vMap^{QL} Installation Manual V1.01

To install the vMap^{QL} will require some dismantling of the QL. No modifications to the hardware are needed and the skill required is similar to that required for replacing a Microdrive. The installation kit includes the vMap^{QL} hardware and two 7-pin single row female PCB connectors to place on the Microdrive cable tails for ease of installation.

1. First confirm that your QL is supported (see the vMapQL User Manual, Appendix 3, **Supported Systems**).

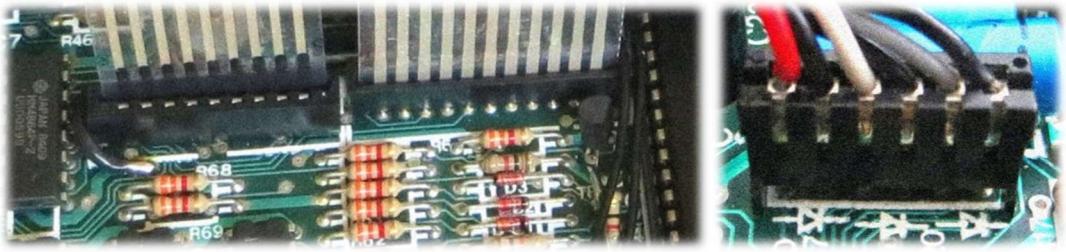
2. Disconnect the power, remove any interfaces plugged into the expansion port (e.g. Trump Card, Gold Card) and return the QL to the basic 128K configuration. Restore power and check that the QL is working normally and that the internal Microdrives respond when addressed. Address any issues before proceeding as this will make troubleshooting simpler should a problem arise during the installation.

3. After confirming that the QL is in a known good state then proceed with removing the power and any connections that will hinder the removal of the top case.

4. Turn the QL over to gain access to the case screws. Remove the 4 case retaining screws on the front and rear edge of the QL noting their size and position for replacement. Leave the two screws holding the Microdrives in place.

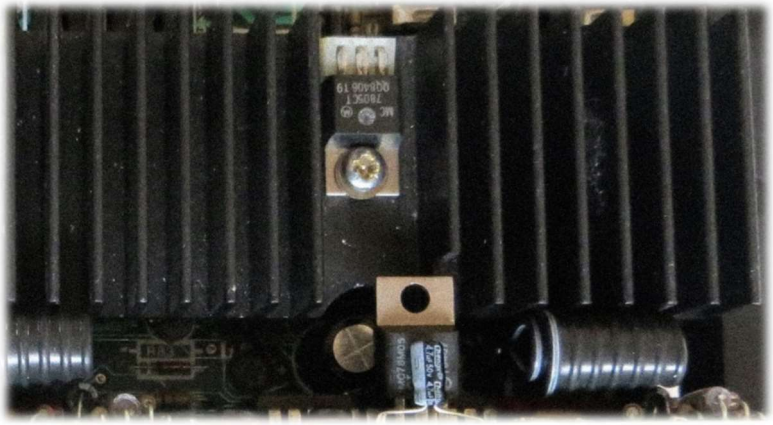
5. Carefully turn the QL over to the normal operating position and lift the top of the case about 45 degrees to gain access to the keyboard connectors.

6. Remove the plastic keyboard membrane tails from their connectors.



The top case can now be opened out to lie flat along the rear edge of the bottom QL case. The 6 individual wires (coloured wires for the Microdrive and power LEDs – the black wires are all 0V) connecting to the retainer to the left of the modulator can come free due to the poor connector design. Please refer to the picture above if the wires need to be put back. A cable-tie binding the cables together close to the retainer can help with keeping them in place.

7. Locate the power supply heatsink and remove the screw holding the regulator and heatsink in place.

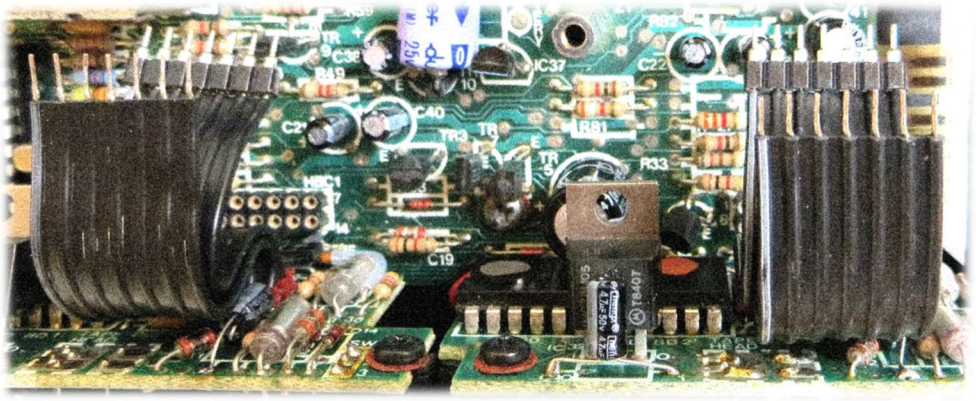


8. Remove the heatsink and move the regulator out of the way to the rear of the case. There is no need to remove the regulator.

9. Lift away the two rows of ribbon cable connecting the Microdrives to the motherboard. The ends of these are simply stripped and soldered and pressed into the two rows of IC connector on the motherboard.

10. Take one of the 7-pin single row connectors supplied and place on the ribbon cable attached to Microdrive 1 closest to the motherboard (the 'inner' ribbon cable).

11. Repeat step 9 for Microdrive 2. You should now have this:



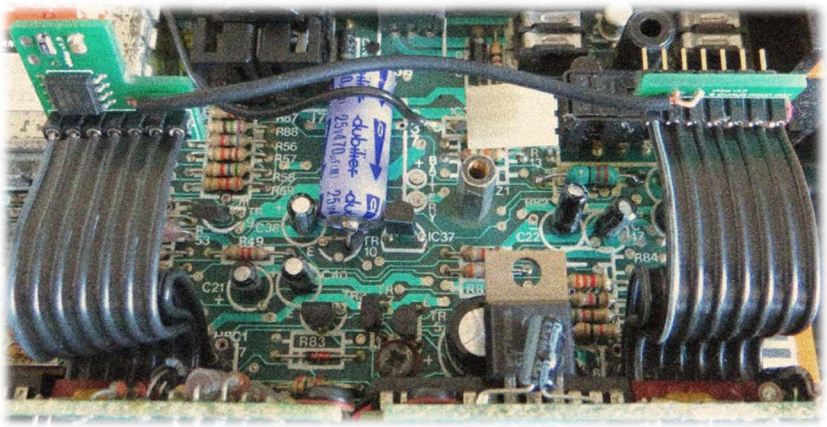
12. Insert the ribbon cable with the 7-pin connector on Microdrive 1 into the motherboard connector labelled HBC1 pins 8 to 14 (the row of pins closest to the Microdrive 1 PCB in the photo above).

13. Insert the ribbon cable with the 7-pin connector on Microdrive 2 into the motherboard connector labelled HBC2 pins 8 to 14.

14. Now take the second ribbon cable (the 'outer' ribbon cable) of Microdrive 1 and insert the wires into the corresponding socket on the left hand vMap^{QL} board (the L-shaped board with the electronics).

15. Take the second ribbon cable (the 'outer' ribbon cable) of Microdrive 2 and insert the wires into the corresponding socket on the right hand vMap^{QL} board (the smaller board).

16. Connections should now look like this:

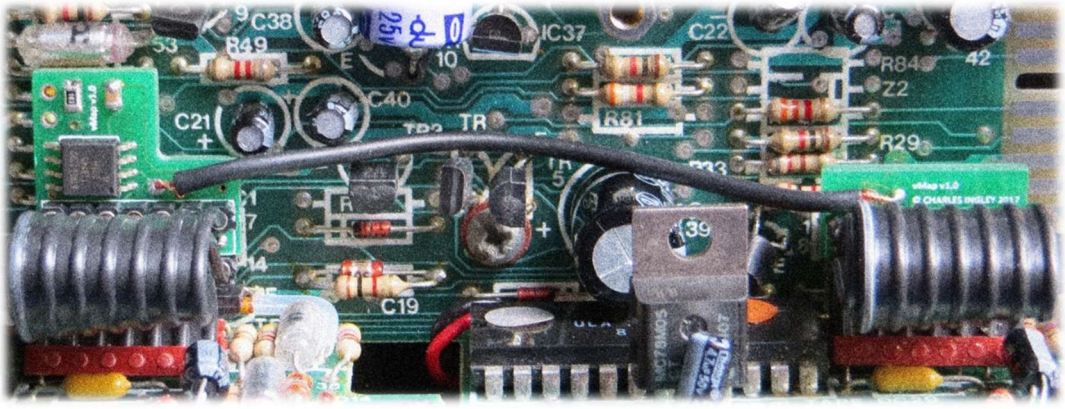


17. For the next two steps, metal tools should not be used to assist in seating the connectors as any slip is sure to result in damage to the QL or the vMap^{QL} . The pins are a firm fit and will require steady pressure to press them home.

18. Carefully insert the row of 7 pins on the left-hand vMap^{QL} board attached to Microdrive 1 into the motherboard where the ‘outer’ Microdrive 1 ribbon cable used to be (HBC1 pins 1-7).

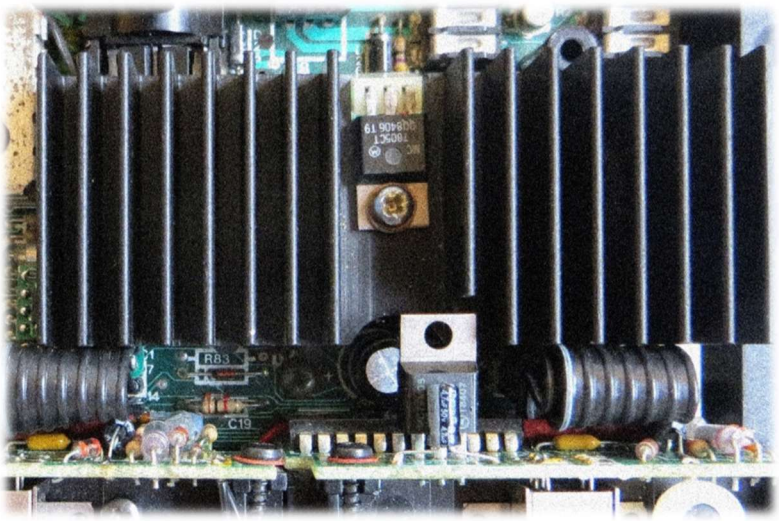
19. Carefully insert the row of 7 pins of the right-hand vMap^{QL} board attached to Microdrive 2 into the motherboard where the ‘outer’ Microdrive 2 ribbon cable used to be (HBC2 pins 1-7).

20. Closely check that the pins are aligned correctly with the motherboard socket and that none have been inadvertently displaced.



21. Replace the heatsink ensuring the square cut-out is to the rear. If the regulator on Microdrive 2 has been inadvertently bent downwards, gently bend it up so that it clears the heatsink.

22. The Microdrive cables are now in a slightly different position and in order that they don't foul with the top of the case they need to be pressed gently back towards the front of the case while the heatsink is moved into place.



23. Replace the regulator and screw it into position ensuring the connector correctly oriented.

24. Once done ensure that the top of the Microdrive ribbon cable is below the top edge of the Microdrive PCB so that the top case will close properly.

25. Put the LED cabling back in place if this became disconnected during disassembly. See installation step 4 for the correct cable configuration. Also ensure that the LED cabling does to interfere with the top case

26. Close the top of the case enough so as to insert the keyboard membrane tail connectors.

27. Before screwing the case together, restore connections to the QL. If you have a known good Spectrum Microdrive or even better, a vDrive^{QL}, then connect this now.

28. Apply power to the QL and wait for the 'press F1 or F2' prompt. Press F1 and **mdv1** will be addressed as the QL searches for a boot file. If the drive operates briefly and the drive LED for the first internal drive flashes then the vMap^{QL} is operating correctly. If not, remove power to the QL and refer to Appendix 1, **Troubleshooting Guide** at the end of this installation manual.

29. With a known good cartridge, check that **mdv1** and **mdv2** can be accessed by noting that the drive starts and the corresponding LED comes on briefly. If you have a Spectrum Microdrive connected, or if you have a vDrive^{QL} connected (please refer to the vDrive^{QL} user manual) then check that it can be accessed as **mdv3**.

    If the response is not as expected, then remove the power to the QL and refer to Appendix 1, **Troubleshooting Guide**.

    If all works as expected then the hardware installation is complete. The case can be screwed back together and any interfaces removed prior reinstalled.

    Please refer to the vMap^{QL} manual for detailed information on further configuration.

Troubleshooting Guide

1. *Unable to access any internal Microdrive.*

   Check that both the internal Microdrive and vMap^{QL} connections are correct and have not been inadvertently displaced. Refer to sections 9 to 19 of the installation instructions.

   If errors in the installation are found then it is advised to remove the vMap^{QL} and restore the QL to the basic configuration as described in step 2 of the installation instructions. Check that the QL works as expected and if so, attempt the vMap^{QL} installation again.

   If there were no errors in installation, the QL system is supported (see Appendix 1, **Supported Systems**) and the vMap^{QL} does not work as expected then please contact the supplier.

2. *The internal Microdrives work but accessing any external drive fails*

   Check, and clean if necessary, the external Microdrive bus PCB connections. After many years of not being used it likely that dust and corrosion will be present.

   Check the Microdrive cable – the insulation displacement connectors are known to cause problems.

3. *The internal Microdrive LED does not light but the drive works normally*

   It is likely that the LED wires have become detached internally. Refer to section 4 of the installation instructions.

4. *Erratic or unreliable behaviour*

   The vMap^{QL} is dependent on known timing values for Microdrive address decoding. If these values are changed by application or ROM routines then the vMap^{QL} may fail to operate correctly. Pleas refer to the list of supported systems.