

Venturer Models

Adding lights and sound to your Venturer Models locomotives and rolling stock.

In conjunction with:-

Fosworks (Radio Control)

DC Kits / Legomanbiffo Sound Projects / ESU Soundcards

VM32-CL37-DCC Pack#1

B.R. Diesel Electric - Class 37 Co-Co



The Venturer Models kits can be provided with supplementary wiring looms suitable for enhancing your models with realistic lighting and sounds through Radio/DCC Sound provided by Fosworks (radio and speed controllers), and DC Kits/Legomanbiffo (supplying sound projects specifically for Venturer Models and Kits).

If you require Radio Control and/or DCC Sound/Lighting for your model then this can be purchased through Venturer Models, or directly from Fosworks and DC Kits.

HOWEVER, please ensure that if ordering directly from Steve at Fosworks or Charlie at DC Kits that you make clear that you require your equipment for use with a Venturer Models locomotive. This is important because the equipment they provided is specifically tailored for use with Venturer Models wiring looms and systems. If you do not do this, then your DCC/Soundcard may not work correctly with the wiring loom provided by Venturer Models.

Q/ [What does the VM32-CL37-DCC Pack#1 contain?](#)

The Venturer Models VM32-CL37-DCC Pack#1 provides you with the wiring looms, circuit board, micro-processor, LED lights (for head-codes (warm white), cabs (yellow), warning lights (red), and high-intensity lights (white)), fan controller and the DCC mounting board ready to receive the ESU 21pin Sound card and speaker wiring.

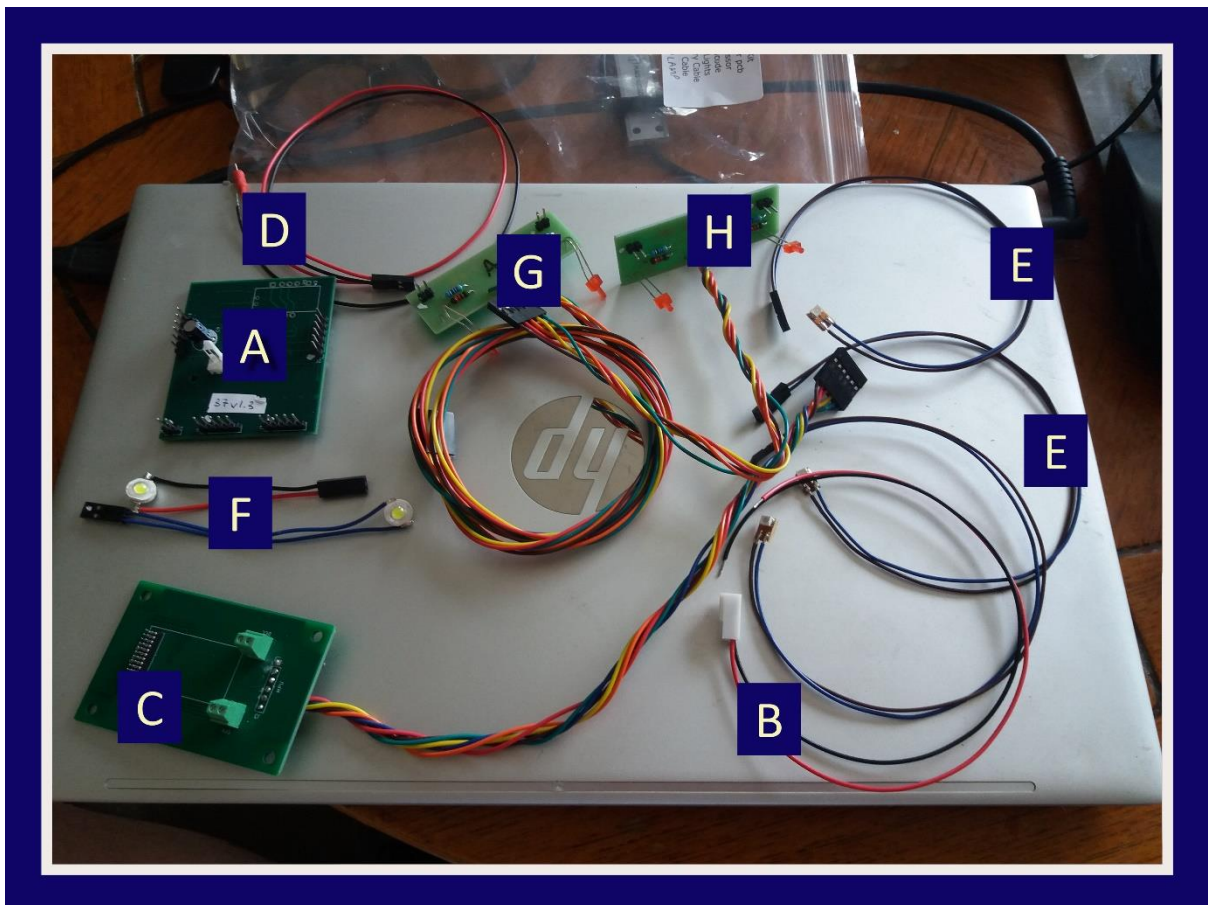
NOTE: The pack DOES NOT include the ESU 21 pin sound card, radio handset, radio receiver, DCC feed, battery or motor controller – these are provided separately, either through Venturer Models (contact us) or may be sourced directly from Fosworks and DC Kits (please take note of the commentary above!).

The [VM32-CL37-DCC Pack#1](#) is intended to be used in conjunction with the Radio/DCC/Sound cradle mount supplied with your kit, or with this pack if not supplied previously with your kit.

Instructions For Fitting the Wiring Looms in conjunction with Radio/DCCSound.

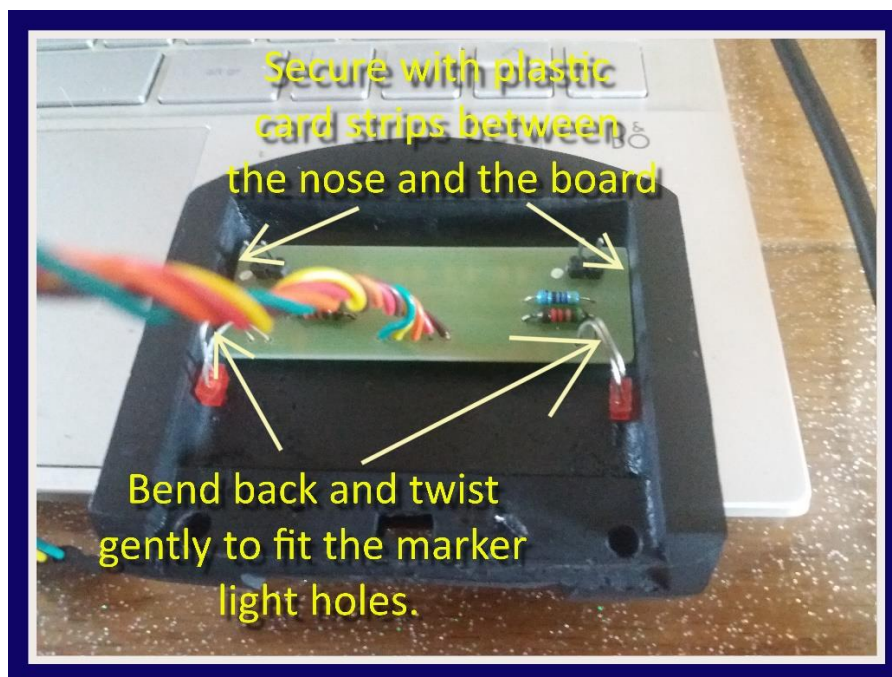
Inside your Pack you will have the following items:

- A - 1x Motherboard (fitted behind the cab bulkhead using mounting block provided with the kit)
- B - 1x Motherboard power lead (fitted to the 12-18V main battery supply)
- C - 1x DCC Soundcard mounting plate (leads run to the "J2" 6-pin Motherboard connection)
- D - 1x Fan power lead (Red/Black with small resistor already soldered on end of red wire)
- E - 2x Cab light leads with small yellow LEDs
- F - 2x High Intensity Lights (if applicable to your model. Only for "modern" refurbished locomotives)
- G - 1x "A" End lighting board (with LEDs pre-fitted ready for positioning, and female 5-pin connector to "J3")
- H - 1x "B" End lighting board (with LEDs pre-fitted ready for positioning, and female 5-pin connector to "J4")



Recommended installation for Venturer Models Wiring Looms:-

Firstly, test fit the nose lighting boards “G” and “H” in the nose recesses of your model. The “G” board with the longest wires fits at the opposite end to the bulkhead chosen to fit the Motherboard (Usually “B” End away from the fan, but this is not essential and either end is fine as you may prefer). The red marker LEDs will need carefully bending back on themselves into position to fit into the holes in the nose. Note that the LEDs will provide the red light, but the “top hat” post is not used for the lens on the cab front. This is made up from a short length of fibre-optic plastic rod separately. All you are looking to do is align the top-hat red marker LEDs in the holes at the back of the cab. The four warm white LEDs align behind the main head code block.

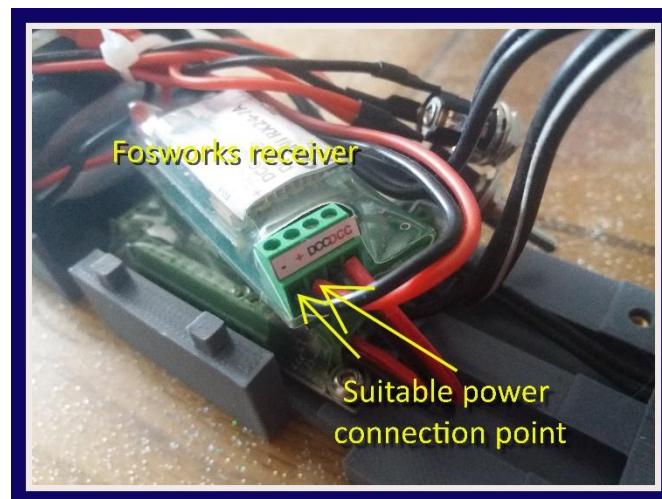


When happy with the test fit, use drops of canopy glue to fix the top-hat red marker lights in place. I add two strips of spare plastic card to each side of the nose lighting boards and, using small amount of superglue, also fix the board in place behind the head code recess in the nose.

Next, take the Motherboard “A” and screw the small trapezoid fixing plate to the back of the board using the 3mm flanged machine screws. Now position the Motherboard behind the cab rear bulkhead selected for installation (usually at “B” End – opposite end to the fan). Just be sure that it is the opposite end to where you fit the “G” long length nose lighting board, as the long wires need to run the length of the body to meet up with the 5-pin Motherboard fixing at either “J3” or “J4” on the motherboard.

When happy with the location of the motherboard, superglue the trapezoid fixing plate onto the back of the bulkhead. You now have the fixing plate secured to the back of the cab bulkhead, and you can remove and replace the motherboard using the 3mm flanged fixing screws whenever needing to do so.

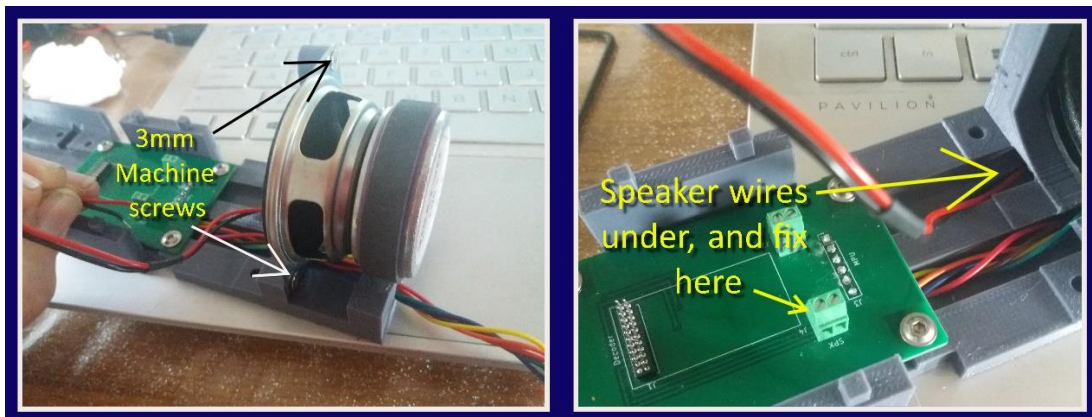
Note that there is a white, 2-pin connector towards the middle of the Motherboard. This is for the Motherboard power supply wire “B”. The white terminal fits one way round only, and the red wire should be attached to the red output from the battery, and the black wire to the black output wire from the battery. A suitable place to make these connections is at the screw fixing power feed points going into the Fosworks Radio receiver (take care to be sure you connect to the battery + and -, and not the DCC [they’ll be marked clearly on the Fosworks radio set]).



Now we'll turn our attention to the wiring on the Radio/DCC/Sound cradle mount. Firstly, using a Dremel or scalpel, cut two slots in the 3d printed cradle as shown. The slots need to be about 3mm wide – just enough to lay the wires from the decoder mounting board “C” through. Un-twist about 10mm of the wiring under the mounting board so that the wires will lay flat, and the mounting board will sit flush with its fixing holes. Once happy, secure using 4 flanged 3mm machine screws provided (screw them directly into the plastic, but do not over-tighten as you may strip the thread created).

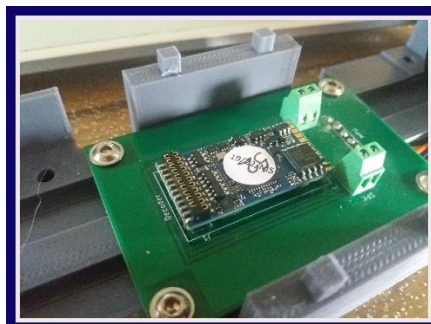


Next, secure the Fosworks speaker to the cradle mount supplied with your kit using two 3mm machine screws (do not overtighten). Make sure you align the speaker wires so that they neatly run the wires under the speaker through the notch in the 3d printed mount, and back towards the centre of the cradle mount. The wires will connect to the sound card mounting board which we'll address below.



When you receive the ESU DCC Soundcard it will have a micro-speaker attached. Whilst it is not necessary to removed this, we do carefully unsolder the speaker because the 21-pin card sits better on the mounting plate "C" with the solder from these two fine wires removed.

Once unsoldered, carefully lower the soundcard onto the 21-pin mounting card "C" as shown and gently press home.



You can now mount the Fosworks radio battery on the other side of the cradle. The cradle is designed to take either a 10x 1.2v rechargeable set of "AA" (grouped as a 5x2 pack), or 12x 1.2v rechargeable set (grouped as a 4x3 pack).

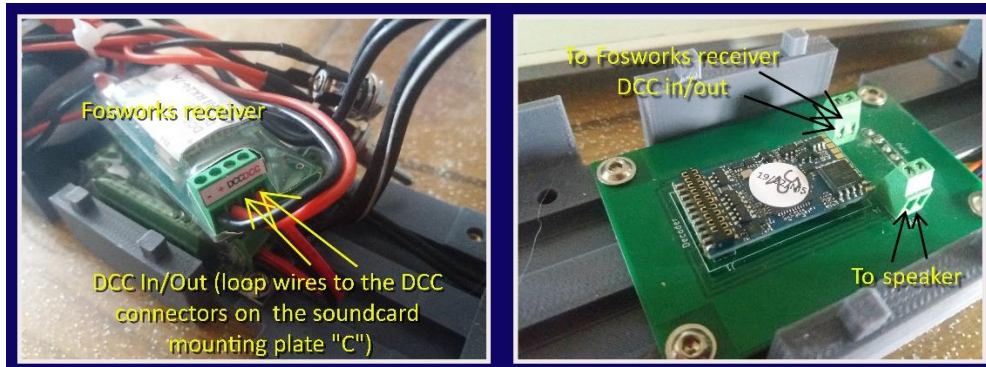
Secure the battery pack in place with cable ties, and with the fuse accessible on top. The Fosworks battery pack comes with charger point and switch for which a 3d printed mount is provided in your Venturer Models kit. The charging point and switch should be installed in the mounting block as shown.



It is recommended that the switch and charging point mount is glued inside the recess in the underslung fuel tanks, ensuring that the location does not foul any of the chassis securing screws accessible through the recesses in the base of the tanks. The connection leads can be fed upwards through the metal chassis plate to the side of the cradle and attached to the battery and Fosworks receiver/speed controller. The ON/OFF switch and charging points are thus accessible by carefully leaning the locomotive over onto its side.

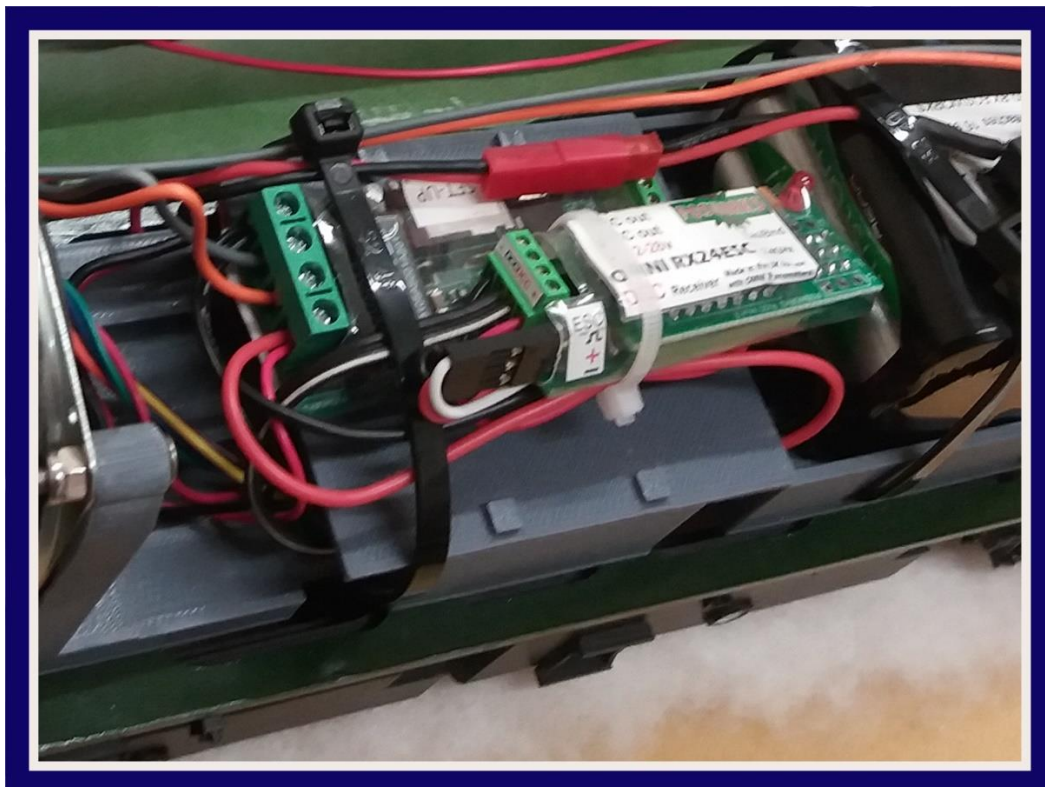


Now wire the Fosworks receiver/speed controller DCC in/out ports to the DCC connector point on the 21-pin mounting card "C" using short loops of electrical wire.

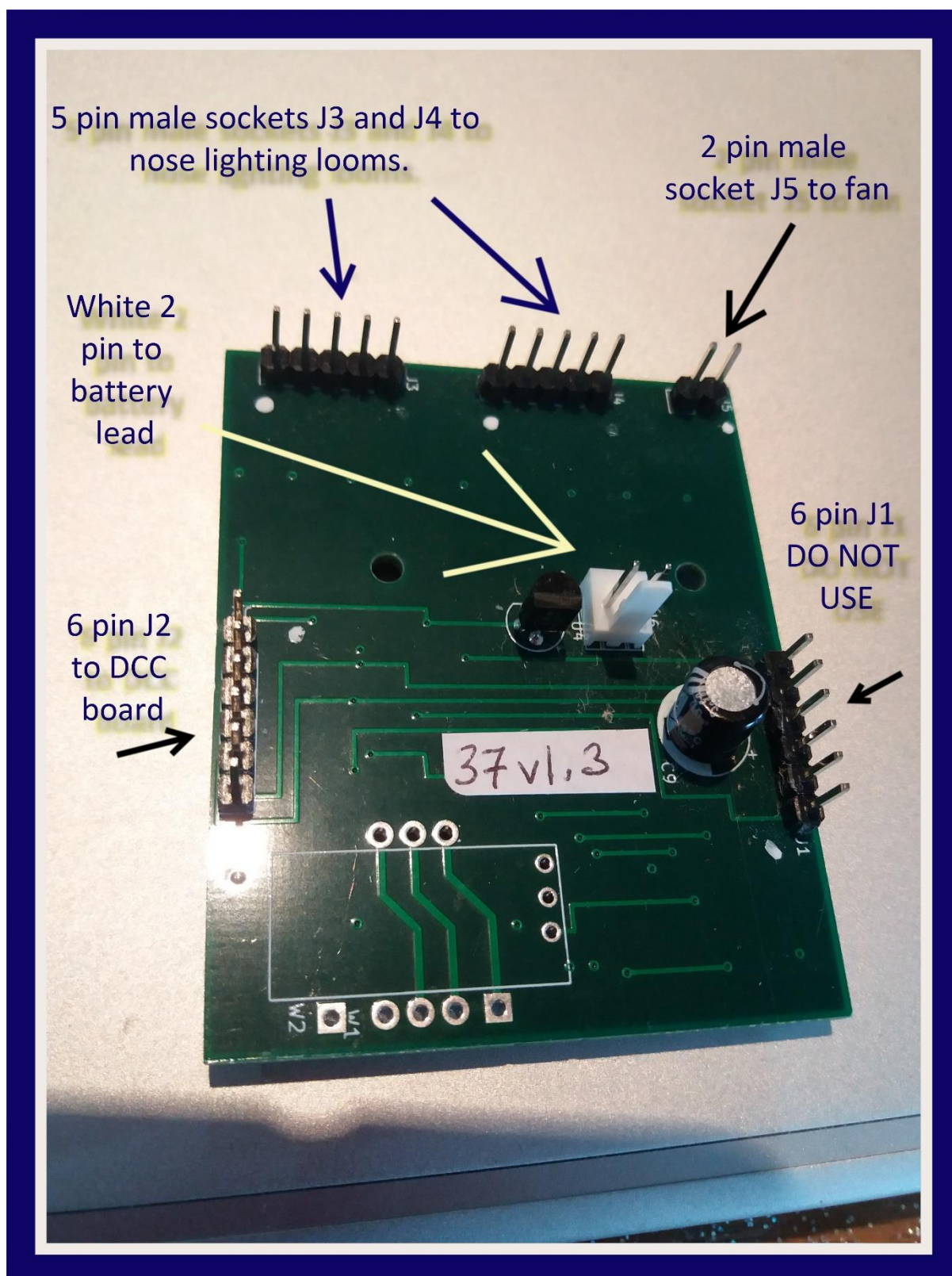


[Note: the left hand picture shows the DCC wires linked to a Loksound V4 XL soundcard, and not soundcard mounting plate "C" which is used with the Class 37 kit]

The Fosworks receiver and speed controller can now be secured to the 3d printed mounting plate which press fits home on the four lugs over the soundcard mounting plate on the cradle. Secure the receiver/controller to the plate using cable ties or tape.

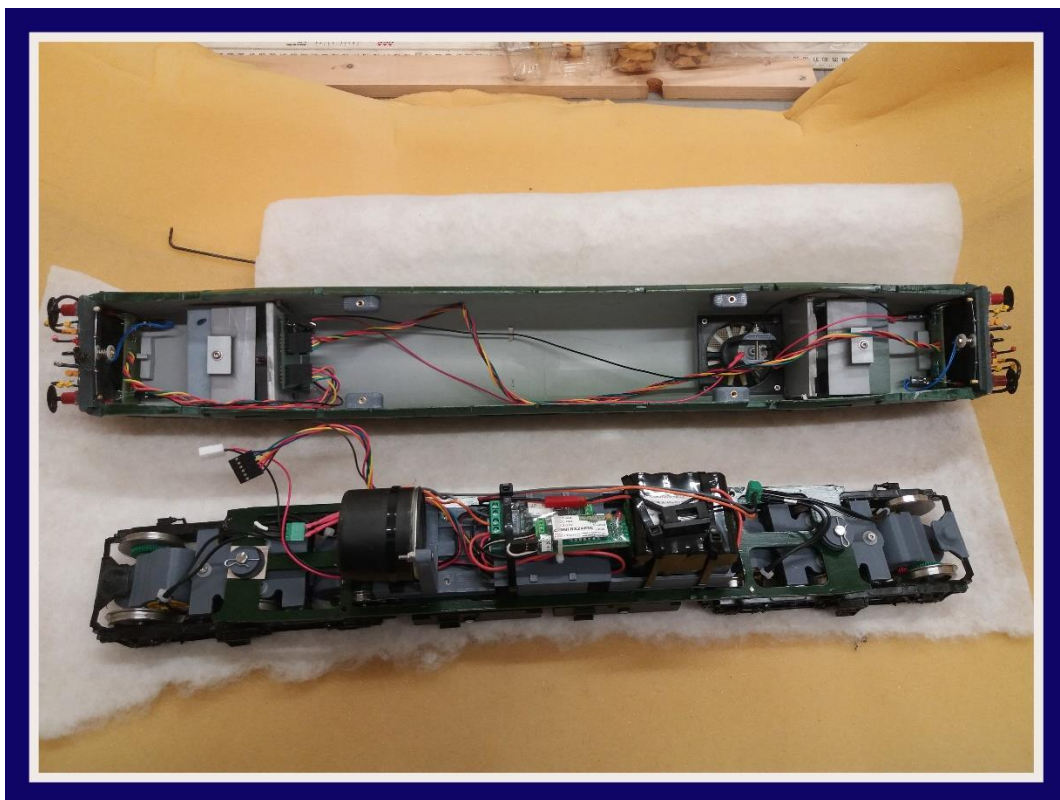
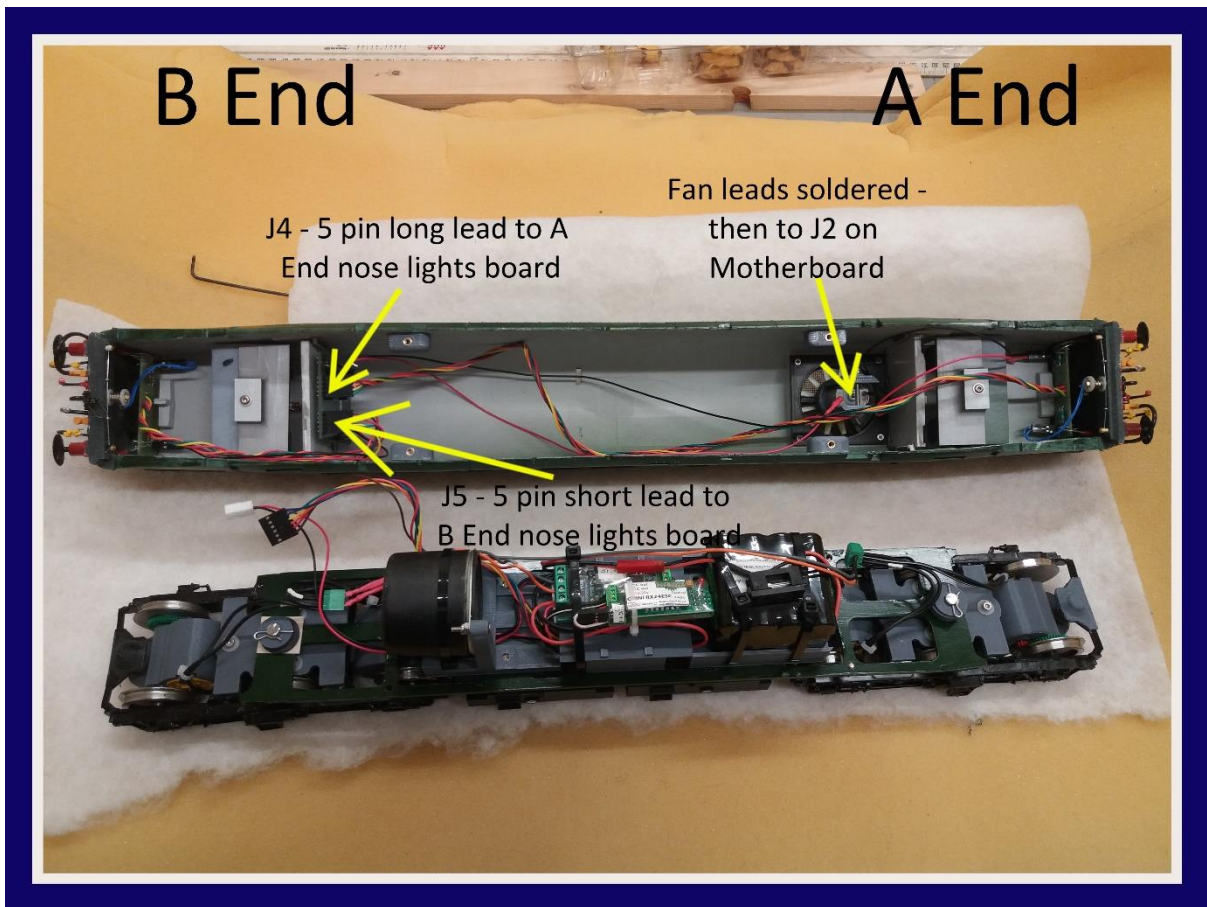


Returning attention to the Motherboard, here is the general layout: -

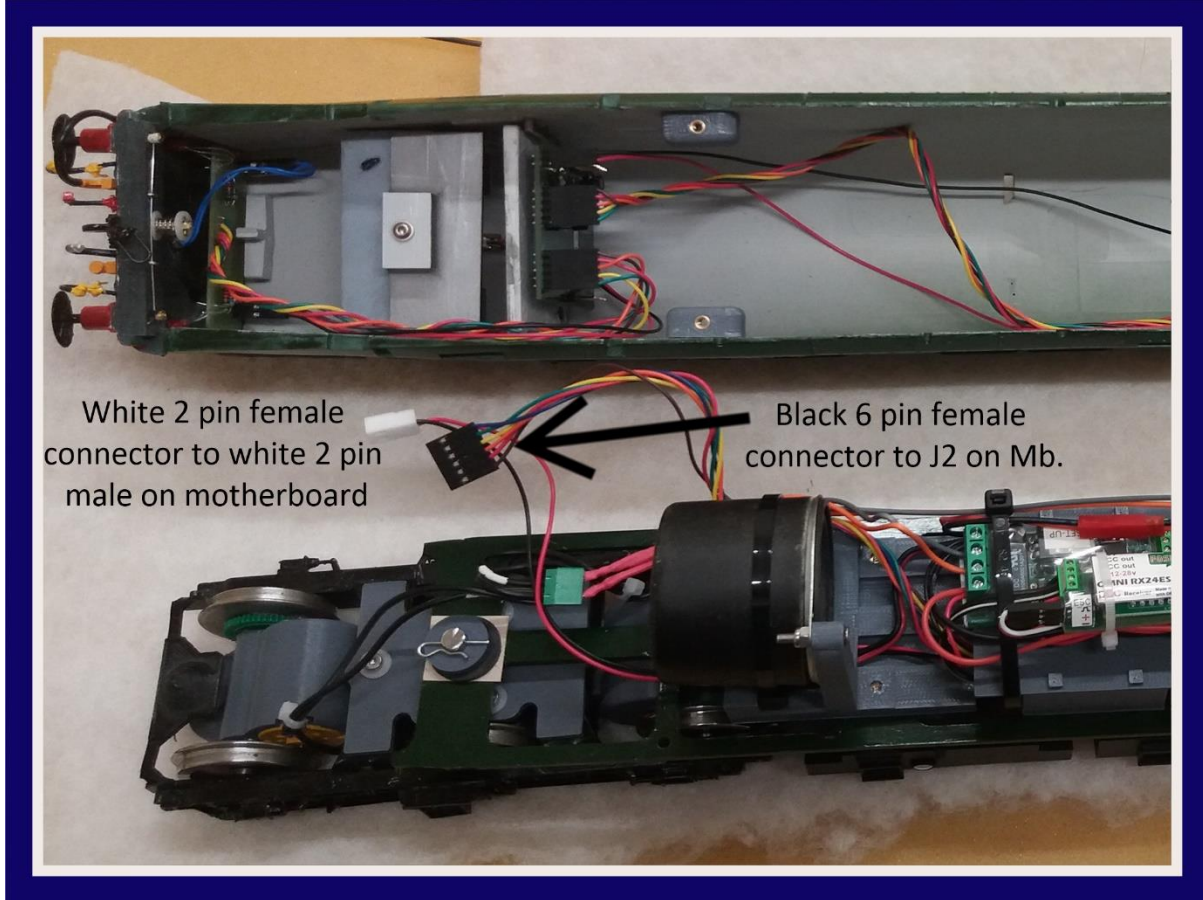
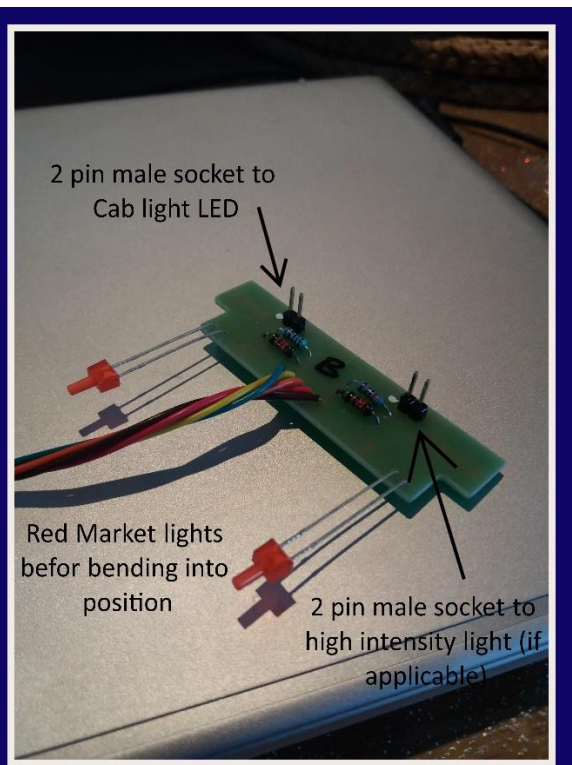
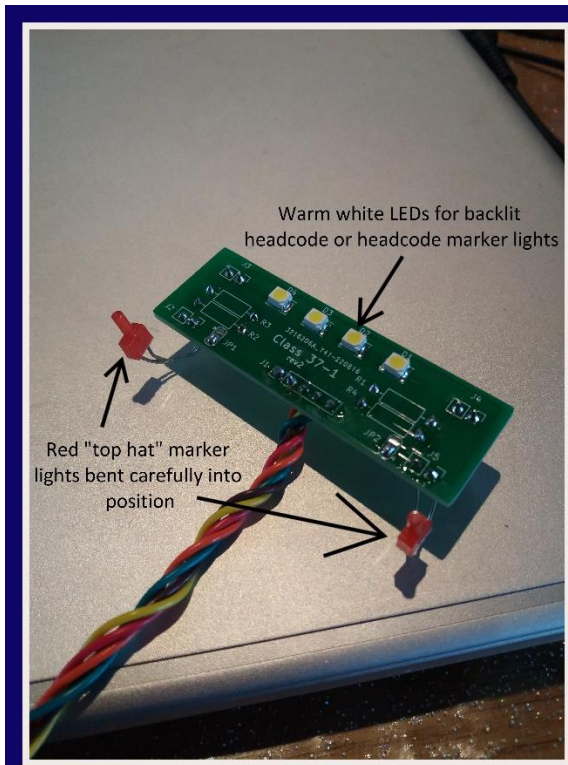


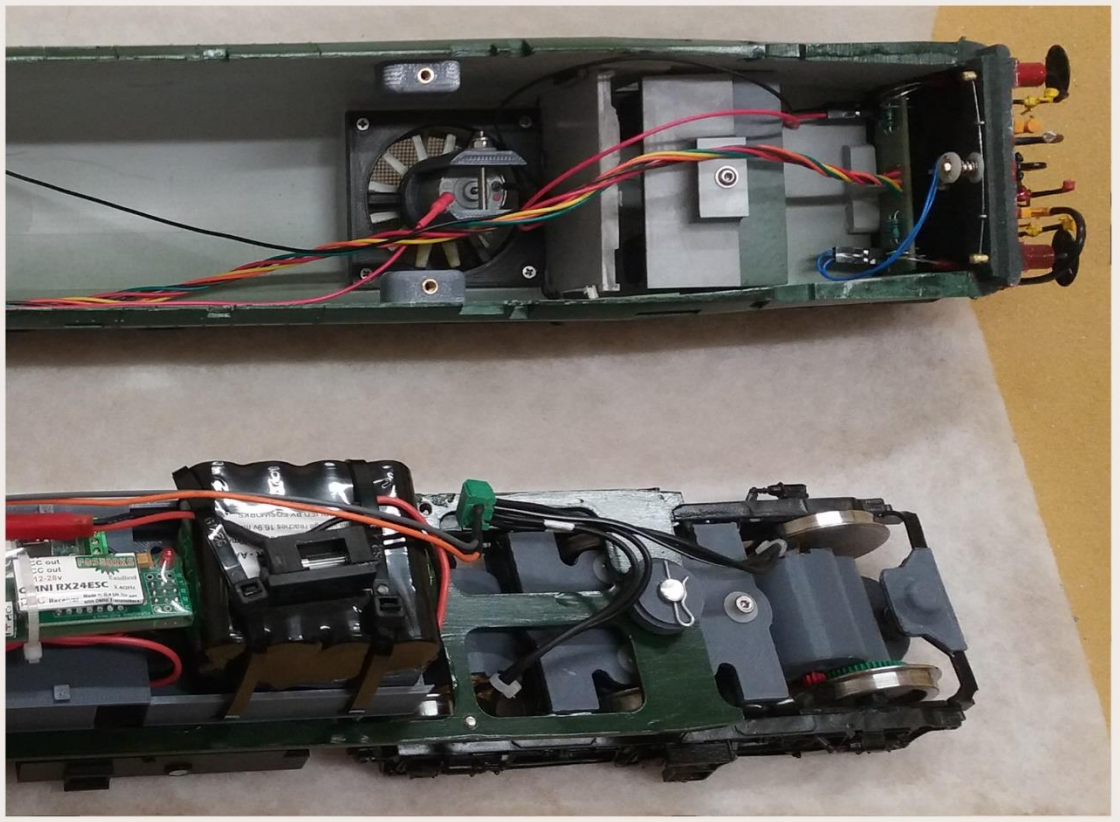
The Motherboard is secured to the rear of B End cab using the mounting plate, brass inserts and 3mm flanged Allen head machine screws.

The general arrangement is now as shown below:-

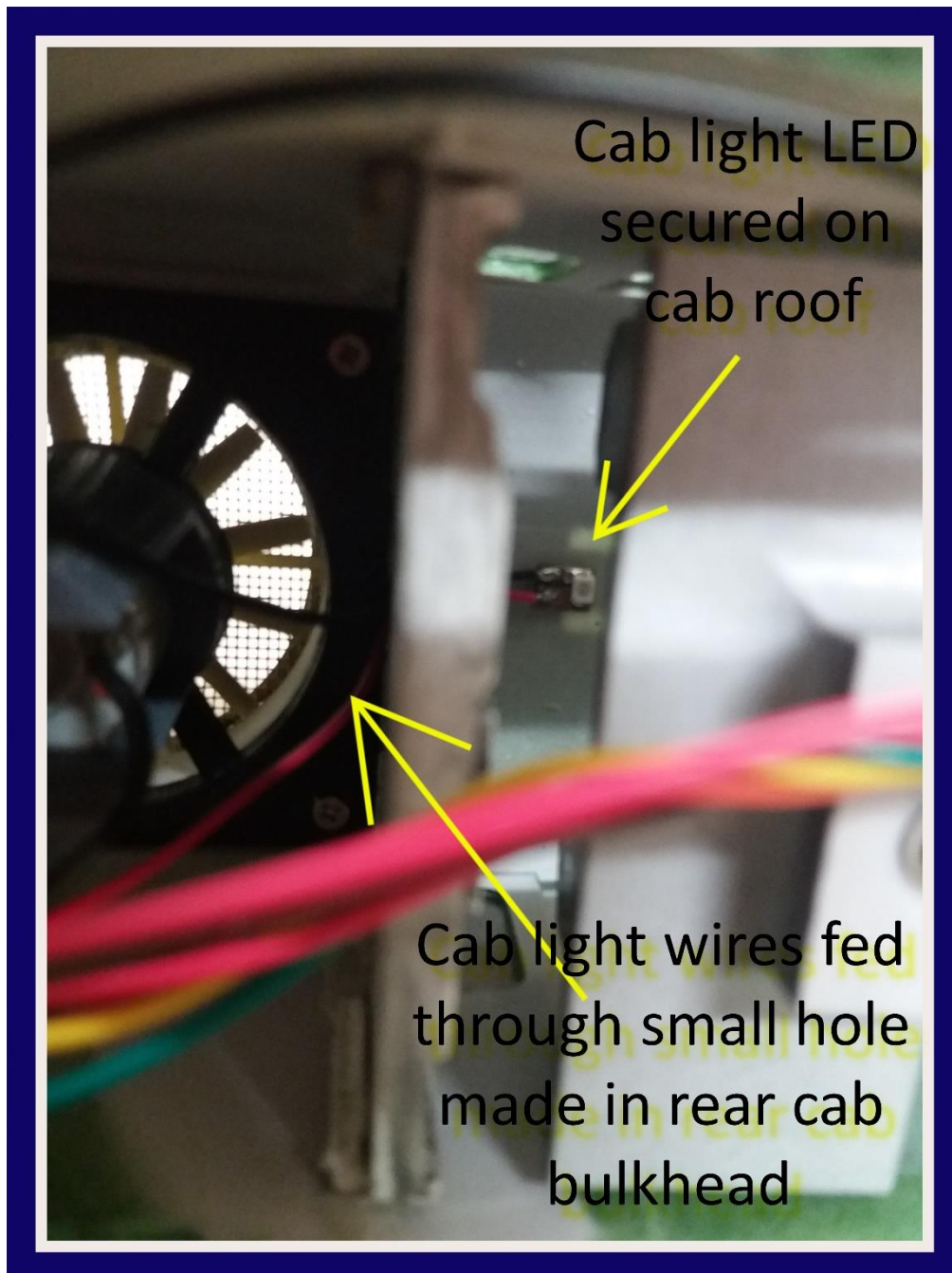


Nose end lighting boards:-





The cab light LED's are best installed through a small hole cut into the rear can bulkhead, and secured to the cab roof using a small amount of superglue.



The cab light LED wire connector loops below the cab floor onto the 2 pin male connector on the nose lighting board at each end. Note the LEDs require the connector to be joined the correct way around to work – red to the white dot.

Similarly, if your model has high intensity lights (“F”) fitted in the nose of the loco, then these LEDs are secured in place behind the central light hole in the recess provided using canopy glue (or small amount of superglue if you prefer). Again, these must be the correct way around to function.

OPERATION

The Venturer DCC Lighting/fan looms are set to operate automatically upon switching on power on to the Fosworks Radio set. With the Venturer Models sound cards, the Lights (F0) and engine sound (F1) will operate on switch on to indicate the unit is on. If you wish to switch off lights and sound after start-up the then simply use F0 and F1 functions on the Fosworks transmitter respectively.

Note that on start-up the red marker lights are ON at both ends. These will change after a short delay on selection of direction using the Fosworks transmitter. If applicable, the High Intensity Light will also be ON based on direction of travel selected.

On start-up the fan does not operate, but after a time delay of 10-20 seconds the fan will commence operation automatically. On Engine OFF (F1) the fan will continue to run for a short period before shutting down.

The Venturer/Fosworks DCC Soundcard functions are dependent upon the model selected. For the Class 37 there are two sound variants available - for Class 37/0 and 37/4. Both, however, have identical functions as listed below:-

VENTURER CLASS 37/0 and 37/4 LEGOMAN BIFFO - PROJECT SOUNDFILES

| Key | Function | Sound slots | Volume CVs | Volume values |
|-----|---|-------------|------------|---------------|
| F0 | Directional lights | | | |
| F1 | Engine | 1, 21 | 259, 419 | 128, 70 |
| F2 | Playable high horn | 23 | 435 | 128 |
| F3 | Playable low horn | 24 | 443 | 128 |
| F4 | Buffering up (when moving) /Coupling hook (when stationary) | 4 | 283 | 80 |
| F5 | Manual brake | 5 | 291 | 70 |
| F6 | Driver's door slam | 6 | 299 | 110 |
| F7 | Compressor | 7 | 307 | 90 |
| F8 | Volume control | | | |
| F9 | Variable speed flange squeal | 9 | 323 | 128 |
| F10 | Despatch whistle | 10 | 331 | 128 |
| F11 | Aux 1 - Cab light on/off (based on direction selected) | | | |
| F12 | Aux 2 | | | |