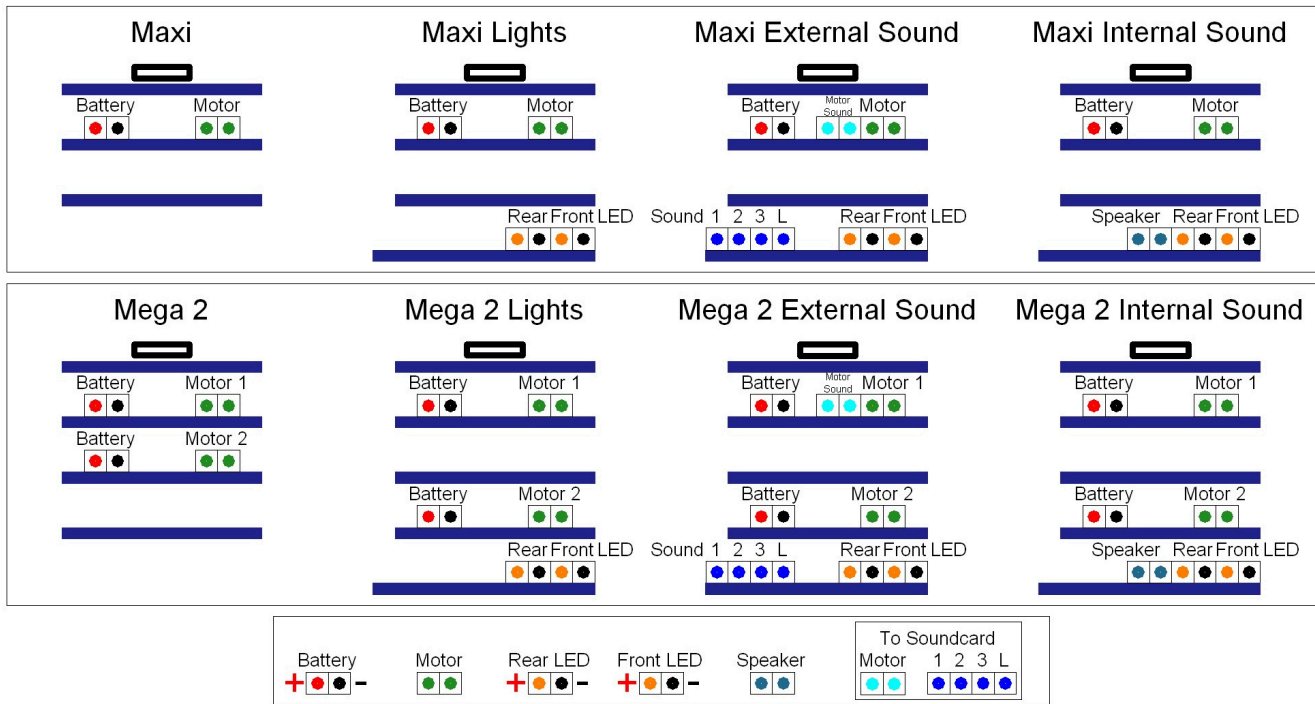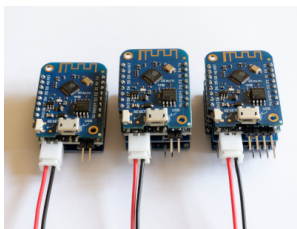# Loco Remote Maxi & Mega setup - www.locoremote.co.uk

The Maxi and Mega are suitable for 6V to 12V motors only. The Mega 2 is a 2 motor output version of the Maxi. Any type of battery can power them with a suitable voltage including NiMH, NiCd, Alkaline, Lead Acid and Lipo. **The absolute maximum battery voltage is 15V.** Note that a fully charged nominal 1.2V NiMH battery has an initial output voltage of up to 1.45V so do not use more than 10 AA NiMH batteries or equivalent in series. Nominal 7.4V (2s) or 11.1V (3s) Lipos are suitable. Do not use 14.8V (4s) Lipos as they have a fully charged voltage of 16.8V. The Maxi is able to supply up to 2A current to the motor and lights at the full battery voltage. The Mega 2 has 2 outputs each capable of supplying up to 2A current.

The diagrams below show all the models in the series. Some versions are supplied in two parts. Simply align the pins with the sockets and push these together, ensuring that all the connectors are on the same side. To identify how to connect to your loco, hold the Maxi or Mega 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!
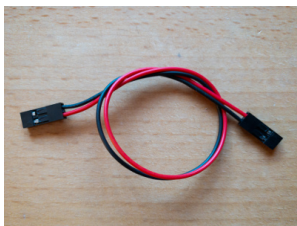

Connecting the battery

Keyed battery connection cable(s) are included. For both Maxi and Mega plug one into the white rectangular battery connector on the left of the second board down. The Mega has an additional battery connector on a lower board. These must both be connected to the battery via the on/off switch. 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. It is strongly recommended that you put a 2.5A slow blow fuse in line between the battery and each Loco Remote battery connector (i.e. 2 for the Mega 2).

Connecting the motor(s)

DuPont cable(s) plug into the motor connector(s). Remove the header from the other end if necessary and solder the cable to your motor lugs. **The Mega 2 has 2 motor outputs. Do not try to connect them to the same motor** as it will damage the module and will not work. If the loco goes the "wrong" way in forwards/reverse you can swap the polarity of the cable(s). Each motor output can delivery 2A continuous and 2.5A peak. Much more could damage the Loco Remote. Small to mid sized 12V locos should draw well under this current.

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. Pulling out and then plugging in the jumper at the back of the board can change the current limiting resistor. 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 all Maxis and Megas to sound cards including the **Mtroniks digiSound 5m series** and **MyLocoSound** in their automatic modes to get full variable speed engine noise. For the Mega 2 ensure you only connect one of the motor outputs to the sound card, not both. The sound cards should get their power from the same 6V to 12V battery supplying the Loco Remote Maxi or Mega 2. 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 **192.168.4.1/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. 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 – Android

1. Power on the Loco Remote - you should see a single short blue flash on the top board - do you see this?
2. Tap settings app on the Android phone.
3. Tap Network & Internet.
4. Tap Wi-Fi.
5. You should see a Wi-Fi access point called loco_xxxxxxxx where the x are numbers or letters, as well as your home Wi-Fi router and maybe some others - do you see this?
6. Tap on loco_xxxxxxxx
7. It should ask you to enter a password - you can tap on the "Show password" box to see what you are entering - the password is locoremote - all one word lower case.
8. Tap on CONNECT. You should see that is says "Connected, no Internet" by the loco_xxxxxxxx - do you see this? **Until you see this you are NOT connected to the Loco Remote.**
9. You may get a pop up box that says "loco_xxxxxxxx This network has no internet access. Stay connected? Make sure you tap the box saying "Don't ask again for this network" so you get a tick, and then tap on YES. If you do not do this then your phone will try to access the Internet over the 3G/4G/5G network and you will lose the controller window.
10. Leave the Wi-Fi settings.
11. Open your phone web browser. With Samsung phones download and use Chrome, not the Samsung browser.
12. Type 192.168.4.1 in the web address box at the top of the screen (not in a Google search box in the middle of the screen.
13. Press enter and the control page should come up. You may need to refresh it by swiping your finger down the screen and releasing it once.
14. For future easy access you can add a link to your home screen by tapping the 3 dots at the top of the browser and then Add to Home screen.

Wi-Fi Setup – Apple iPhone

1. Power on the Loco Remote - you should see a single short blue flash on the top board - do you see this?
2. Tap settings app on the Apple phone.
3. Tap Wi-Fi.
4. You should see a Wi-Fi access point called loco_xxxxxxxx where the x are numbers or letters, as well as your home Wi-Fi router and maybe some others - do you see this?
5. Tap on loco_xxxxxxxx
6. It should ask you to enter a password. The password is locoremote - all one word lower case
7. Tap on Join. You will see a whirling circle that should turn into a blue tick by the name. It may also say "No Internet Connection" or "Weak Security". Ignore this as you are not connecting to the Internet so it is not relevant. Do you see this? **Until you get a blue tick you are NOT connected to the Loco Remote.**
8. Leave the Wi-Fi settings.
9. Open your phone web browser.
10. Type 192.168.4.1 in the web address box at the top of the screen (not in a Google or other search box in the middle of the screen).
11. Press enter and the control page should come up. You may need to refresh it by hitting the circular arrow in the top right of the screen - do you see this?
12. After connecting to the Loco Remote access point, you may get a pop up window stating, "The Wi-Fi network loco_xxxxxxxx does not appear to be connected to the Internet. Do you want to temporarily use mobile data?" Click on Keep Trying Wi-Fi and the pop up will close and you can return to using your web browser as a controller. If you click on Use Mobile Data, then your phone will try to access the Internet over the 3G/4G/5G network and you will lose the controller window.
13. For future easy access you can add a link to your home screen by tapping the box with the up arrow at the bottom of the browser and then Add to Home screen.

For further information please open the **Loco Remote Wi-Fi and controller operation guide** which can be found on the Guide & Shop page at https://locoremote.co.uk . If you are having difficulty connecting using the steps above please contact us and tell us your phone and battery type and what step number you get to successfully. We are here to help and ensure you really enjoy your Loco Remote. If you have any questions, problems or suggestions for improvements 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.