RESEARCH FELLOW

Research Machines is well known as the manufacturer of the 380Z computer, a machine originally designed for research and development purposes, which proved extremely popular in UK schools. Now, the company has produced another microcomputer aimed at the lucrative educational market — the Link 480Z.

The Link 480Z is available in either a networked or a stand-alone version; we looked at the stand-alone. On first appearances, the machine is very different from its predecessor. Whereas the 380Z consists of a large black metal box containing the computer and the disk drives connected by a cable to the external keyboard, the Link 480Z has a sturdy plastic casing, with the keyboard built in and the disk drives provided as an optional external unit. The 480Z is not a small machine — it measures 520 by 330 by 80mm — but its streamlined appearance is more pleasing to the eye than the functional and rather ugly 380Z.

The machine has a standard QWERTY typewriter keyboard, and the keys are firm with a sureness of touch that makes them ideal for word processing. The control keys, including a line feed and Repeat key for screen editing functions, are found to the left and right of the QWERTY layout. The only criticism of the keyboard is that the Return key is a little too small for ease of use.

On the right-hand side of the keyboard is a cursor cluster. In each corner of the cluster is a programmable function key — the uses to which these are put are determined by the application being run at the time.

A large selection of interface ports, situated at the back of the machine, allows the computer to be connected to a wide range of peripherals. On the extreme left is an RF jack socket, which enables the machine to be plugged into an ordinary television set. To the right is the RESET button.

The Link 480Z has two different sockets for monitors: a five-pin DIN socket, to allow the computer to be connected to the popular Microvitec range of monitors; and above this an eight-pin DIN socket for other types of TTL and RGB monitors. An accessory interface is located between the monitor and cassette ports. This is a serial input/output port that allows the connection of external devices.

To the right of the cassette port is the parallel input/output port, for the connection of parallel devices such as printers. Although the interface is not a Centronics standard, it is Centronics-compatible — meaning that while all the relevant lines are present for a Centronics device, they are not in the correct order. A little rewiring should produce a fully standard Centronics port.

The Link 480Z also has a pair of RS232 serial ports that enable the machine to be interfaced with devices such as serial printers and the twin disk drive. Next to the serial ports are 10 DIP switches. The first Switch, marked R, allows the operator to disable the RESET switch. Similarly, the second switch enables or disables the internal speaker, positioned beneath the keyboard.

The eight DIP switches at the extreme left of this range allow the user to set the network address; they are read as a binary number to give the computer an identification when it is linked into a network. As the 480Z has eight such switches, it enables up to 256 different machines to be networked. The network cable itself is fitted to a video jack on the back of the computer.

The back of the machine also features a fan to keep the computer cool, an on/off switch, a fuse and the power cable.

THE DISK DRIVES

The MD2 twin disk drive is separate from the computer itself. Surprisingly for a modern micro, the standard model is connected to the computer via a serial, rather than parallel, interface and plugs into the second RS232 port. Despite this, the transfer rate is 38.5 KBaud — comparable to many micros with parallel data transfer. The twin drives use the standard $5\frac{1}{4}$ inch floppy disks; they are double-sided and double-density, and are

Elegant Appearance
The sloping keyboard and plastic casing provide a more elegant appearance than its predecessor, the 380Z, although it is still a large machine by modern standards. This is because there are two layers of circuit boards within the machine, one for the main computer functions and one for networking