Using an SD Memory Card with the Sinclair QL

With support for double density disk drives having now been removed from Windows 7, we were finding it increasingly difficult to transfer software between the Sinclair QL and PC. Yes, you can make up a lead and transfer data and programs using a serial link between the two computers, but we missed the simplicity of using floppy disks.

Also, as floppy disk drives begin to wear out, and it's increasingly difficult to find suitable floppy disk drives which you can make into a master (DS0) instead of slave, we decided to look for other alternatives.

This is where the HxC Floppy Disk Emulator comes in. It is a small well built interface (unboxed) which simply connects to a standard floppy disk interface and allows you to store floppy disk images on an SD card.

So far as the QL (or many other computers are concerned), they are using a real floppy disk drive, with read and write capabilities (although not format).

What do I need to connect it to the QL?

To connect the HxC Floppy Disk Emulator, you will need any standard disk interface for the Sinclair QL, plus a floppy disk drive cable (you can even use a PC twisted cable if necessary), and a power supply - one from your old floppy disk drives will suffice, otherwise you will need to purchase a 2A 5V power supply and add a floppy disk power connector.
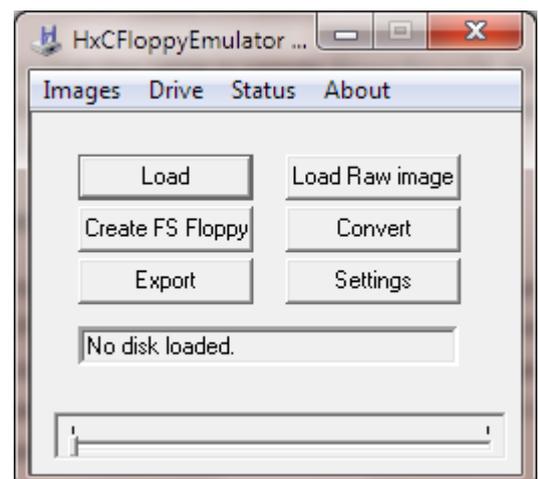
The only odd thing is that the cable is upside down for a QL disk interface for some reason - so you need to file off the locating lug on one end of the cable, so that you can turn it upside down where it plugs into the QL disk interface.

How do I get floppy disks onto the SD card?

This is the slightly more technical part at the moment. You can use tools such as RAWREAD / RAWWRITE on the PC to make an image of a QL floppy disk and store it in the .raw format on your PC. The latest version of Q-emuLator (v3.) can read and write to these raw disk images, so that means what we did was to create a blank disk image, and then use Q-emuLator to copy existing files and programs across.

 You then need to use the software supplied with the HxC Floppy Disk Emulator to convert these raw disk images into a format understood by the emulator. Fire up the software, put your SD card into a PC card reader, and go to the Settings Menu.
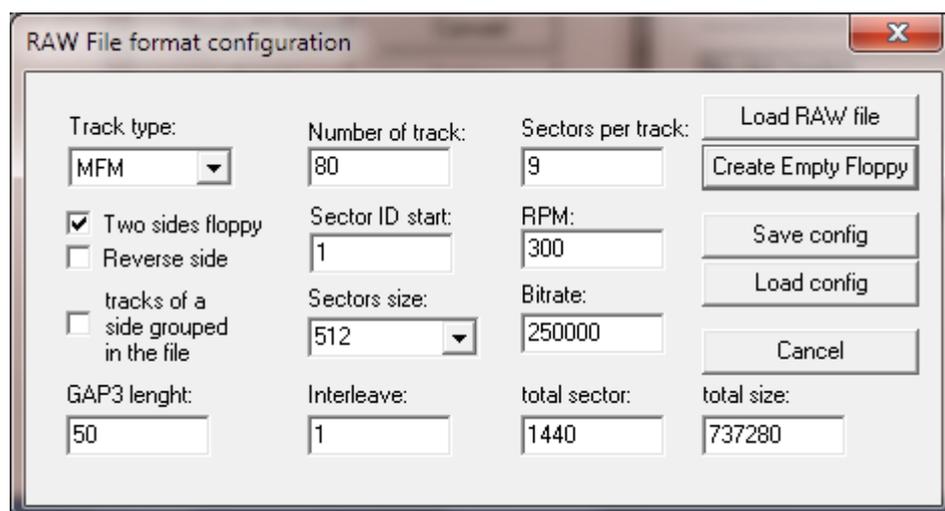
Once in the Settings menu, you will need to untick Auto, and then select Generic Shugart as the Mode - this is because the parameters for the QL have not yet been incorporated within the software.

You can also tick to say if you are using a twisted (PC) cable between your QL and the HxC Floppy Disk emulator. Leave the other options as per defaults.

Now, you need to go back to the main screen and click on Load Raw Image.

This brings up what at first glance appears to be quite a complex screen, allowing you to set up the various parameters which define the disk image in use.

The above (default) settings are fine for a QL DD disk - if you are using a disk image of a HD disk, then you will need to change the number of sectors per track from 9 to 18 and the bit rate will also need to be increased from 250000 to 500000. On my Gold Card, I also needed to use FLP_STEP 6 to successfully load disks.

You can then click on Load RAW file, and file the necessary .raw disk image file on your PC's hard drive. You then need to click on EXPORT and save the resulting file to your SD card (this can take a few seconds). Once complete, the disk details will scroll through the small window underneath the Settings button.

You can repeat this method (or use the convert button) to store numerous disks on the SD card at the same time (the device supports up to 32BG SDHC cards).

Now you can insert your SD card into the HxC Floppy Disk Emulator and connect it to your QL. As with disk drives, you are best to power the HxC Floppy Disk Emulator before the QL, but once powered, you can swap the SD card as you like.

The three buttons on the front of the unit allow you to select a disk image to use as FLP1_ (drive A) and one to use as FLP2_ (drive B). If you want to use two disk images as dual disk drives, you will need to add a second jumper to the block next to the cable. However, you can also use the unit as a secondary drive alongside a real disk drive if you so wish - just set the jumpers to dictate whether the unit should be FLP1_ or FLP2_.

The LCD screen on the top (which can be detached if you want to mount the emulator in some way) shows you the current disk image name and also shows progress through the tracks as you load / save programs.

Once connected, that's all there is to it - your QL will think it has two disk drives connected and an endless supply of disks.

The HxC Floppy Disk Drive Emulator can be purchased for £72 plus postage from www.sellmyretro.com

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