

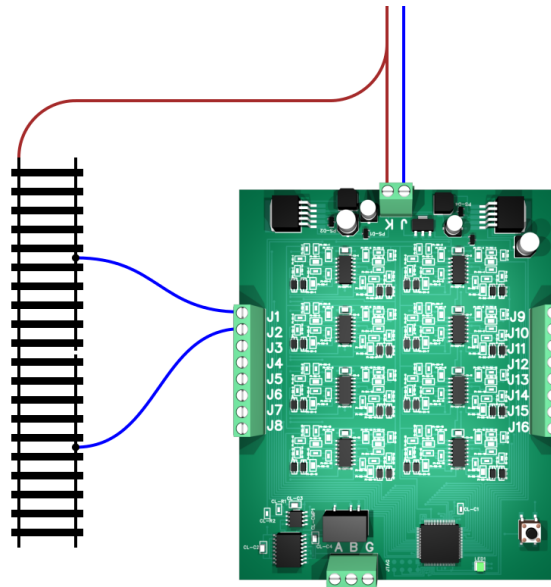
RailCom™ Reader Manual

DCC₄PC

2nd December 2011

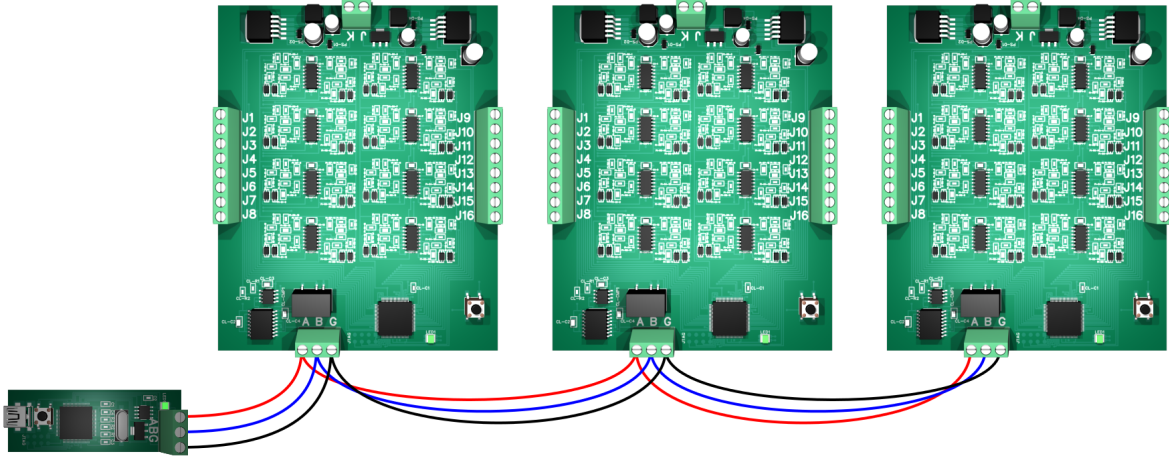
1 How to connect the RailCom™ Reader

RailCom™ requires only one track to be sequestered to form RailCom™ sections, therefore the first decision when wiring a RailCom™ Reader is which track to sequester (all track sections on a single board must sequester the same track). Power is supplied to the RailCom™ Reader through the J and K terminals. The supply for the track you have chosen to sequester should be wired to J and the supply for the other track to K. The sequestered sections should then be wired to terminals J1 to J16 as needed. The non-sequestered track should be supplied direct from the track supply. Please note that either rail may be sequestered and it is always the sequestered rail which is wired to J. In particular J on the RailCom™ Reader doesn't have to match J on your Command Station or Booster. The example below depicts a RailCom™ Reader with two sequestered sections on the right rail:



Warning: The RailCom™ Reader is rated to 5A. If you have a booster which can produce more than 5A you run the risk of damaging the device in the event of a short circuit. To prevent this either configure the booster to output a maximum of 5A (if possible) or install a DCC circuit breaker between the booster and the RailCom™ Reader.

The RailCom™ Reader uses a bus of our own creation, the Omnibus, to communicate with the PC via a Computer Interface Device. This bus allows up to 256 Omnibus devices to be attached per Computer Interface Device. All Omnibus devices have three terminals labelled A, B and G. Omnibus devices should be wired in a chain with the Computer Interface Device at one end such that a wire runs from A on the Computer Interface Device to A on the first device, then from A on the first device to A on the second device and so on. The same applies to the B and G terminals.

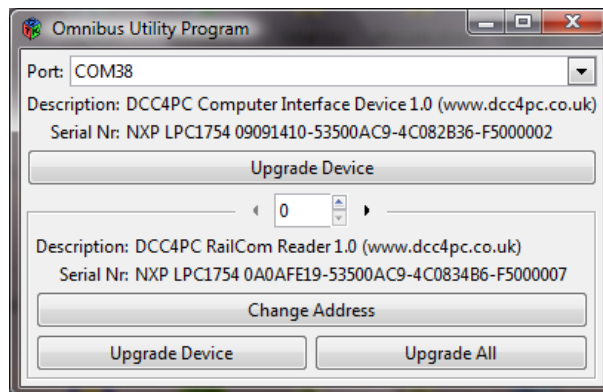


Warning: Under **no circumstances** should A, B or G ever be wired to anything other than their counterparts on other Omnibus devices.

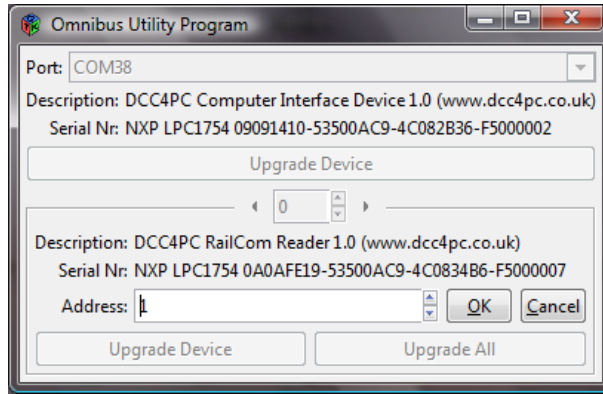
It is recommended that RailCom™ Readers should be attached to the underside of the layout so as to minimise the risk of damage. Four screw holes are provided for this purpose. If the addressing scheme suggested in the next section is followed then there will be no need to disconnect RailCom™ Readers when installing new Omnibus devices or upgrading firmware.

2 Setting the address

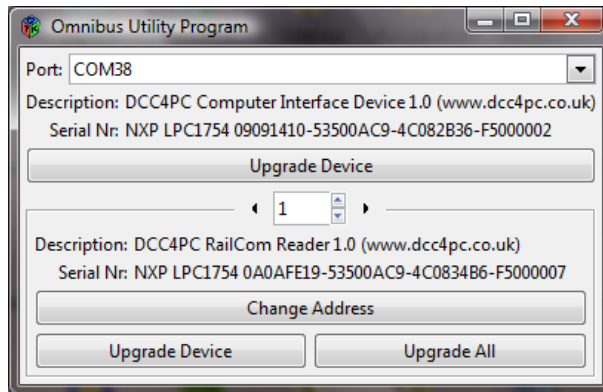
To enable the PC to reliably distinguish multiple attached Omnibus devices, each is assigned an address in the range 0 to 255. As all Omnibus devices are set to address 0 when purchased, users should start numbering their devices from 1 upwards. This allows a new device to be attached to the Omnibus without having to disconnect any existing devices first. Setting the address is accomplished using the Omnibus Utility program included with the Computer Interface Device.



First use the utility program to select your device (address 0 for a new device). The description will help confirm you have the correct device selected. Then click **Change Address**. Change the value next to **Address** to the address you desire for the device: address 1 if this is your first Omnibus device, address 2 for your second, etc.



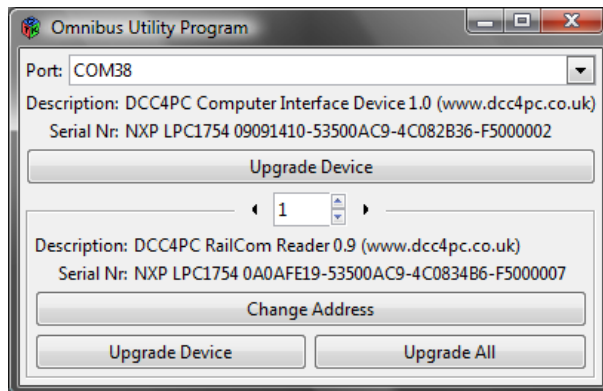
Then click OK.



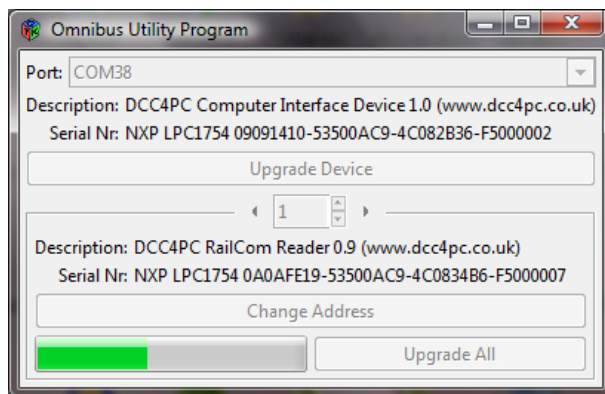
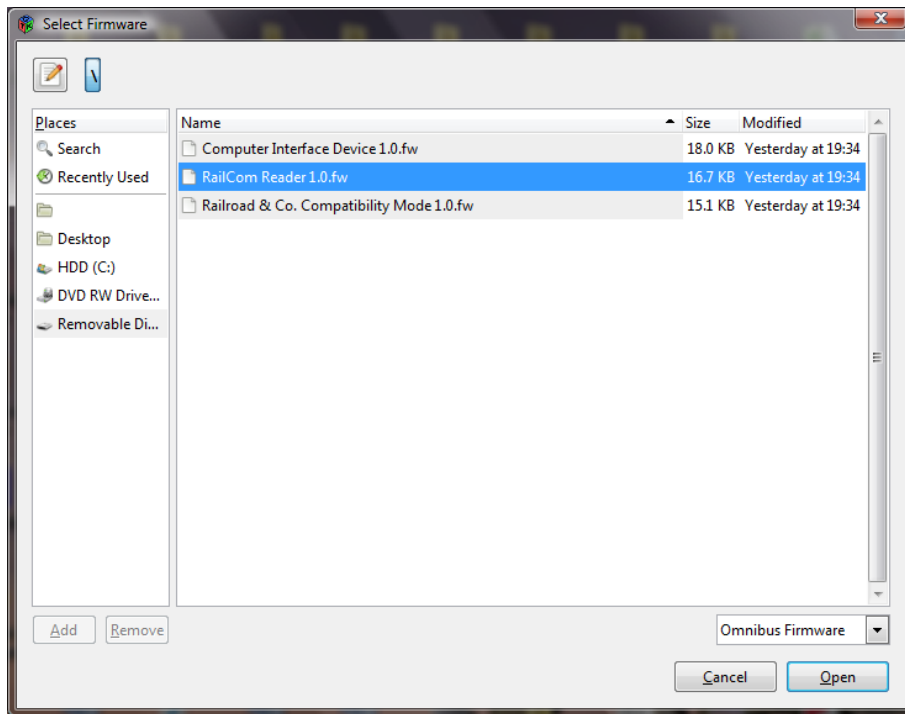
The RailCom™ Reader has now been assigned an address.

3 Upgrading firmware

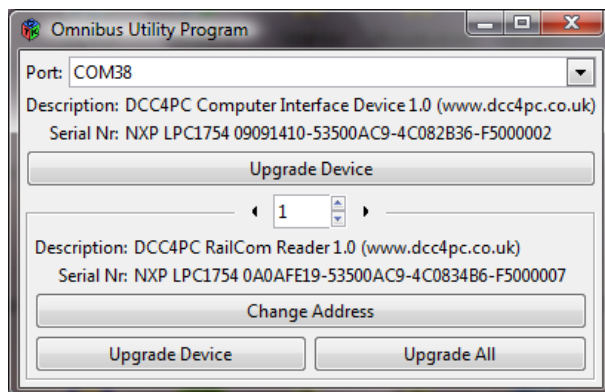
Firmware upgrades are performed using the Omnibus Utility program. First select the device you wish to upgrade in the utility program and then click Upgrade Device in the lower section.



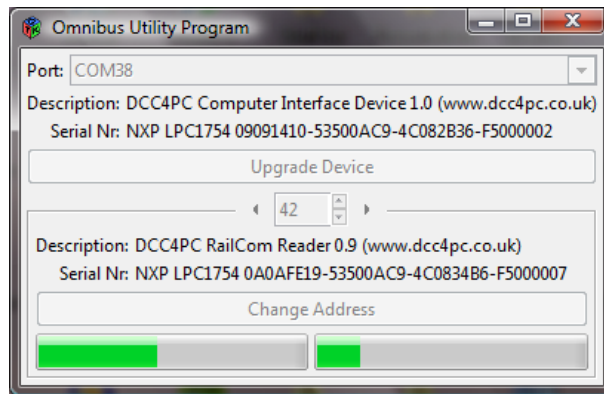
Select the upgrade you desire when asked by the program and click Open.



During the upgrade the LED on the RailCom™ Reader will blink red. After the upgrade is complete the LED will turn green and the description of the device provided by the utility program should change to indicate the new firmware version. If the upgrade failed to complete then the LED will remain a solid red.



As an alternative, if you have several devices you wish to upgrade, you can click **Upgrade All** instead. This will cause the utility program to search every address from 0 to 255 and, for each device the firmware upgrade is compatible with, upgrade the firmware as described above.



4 Repairing damaged firmware

If a firmware upgrade fails, most likely due to being cut off part way, it will render the device unusable. This will be shown by the LED turning red when power is applied to the RailCom™ Reader. If this happens then perform the following procedure to restore the device to out-of-box condition:

1. Remove power from the RailCom™ Reader.
2. Hold down the reset button.
3. Apply power to the RailCom™ Reader. The LED will remain unlit.
4. Wait for 10 seconds until the LED begins blinking red slowly.
5. Release the reset button within 5 seconds.
6. The reset procedure has begun. The LED will blink red quickly.
7. When the LED goes solid green the procedure has completed successfully.

This procedure can also be used if you have upgraded the firmware of your device and are unhappy with the change, but can't use the utility program to load the old firmware again (possibly due to not having a copy of the old firmware). If this happens you can use the procedure described above to revert to the firmware installed when you purchased your device, after which you can upgrade to another firmware version if you desire.

Note: Unlike firmware upgrades the out-of-box condition procedure will also set the device's address back to 0.