the channel up/down buttons to set the tone and the volume up/down buttons to set the volume.
- **Bell volume.** If you are using a single tone horn then the 2 button will sound the bell. Use the volume up/down buttons to set the bell volume to the desired level.
- **Setting the engine tick over.** You should hear the engine. If not then press the Mute button to switch on the sound. Use the channel up/down buttons to set the engine tick over rate to the desired level and the volume up/down buttons to set the volume.
- **Setting the engine start voltage.** Turn up the controller to the point where you want the diesel engine to start revving up. Then press the Power button to set that start point. Further increases in power should cause the engine to speed up.
- **Setting the engine running speed.** When the loco is in motion, even at slow speed, you can use the channel up/down buttons to set the rate at which the engine speed increases with loco speed.
- **Setting load sensitivity.** The soundcard can be programmed to make the engine loud when accelerating and softer when coasting and slowing down. This button changes the level of sensitivity as indicated by the number of beeps when pressed. One beep indicates maximum sensitivity. Five beeps sets minimum sensitivity. We suggest you start by setting the sensitivity to two and change to one if you want more sensitivity or three or more if the engine sounds erratic. The sensitivity will rotate back to one beep after five.

You can change these settings whenever you wish and those changes will be effective immediately.

Holding down the 3 button for two seconds will cause the soundcard to reset itself back to its factory defaults. These include a dual tone horn and diesel electric engine.

## 11. OPERATING THE SOUND CARD

When the loco is running, the engine sounds should operate automatically, getting louder when accelerating and softer when slowing down or idle.

Where your controller has function buttons then you can use them as follows:

- Button 1. Sounds the main horn.
- Button 2. Operates the bell in the US version or a short horn otherwise.
- Button 3. Sounds "All aboard" in the US version or the guard's whistle elsewhere.
- Button 4. Sounds the airbrake release.
- Button 5. Turns the turbo charger on and off.

## 12. TROUBLE SHOOTING GUIDE

### THE REMOTE CONTROL WON'T WORK

Start the soundcard, press any button on the remote control and the LED should flash. If it does not flash then the battery probably needs replacing. If the LED flashes but the soundcard does not respond then the Sony™ coding may have been lost and can be reset as follows.

**If using a MyLocoSound remote control**, switch on the van or loco so that you get the steam hiss. Point the remote control at the receiver and do the following:

1. Hold the mute button down. The remote control will go through its list of codes until it gets to the correct one at which time the sound will go off. When that happens, let go of the mute button immediately. The correct code should now be selected.
2. Test the remote by pressing the mute button again to turn on the sound and then test the functions. It may not work and you may have to try several times. Releasing the button immediately when the sound stops is critical.

**If using a locally purchased remote control** then refer to its instructions for resetting the Sony coding. You will probably find a number of codes listed for Sony and will need to try each one until you get to the code which operates the soundcard volume, mute and function buttons correctly. The code for Audiosonic remote controls from Kmart is 0188.

If the remote control still does nothing then the problem may be the infra-red receiver on the loco which must not be painted or obstructed.

### I GET NO SOUND AT LOW SPEEDS WHEN USING TRACKPOWER

On trackpower, you may get no sound at low speeds until the track voltage gets up to about nine volts. This indicates that the support battery is flat. Charge the battery by running the loco at half speed for ten minutes.

### I GET NO SOUND AT ALL

Press the Mute button on the remote control in case the sound has been accidentally turned off.

Switch the loco off and then on again. When the soundcard starts, the LED should flash three times. If not then use a multimeter to check that there is at least nine volts at the B+ and B- terminals. If not then check your wiring in case something has come adrift.

Check that the speaker is connected correctly.

### THE SOUND CARD MAKES A CLICKING NOISE OR SHUTS DOWN

This most often occurs when the horn is sounded. It is caused by the soundcard restarting because there is insufficient voltage in the track or the battery to sustain the volume setting. Recharge the battery.

### WHEN INSTALLED IN A LOCO, THE LOCO AND SOUND STOP INTERMITTENTLY AND I HAVE TO RESET THE CONTROLLER TO GET IT GOING AGAIN

The soundcard maximum output is 1.5 amps. If this is exceeded as a result of a large motor, a heavy load and/or high volume settings then the soundcard will shut down. Also, if the soundcard is installed in a very confined space and is run for a prolonged period at high power then it can overheat and switch itself off while it cools down.

## HOW TO RESET YOUR SOUND CARD

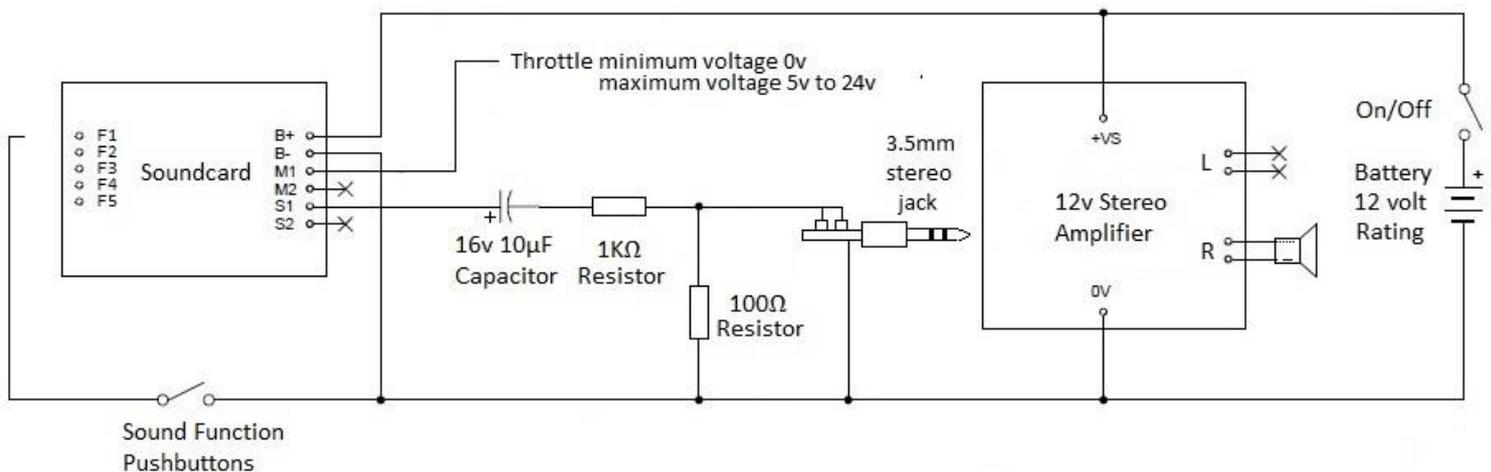
A time may come when you have been adjusting the sound and you want to start again. This can be achieved by resetting the soundcard back to the settings when it left the factory. You can do this by pressing the 3 button on the remote control and hold it down for two seconds. The soundcard will beep three times when the reset is complete.

## 13. USING AN EXTERNAL AMPLIFIER FOR RIDE ON RAILWAY LOCOMOTIVES

When used in 5 inch and 7¼ inch ride on railways there is a lot all environmental noise. The one watt output of the soundcard is not sufficient for these environments and an external amplifier needs to be used. The wiring diagram below shows how the soundcard can be interfaced to a commercial stereo amplifier in a loco powered by a 12 V battery.

A 24v battery powered loco will require a 24v to 12v DC converter as shown alongside. Note that the soundcard can handle a maximum of 24 volts DC. A battery which is labelled as 24 volts will typically output 28 volts when fully charged and will therefore damage the soundcard if connected directly.

In Australia, the 2x15 watt AA0487 amplifier from Jaycar is suitable. Other amplifiers may require the 100Ω resistor to be changed. If the output volume is too low then raise the value of the 100Ω resistor.

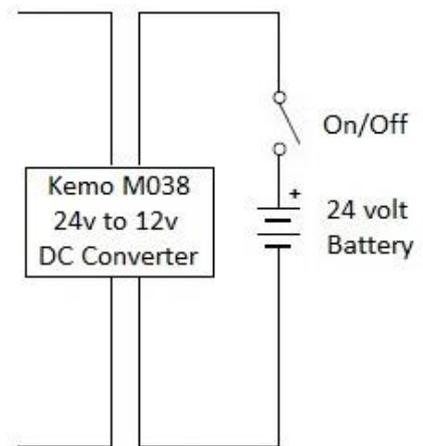
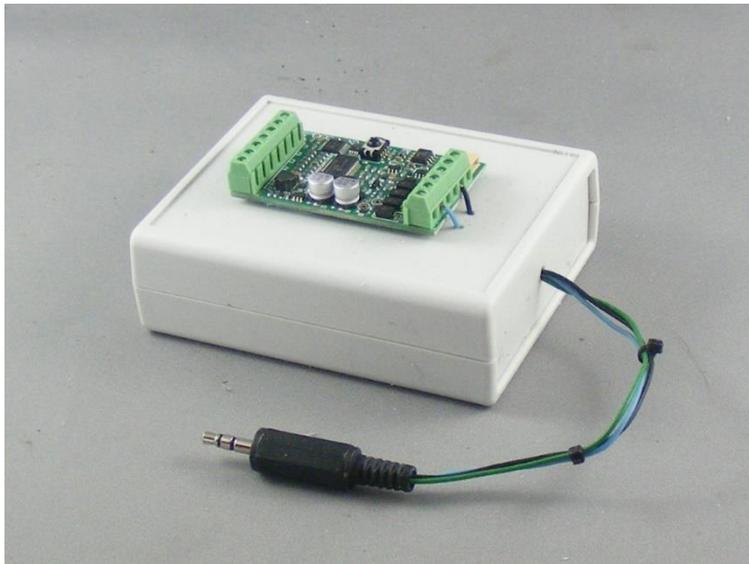


A single speaker can be used on the right output or two speakers on the left and right outputs.

Any of the five functions can be used by means of a pushbutton between the function terminal and ground. The sound functions available are whistle, bell, guard's whistle, safety valve and brake pump.

The installation can be made more robust by using two blobs of silicon to attach the soundcard to a plastic box in which the capacitor and two resistors are placed as shown above. The whole can then be fixed to the top of the amplifier, again using silicon.

Select a speaker which matches the impedance and power output of the amplifier. In the case of the Jaycar AA0487 a 15 watt speaker of four ohms impedance is needed. It is also important to make a soundbox which is an airtight fit to the back of the speaker. This will improve both volume and sound quality.



PLC009 Diesel Instructions Australia.doc 04/03/17 Version 14

For more information, please visit the web site at [www.mylocosound.com](http://www.mylocosound.com) or e-mail [sales@mylocosound.com](mailto:sales@mylocosound.com).

Copyright © 2013-7 Peter Lucas Consulting Pty. Ltd.

Remote Control	Radio Control	Defaults shown in grey	
<b>Power</b>		Set Start Voltage for Rev Up	
<b>VOL up/down</b>		Change Volume of active sound	
<b>CH up/down</b>		Change Sound	Horn Tone when horn sounding
			Engine tickover rate when static
			Engine rev rate when moving
<b>Mute</b>		Sound on/off	
<b>Button 1</b>	<b>F1</b>	Horn	
<b>Button 2</b>	<b>F2</b>	Bell (American) or Horn 2	
<b>Button 3</b>	<b>F3</b>	All Aboard (American) or Guard's Whistle	
<b>Button 4</b>	<b>F4</b>	Brake release	
<b>Button 5</b>		Turbocharger on/off	
<b>Button 6</b>		<b>Control Mode</b>	
		1 beep	Manual
		2 beeps	Auto horn every 20 secs
		3 beeps	Auto horn with Track Magnets
<b>Button 7</b>		<b>Engine Type</b>	
		1 beep	Engine 1
		2 beeps	Engine 2
		3 beeps	Engine 3 – Mechanical with 2 gear changes
		4 beeps	Engine 3 – Electric with no gear changes
		5 beeps	Engine 3 – Electric with exhaust noise
<b>Button 8</b>		<b>Load sensitivity 1 to 5, Default=2</b>	
		1 beep	Engine maximum sensitivity to power changes
		2 beeps	Engine average sensitivity to power changes
		5 beeps	Engine minimum sensitivity to power changes
<b>Button 9</b>		<b>Horn Type</b>	
		1 beep	European two tone horn
		2 beeps	Heritage diesel horn
		3 beeps	Modern diesel horn
	<b>F5</b>	Not used on American version, starts and stops engine on Australian	
	<b>F6</b>	Not used	
	<b>F7</b>	Not used	
<b>Button 3 Held For more than 2 seconds</b>		Reset above settings to defaults	