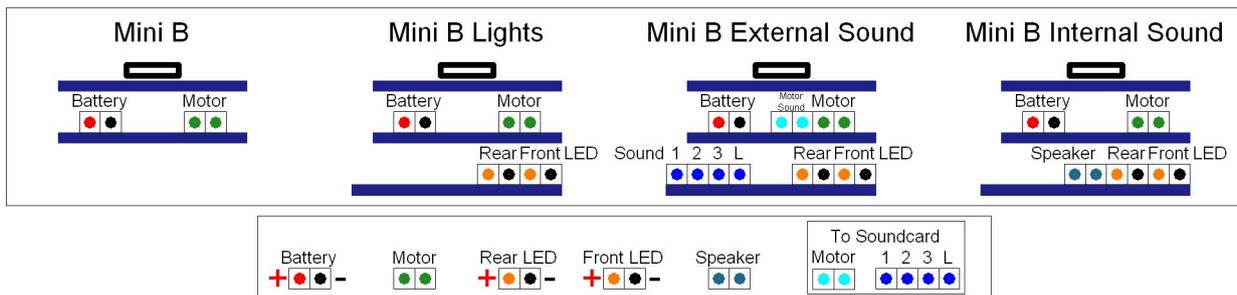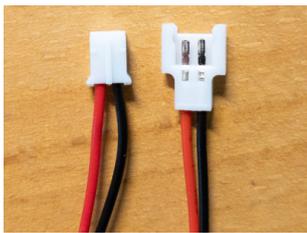# Loco Remote Mini B setup - www.locoremote.co.uk

The Mini B is suitable for 3V to 6V motors only. It can be powered by any type of battery with a suitable voltage including NiMH, NiCd, Alkaline, Li-ion and Lipo. **The absolute maximum battery voltage for the Mini B is 6V.**
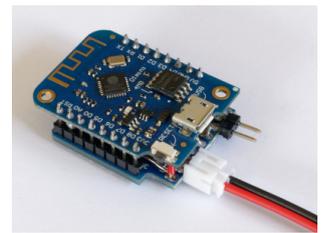
The diagram below shows all the models in the series. To identify how to connect to your loco, hold the Mini B with all of the connectors pointing towards you with the metal USB connector on the top. The word USB is written on the board just to its right. The USB connector is used to program the module during manufacture. Please do not connect anything to it or try to power your module this way. It won't work!

Connecting the battery

Two battery connection cables are included. One will plug into the white rectangular battery connector on the module. Make sure the **positive (red) lead** is on the left and the **negative (black) lead** on the right. Connecting the other way round will destroy both the battery and Loco Remote module. If you are using a 3.7V (1s) Lipo of the type I recommend (a 600mAh or 1200mAh Lipo with a mini charger – search for "Syma X5C battery" on eBay),

the other supplied cable will connect to your battery. The cables can either be joined directly together, in which case the Lipo battery must be disconnected when not in use, or a power on/off switch can be inserted between them. If you choose to use Lipos, any 3.7V (1s) Lipo will work with the Mini B. If you choose one with a different connector style from the one I supply then you will need to source a mating cable that can be connected to the cable provided that plugs into the module. DO NOT USE other types of Lipo such as 7.4V (2s) or 11.1V (3s), as they will destroy it!

The standard way to charge the Lipo battery is to remove it from the loco and use the mini charger supplied with the batteries. The LED is on while the battery is charging and goes off when completed. Having a spare charged battery also means the loco can quickly be up and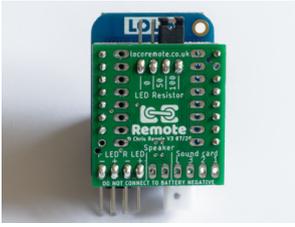 running again after the initial battery runs down. **Lipo batteries must be treated with care.** If the battery terminals are shorted or connectors damaged then the battery will be destroyed and could catch fire! If the battery shows any sign of getting hot or physically swelling in size then it must be immediately disconnected, put in an open safe place, preferably in a Lipo safe bag and then disposed of appropriately. When trying a brand new Lipo battery for the first time connect it to the Loco Remote outside your loco and allow it to discharge until the Loco Remote turns off the power to ensure the battery has no manufacturing defects. It is strongly advised that you remove the Lipo battery from your loco when not in use and store it in a Lipo safe bag - search eBay for these. If you are using either 3 or 4 x 1.2V NiMH (AA or AAA size) or 3.7V 18650 Li-ion batteries instead then you will need to get a suitable cable to connect these. You should also change the Shutdown on low battery setting from On to Off in **www.locoremote.co.uk/v1/settings** with these battery types when you first connect to the Wi-Fi interface of the Loco Remote (see below).

Connecting the motor

A DuPont header connection cable is included. This plugs into the motor connector. Remove the header from the other end if necessary and solder the cable to your motor lugs. If the loco goes the "wrong" way in forwards/reverse you can swap the polarity of the cable.

Connecting the LED lights

Two similar cables are included for versions with the LED lights control to connect to the LEDs. The Loco Remote is not able to supply enough current for other types of lights such as filament bulbs. The board can supply up to 150mA at 3.3V, which is enough for up to 8 LEDs on at once. The current limiting resistor can be changed by pulling out and then plugging in the jumper at the back of the board. Set it at 100 ohms for just red LEDs or 50 ohms for just clear white. For a combination or to vary the brightness set it at 0 ohms and use external resistors in series with your LEDs. See the separate downloadable lights guide for more examples.

Connecting an external sound card

You can connect the motor outputs of the Mini B to sound cards including the **Mtroniks digiSound 5m series** and **MyLocoSound** in their automatic modes to get full variable speed engine noise. The sound cards should get their power from a separate battery as the 3V to 6V battery for the Mini B will probably not be enough. Connect the negatives on both batteries.

The **External Sound Triggers** versions provide a dedicated connector for the motor input to the sound card as well as 4 triggers. Sound 1, 2, 3 and L (as supplied) provide a momentary half second low signal for operating horns, whistles and brake sounds. The Mtroniks only has one input for this (Aux 2), while the MyLocoSound has several (F1, F2, F3, F4).

Sound L can be changed in the **www.locoremote.co.uk/v1/settings** from momentary to latch which toggles between high and low each time it is pressed. The button background goes grey when low. This setting can be used to turn the engine sound on and off for the **Mtroniks** sound card Aux 1. Keep the default momentary setting for Sound L for **MyLocoSound** F6 input to turn the engine on and off.

Connect directly from the Loco Remote sound triggers to the Mtroniks Aux inputs. For the MyLocoSound please put a 4k7 ohm resistor in series with each of the Fx inputs. Please see the instructions supplied with your sound card for details of how to set it in its various modes. With the MyLocoSound set the Motion Sensitivity to 4 or 5 to ensure a smooth increase and decrease in the engine speed sound. Once connected, to start the sound it may be necessary to press the Faster button once in either automatic or manual sound card mode.

Using the internal sound card

If you have the version with the **Internal Sound Card**, connect a small 8 ohm speaker directly to the 2 pins marked on the bottom of the board. To maximise the bass try to mount the speaker in an enclosure in the loco. A cut down toilet roll tube works well! Tap the 4 sound buttons on the display to operate each sound.

Placement of Loco Remote in the loco

Velcro pads are also included that you may find useful for securing the module in your loco and allowing it to be easily removed. Attach the hooked part to the loco and the soft part to the module. Please make sure no part of the Loco Remote module is at any risk of directly touching anything metallic such as the motor or loco body, inserting something insulating if necessary. **Please do not fully cover the module leaving some of it exposed to the air**, as it can get quite warm in use when running at higher speed. Ideally place it on its side with the boards vertical to help heat dissipation with plenty of space around it. It should never get too hot to touch.

Wi-Fi Setup

To connect to the Loco Remote Wi-Fi access point go to the Wi-Fi settings on your phone and click on the default name **loco_xxxxxxxx** where the x's are a combination of 8 letters and numbers unique to each module. The password is locoremote. Once your phone is connected to the access point, usually signified by a tick, open a web browser and type **www.locoremote.co.uk/v1** in the website address box at the very top to bring up the controller interface. Note typing this into the Google (or similar) search box in middle of the web page will not work. It must be typed into the website address box at the top. If you want to make changes to the loco and Wi-Fi name and password, type **www.locoremote.co.uk/v1/settings** in your web browser while connected to the Loco Remote. For further information please open the Loco Remote Wi-Fi and controller operation guide which can be found on the Guide & Shop page at www.locoremote.co.uk when you are connected to your normal Wi-Fi network and not the Loco Remote.

We are here to help and ensure you really enjoy your Loco Remote. If you have any questions, problems or suggestions for improvements do please contact us either via the web site or by email at locoremote@gmail.com and we will be sure to get back to you promptly.