

## SANDY DISK INTERFACES

### Introduction

This manual describes the facilities and operation of SANDY QL disk interfaces. The following conventions are used throughout:

COMMAND            for parts of commands to be typed as shown  
example            for parts of commands shown as examples  
description        for descriptive parts of commands.

Note that page numbers refer to the original manual, which was in A5 format.

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SuperToolkit II facilities are explained in the separate Toolkit manual.

GRAM / POINTER INTERFACE is described in the QJUMP GRAM manual.

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### INTERFACE DESCRIPTION

All the interfaces are based on a standard printed circuit board which has a 64 way connector to fit into the QL expansion port and a plastic moulded housing to protect the disk and printer cable connectors positioned on the left of the QL and matching the computer case styling. The boards are correctly sized to slide into the guides inside the QL and provide a completely secure mounting. Only Sandy high technology offers so much power in so neat a package. The printed circuit boards are highly complex fine-line through-hole-plated designs produced on computer controlled high precision machines and electronically tested before components are inserted.

Disk controllers can handle two drives of any type or size from 3" to 5.25" or any mixture of drives.



Parallel ports are Centronics standard with multi-tasking spoolers.

**\*\*\* SUPERDISK \*\*\***

Multi-standard Disk interface  
Centronics compatible printer port

ROM Software built in:  
Eight static RAM disks  
SuperBasic - 31 extra commands  
File handling commands  
Multi-tasking Spooler controls

**\*\*\* SUPERQBOARD OK RAM \*\*\***

Multi-standard Disk interface  
Centronics compatible printer port  
Switch mode transistor power regulation for precise on board supply but drawing only the minimum current to run the IC's which are actually demanding power - this greatly reduces the load on the QL power supply and cuts out wasteful heat build up.

ROM Software built in:  
Eight static RAM disks  
File handling commands  
Multi-tasking Spooler controls  
QJUMP SuperToolkit II

**\*\*\* SUPERQBOARD 512K RAM \*\*\***

As above but with 512 Kilobytes of very high speed memory added as a separate close coupled board with built in custom memory management to achieve the fastest access times possible. The memory board is powered from the SUPERQBOARD integral switch mode system and can be plugged into the OK RAM version to upgrade the memory capacity. Total system memory is 640 Kilobytes.

**\*\*\* SUPERQBOARD 512K RAM MOUSE VERSION \*\*\***

As the 512K SUPERQBOARD but with a built in mouse attachment port.

ROM software built in:  
Disk management commands  
Spooler controls  
QJUMP SuperToolkit II  
QJUMP Pointer interface extensions

DISK or MICRODRIVE based software:  
QRAM - QJump real windows/menus multi-tasking environment  
Eight static/dynamic RAM disks  
CADPAK demonstration graphics program using the mouse system  
MOUSE\_CDE - a routine to emulate the joystick ports onto a mouse

MOUSE:  
High precision 2-button mouse using optical resolvers for long life and great accuracy with silent operation.



**\*\*\* SUPERQBOARD OK RAM MOUSE VERSION \*\*\***

As above but without the 512K RAM board. Provides the same facilities for QL systems which have internal memory expansion or through connector RAM cards already fitted.

SANDY interfaces are compatible with all versions of the QL including German MGG and USA JSU ROM variants. Although the boards are designed to fit neatly inside the QL expansion port they will operate with any through connector memory card or suitably buffered extension board system. Internally upgraded machines will work correctly although this type of memory expansion executes more slowly than the SuperQBoard memory module.

**FITTING INSTRUCTIONS**

1. Fitting the interface card

DISCONNECT THE QL FROM ANY OTHER PERIPHERAL AND FROM THE MAINS.

The expansion port is on the far left of your QL. Gently remove the plastic cover by pulling it away from the QL using a screwdriver under the moulded tag. Look into the open end and you may find two small plastic lugs protruding down from the keyboard moulding; remove these with a sharp knife to leave a clear opening. Some German and USA versions have a metal ground contact spring on the left of the opening, this should be removed by pulling it carefully out with a pair of pliers.

Now stand the QL up on its right-hand end with the expansion port facing upwards, grasp the interface by its plastic cover and gently slide it downwards into position; the components on the interface should be to the keyboard side of the QL; there are plastic guides in the QL to locate the board correctly. When the plastic cover is 6mm from the QL casing stop and check that the board is absolutely square to the QL easing in all directions before pushing the board fully home. The plastic should then be flush against the QL easing.

2. Connecting the disk drives

DISCONNECT THE QL AND ANY OTHER PERIPHERAL FROM THE MAINS.

The interface has two ports, a 34 pin socket where you should fit your disk drive ribbon cable connector; this connector will only fit in one way up, with the notch facing upwards, so do not force it.

3. Connecting the printer

The centronics compatible printer port is a 26 pin connector. A suitable ribbon cable can be supplied by your dealer. Once again the connector plugs in one way only, with the notch facing upwards.

4. Testing the Interface

Power-up sequence:

1. Switch on the QL



## 2. switch on the disk drives

At this point, the interface will check if there is a floppy disk in the disk drive, or drive one if you have a dual disk drive, and the start up message will appear at the top of the screen with the Sinclair TV/Monitor (F1-F2) prompt at the bottom.

Notice that on machines with extra memory the memory test multi-coloured screen pattern will last longer than for a 128K machine as all the memory is checked and the disk handling routines enabled.

The memory available message is not just a fixed logo but an actual display of the free RAM found and tested by the QL on start up.

At this point you press F1 or F2 accordingly.

If the interface found a disk in the drive during reset, it will check if there is a file called "BOOT". If such a file is found, it will be loaded from disk and RUN.

If there is no floppy disk in before power-up or reset, autoboot will operate from MDV1\_ as usual.

Power-down sequence:

1. Switch off disk drives
2. Switch off QL

If the QL and disk drives are connected to one power source they may be safely powered up and down from the one switch-

## 5. Removing the Interface

If for any reason you need to remove the interface board, you MUST remember to:

DISCONNECT THE QL FROM ANY OTHER PERIPHERAL AND THE MAINS.

Unplug the disk and printer cables, grasp the SuperQBoard by the plastic cover and slide carefully out.

Note: if your QL expansion port has never been used before the plastic guides and connector pins may be quite tight - do not force the interface in; gently wriggle the board while pushing lightly in. If your QL has a really tight casing slacken the case securing screws near the expansion port and re-tighten them after the interface is installed.

MOUSE VERSION. the 9-pin connector from the mouse should not be inserted or removed while the QL is powered up. There is no standard for the pin-out arrangement on mouse systems, do not plug in any other mouse or use the SANDY mouse on any other machine without first checking that the connections are the same. Serious damage may occur if the wrong pins are connected.

MAINTENANCE: no maintenance is required and there are no user serviceable components on the interface. When handling the unit take normal care to avoid static discharge (i.e. hold the board only by the plastic ease and do not leave it lying on a non-conductive surface such as a man-made fibre carpet

