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## OPLANE

Powered Back Plane for the Sinclair QL

### Disclaimer

In no circumstances will QUBBESoft P/D be liable for any direct, indirect or consequential damage or loss including but not limited to loss of use, stored data, profit or contracts which may arise from any error, defect or failure of QPlane or incorrect connection of the P8 & P9 power connectors.

### Power Connection

Qplane has been designed to utilise a PC Power Supply Unit, which can be found in Full and Mini Tower Case's and also Desktop Cases both Slimline and Normal, to supply the necessary power requirements for the QL and its add on cards.

The PC Power Supply Unit has two special 6way female connectors, normally labelled P8 and P9, whose power connections are as follows:-

P8	P9
Orange - Power Good	Black - Ground
Red - +5V	Black - Ground
Yellow - +12V	White - -5V
Blue - -12V	Red - +5V
Black - Ground	Red - +5V
Black - Ground	Red - +5V

### **WARNING !!!!!!!**

These connectors must be placed onto Qplane with the correct orientation otherwise disastrous consequences could occur. The rule of thumb when placing these connectors is to always have the Black Wires (i.e. Ground) of each connector in the centre.

Qplane has the male connectors, labelled P8 & P9, suitable for mating up with the P8 and P9 female connectors of the PC Power Supply Unit.

### QL Modification

To allow the QL to function properly with a PC Power Supply attached to QPlane a small modification has to be done to the QL as follows:-

Remove the large black heatsink that retains the 7805 Voltage Regulator. Remove the 7805 Voltage Regulator from its socket. Take a small length of insulated wire and strip both ends, push the stripped ends into the two outer holes of the socket thus forming a loop and leaving the middle hole of the socket empty.

Providing the power connector's P8 and P9 have been correctly fitted to QPlane the QL can now be powered up from the PC Power Supply Unit.

### Trump Card Modification

If you are going to use a Trump Card with QPlane a small modification will have to be done to the Trump Card as follows:-

Remove the large black metal casing of the Trump Card, this casing is not only used to cover the components of the Trump Card but is also used as a heatsink for the on board 7805 Voltage Regulator. Strip a small piece of insulated wire and solder the stripped ends to the outer legs of the 7805 Voltage Regulator thus forming a loop across the 7805 Voltage Regulator.

The reason for this modification is that normally when the Trump Card is plugged into the QL it is being supplied with +9V from the QL which is converted into +5V by the 7805 Voltage Regulator on board the Trump Card. The PC Power Supply Unit does not Output +9V but does Output +5V. QPlane connects +5V onto the same place where there would have normally been +9V. Unfortunately the 7805 Voltage Regulator will not function with a supply of +5V, it needs a minimum voltage of +7V to function correctly. By placing the loop of wire across the input and output of the 7805 Voltage Regulator we are thus short circuiting the Voltage Regulator and supplying the Trump Card directly with +5V which it requires to function. In no circumstances must the modified Trump Card be connected to a standard QL arrangement. If you wish to use the Trump Card in a standard QL you must remove the short circuit across the 7805 Voltage Regulator and replace the black metal heatsink.

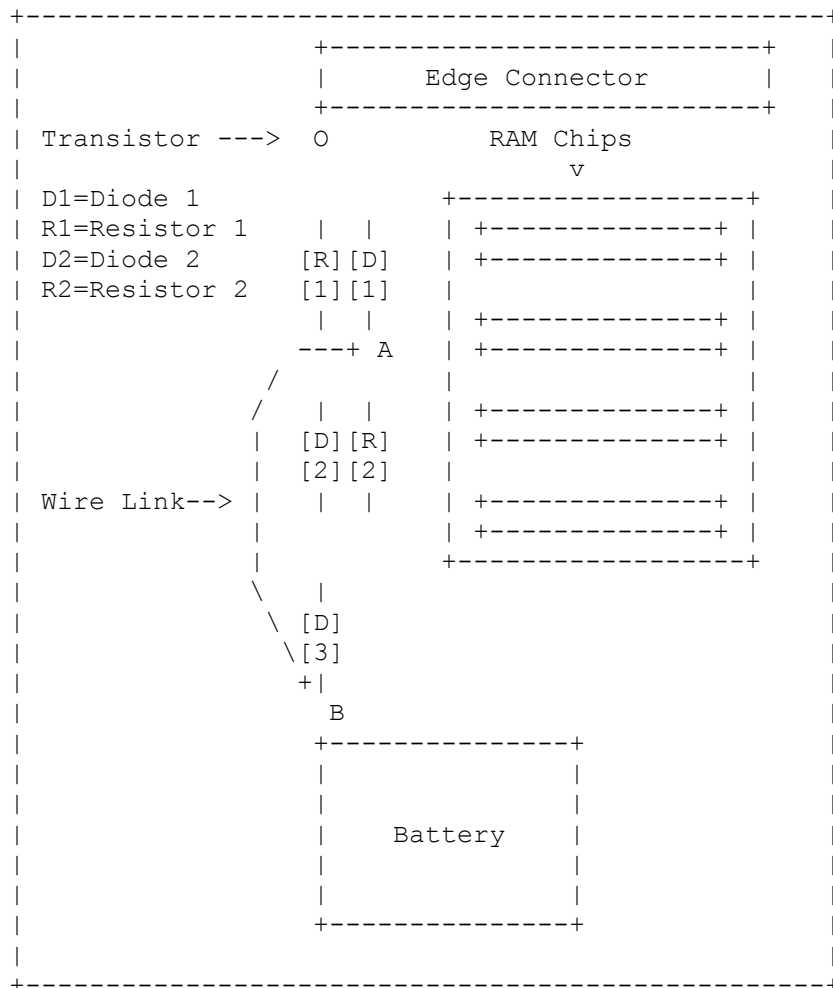
### Gold Card Modification

The modification required to make the Gold Card function correctly is a little bit more complicated than the Trump Card modification.

First of all you must locate the 7805 Voltage regulator, normally found attached to the Gold Heatsink. As with the Trump Card you must strip a small piece of insulated wire and solder the stripped ends to the outer legs of the 7805 Voltage Regulator thus forming a loop across the 7805 Voltage Regulator.

Just doing the above will ensure the Gold Card functions when plugged into QPlane, but unfortunately the on board battery backed clock of the Gold Card will not function properly. The reason for this is due to the Gold Card having a clock that functions with a supply voltage of +9V ,

consequently to make the clock function correctly two components have to be de-soldered and removed plus a small piece of insulated wire has to be connected. The following diagram shows how this can be achieved:-



1. Locate and remove Diode 1 and Resistor 2 (see diagram).
2. Link points A and B with a short length of insulated wire.

Once the above has been achieved the battery backed clock will function correctly .

**In no circumstances must the modified Gold Card be connected to a standard QL arrangement. If you wish to use the Gold Card in a standard QL you must remove the short circuit across the 7805 Voltage Regulator.**

If you are unsure about doing this modification, or any other modification, please contact QUBBESoft P/D.

QUBBESoft P/D can do the modification's for you completely free of charge except the cost of the return postage and packing.

## **Super Gold Card**

No modification is necessary when using Super Gold Card with QPlane but you must ensure that you power the Super Gold Card using the external power connector located under the Gold Heatsink. Please follow the instructions within the Super Gold Card Manual for the use of this connector.