The FDFS.
A new approach to File Servers for Econet®

SJresearch

The FDFS is a purpose designed floppy-disc file server. One neat and unobtrusive box offers all the services required for a small or medium sized network, providing both a file server and two printer servers.

Full SJ Research File Server facilities

* Space accounting and access control
* Time and date stamping of files
* Compatible with level 2 and level 3 file server protocol
* Extended error messages
* Two printer channels
* Easy system management

Designed Specifically for File Serving

* 64 Kilobytes of cache RAM gives high performance
* Built-in real time clock
* Uses ordinary 80-track double sided disc drives
* Can also use high capacity "quad-density" drives
* Power outlets for two twin disc drives
* All plugs and sockets compatible with BBC micro
* Releases BBC micros from file serving and printer serving

Flexibility

The system has been designed to be as flexible as possible. The file server automatically configures itself to accommodate whatever disc drives are attached, from a single " standard" 80-track drive to four quad-density drives. This gives a resource that can grow as your needs and your budget expand.

Large Capacity

The smallest systems will give double the capacity of a file server based on a BBC machine, since the data is stored in "double-density" format. Thus each standard 80-track drive will have a capacity of 800 Kilobytes. Using two pairs of such drives the total capacity is 3.2 Megabytes. For even greater capacities, the newer types of special "quad-density" drives can be used. These look like ordinary 5" drives, but can handle twice the data transfer rate. Quad-density drives have a capacity of 1280 Kilobytes, giving a maximum capacity of more than 5 Megabytes.

Simplicity

A single floppy disc doubles as the file server boot disc and as your master utilities disc. This disc may be copied and used to get your system up and running as fast as possible, or you can make discs without a copy of the file server program and use the whole of every drive for user files. The FDFS includes a boot disc in 5" double density format as standard. The quad-density drives come with a copy of this disc in quad-density format.

Printer Servers

Two printer outputs are available, one parallel and one serial. They may be accessed independently by all network users. The system manager may specify which users may use each printer, or the printers may be made generally accessible.
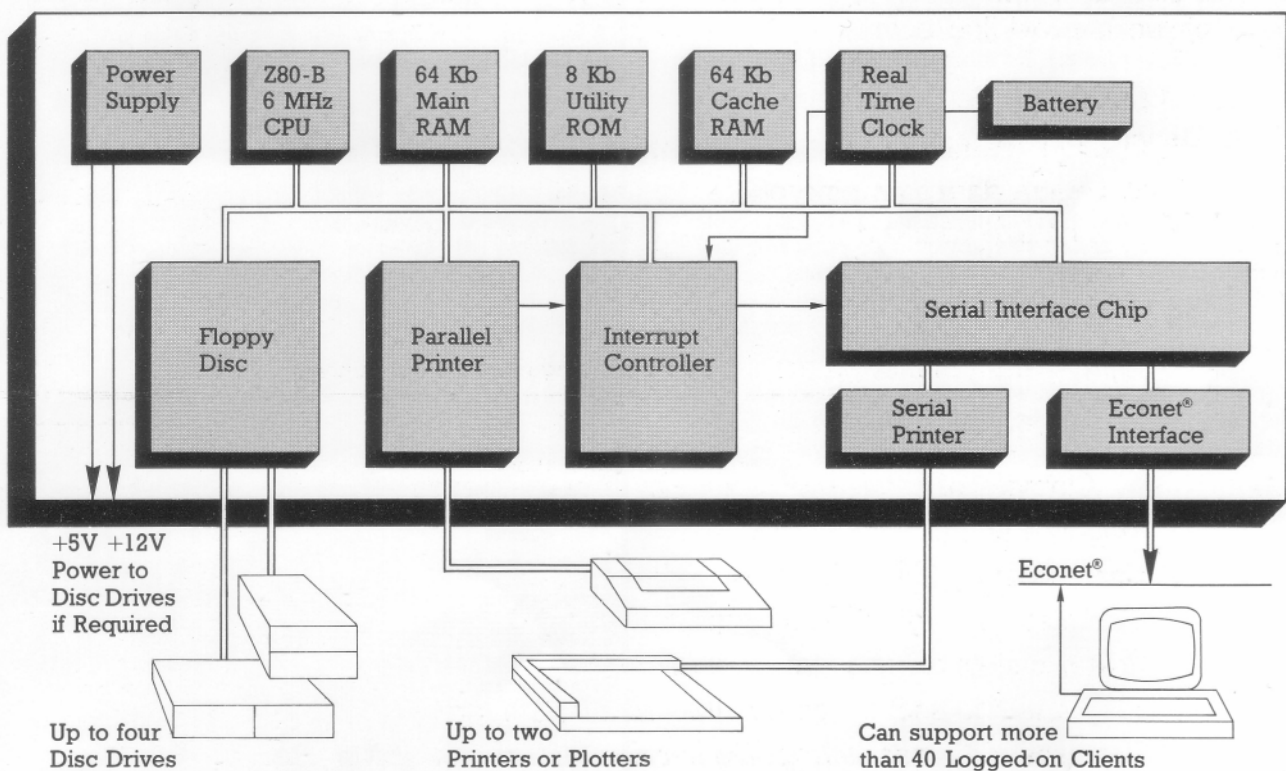
Technical Specification

FDFS

Size
305 mm wide x 330 mm deep x 75 mm high

Drive configuration
 Up to four disc drives may be attached. They must be
80-track double-sided but can be standard or quad-density in any mix. Neither single-sided nor 40-track drives are supported. The FDFS automatically checks drive configuration at every disc change. Drives with no disc inserted will be ignored.

Two disc connectors on the FDFS allow drives to be configured as one set of drives A-D, or as two pairs of drives A & B. This allows one or two pairs of standard BBC double disc drives to be used without modification.

Storage Capacity
Each double density (standard) 80-track double sided-disc drive will add 800 Kilobytes of disc space. Each quad-density drive will add 1.28 Megabytes.

Examples:

Capacity in Megabytes	0.8	1.6	2.4	2.56	3.2	3.36	4.16	5.12
Number of Std. drives	1	2	3	0	4	1	2	0
Number of QD drives	0	0	0	2	0	2	2	4

File Server Mode
The file server software is loaded from a boot disc. A double-density disc suitable for reading on a normal drive is included with the FDFS. The boot disc may be inserted into any appropriate drive for booting. The boot disc may then be used as a data disc of slightly reduced capacity, or other data discs may be inserted instead.
Further details of the file server software are given in the brochure covering the whole range of SJ Research File Servers.

Utility Mode
All normal maintenance tasks are carried out by attaching a network client through the network as a "terminal" to the file server. (This is similar to *REMOTE, but faster). No discs are needed as all the utility mode software is in ROM. This mode allows changing the station number, formatting new discs, copying discs, renaming discs and resetting the password file.

Hardware
The processor is a 6 MHz Z80-B with 128 Kbytes of RAM and 8 Kbytes of ROM. Half the memory is used as cache RAM for disc sectors, which significantly improves the overall performance of the system.

Printers
Two independent printer channels, one parallel and one serial. Both outputs connect to the printers via standard BBC micro printer leads (not supplied).

Serial Output
    RS-232 with 5-pin "domino" DIN socket.
    Uses RTS/CTS handshake.
    Baud rates available: 75,150,300,1200,2400,4800, 9600,19200

Parallel Output
    26-way IDC to 8-bit Centronics standard.
    Uses STB/ACK handshake.

Real-time Clock
This provides date and time which may be read through the network or included in printer banners. It is also used to date and time-stamp files when they are created and updated.

Connectors
All connections to the file server are identical to those on a BBC microcomputer, except that there is no -5 volt power output (this is not needed by disc drives).

Power Requirements
240 volts AC at 0.8 amps (110 volt input option selectable with internal link)

Power Outlets
Two 6-pin AMP connectors for disc drive power as used on the BBC micro, providing a total of 2.6 amps at +5 volts and 2.6 amps at +12 volts. Surge capability is suitable for 5" disc drives.

Quad Density Drives

An enclosure containing a pair of quad-density disc drives is available, styled to match the FDFS. Each pair gives a capacity of 2.56 Megabytes. Two pairs of quad-density drives may be connected to give a total capacity of 5.12 Megabytes. These drives are intended specifically for use with the FDFS and are not suitable for use with a stand-alone BBC computer.

The drives are supplied with a quad-density format File Server boot disc. They are ready to plug into the FDFS and use.

Size
305 mm wide x 330 mm deep x 60 mm high

Media
These drives use special high capacity media, which are suitable only for quad density recording. Use with ordinary diskettes will not give reliable results. Suitable discs are available from most disc suppliers, or direct from SJ Research,

Average Power Requirements
1.3 amps at +5 volts and 1.3 amps at +12 volts (supplied from FDFS)

Connectors
Data: 34-way IDC socket, to mate with FDFS header
Power: 6-way AMP plug, to mate with FDFS power outlet

Designed by Jane Norman

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