

MTX Disc Drive

The Memotech micro computers were reviewed in issue number two of D&ME, since then Memotech have introduced disc drives suitable for their micros. We can only afford a brief look at their FDX disc system.

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Sooner or later, every keen home-micro owner contemplates buying disc storage for his micro. The Memotech MTX computers have always been a choice for the serious enthusiast — so is the disc upgrade path that Memotech offers up to scratch?

Memotech move in mysterious ways. Their basic machine, as readers of D&ME issue 2 will recall, is a high-quality keyboard unit containing (in the case of the 512) a full 64K Z80 CPU board and room for two ancillary boards. It was, of course, a tape-based machine. No one launched computers complete with discs in 1983. It was something of a surprise, therefore, to find that the first Memotech upgrade was a massive dual drive CP/M system called the FDX, which requires an 80 column monitor and cost, in total some £1500.

I doubt whether many of those systems found their way into private homes.

Single FDX

However, the balance is now redressed, and Memotech can supply a single drive, non CP/M upgrade to MTX500 and MTX512 users. And it doesn't cost an arm and a leg.

Memotech upgrades tend to come in very large aluminium cases, and the floppy disc upgrade is no exception. Housed in the same chassis as



the CP/M system, the FDX single disc system consists of a Qume 5½" disc containing a wordprocessor and seven other games and utility programs, and a ring-bound operator's manual.

The ribbon cable connects between an IDC header on the RS232 board inside the MTX and an IDC header which lurks on the underside of the FDX case. The FDX case and the MTX retain their own power supplies, and the MTX retains its (40 column) domestic TV or monitor.

User Modes

The switching-on procedure is to press both illuminated mains rockers switches and RESET the computer. You may, if you wish, leave the FDX unpowered, in which case the computer thinks it's still an MTX. This is a useful feature as you might have existing software which will only run under the conditions of the normal MTX memory map.

With both units powered up, the computer behaves normally, though some subtle

changes have occurred in the VARIABLES area. The "Top of Free Space", normally F8F2, has dropped to F4F2, and after a disc access, such as reading the disc directory, it drops again, this time to D6FF. This is often a hard lesson for cassette-based owners to learn — disc systems need buffer and scratch-pad areas in RAM, so there is correspondingly less for your program.

It's a good job that the MTX512 has lots of onboard RAM, and if you are lucky enough to have the MTX-RS128 with its 128K,

CPU	4MHz Z80A
Memory	64K RAM, extra 64K board available 24K ROM, extra overlay ROM available 16K video RAM
Keyboard	79 key. Redefinable function keys Cursor cluster
Screen	TV or Monitor 40X24 text 256X192 pixels 16 colours 32 sprites 8 windows
Storage	1200 baud Single 5 1/4" 500K (Expandable)
Ports	Twin RS232 Centronics 8 user output 8 user input 2 switch-type joysticks
Sound	3 channel Sound to TV
Language	BASIC NODDY ASSEMBLER NEWWORD D.O.S. (Pascal, Logo Forth available)
Upgrades available	80 column video CP/M 2.2 Winchester drive Silicon disc

MTX-500	£199
MTX-RS128	£399
SINGLE FDX	£399

A full review of the basic MTX500/512 can be found in D&ME issue two.

Figure 1. The basic technical details of the Memotech machines.

the loss of a few K here and there will seem like a drop in the ocean.

Memotech have not replaced their MTX ROM BASIC, they've merely added to it. To use the disc facilities the word USER, or simply U. must be typed before each new command. In fact, Memotech have considered the poor programmer's fingers and contrived to make the function key F8 enter the keyword "USER". If this sounds complicated isn't it. The syntax for add-on disc systems is often appallingly convoluted on other computers, but with Memotech it's just one extra keypress. Unfortunately the DOS takes over "USER" command entirely, so, as the disc manual says, it's no longer available to the programmer.

Since the original function of "USER" was not mentioned in the MTX manual, we can all sleep easy in our beds oblivious to the problem. The keyword USR is *not* the same thing, and works quite normally.

DOS and BASIC Commands

The single disc DOS commands are limited to the essential four — FORMAT, SYSCOPY, STAT and COPY.

USER FORMAT, prepares a blank disc or recycles an existing disc so that it may be used again. The formatting process takes about 40 seconds.

USER SYSCOPY, takes system information from a "system-disc", eg the supplied original and copies it onto the first few tracks of a freshly formatted disc.

USER STAT, reports how much space is left on the disc, and the size of files which are on it, and can also be used to write-protect or write-enable a disc.

USER COPY, allows any file on the source disc to be copied onto the destination disc. The copy can be given a different

name from the original, and the source and destination can be on the same disc, or on different discs.

The BASIC disc commands are shown on **Figure 1**. Each command is explained briefly in the operator's manual, but the only sample programs given are four which relate to reading and writing to random and sequential files. Most of the manual is taken up by the instructions for using the wordprocessor NewWord, which Memotech have also made available in a 32K ROM.

This disc version is virtually identical to the ROM version, except that it saves to disc rather than to tape. Like its brother, it's very fast. The on-screen menus are held in RAM, not on disc, and the document itself can grow to quite a size before you are warned that memory is becoming full and a disc save is required. This means that, unlike the CP/M version of NewWord, the discs are not always buzzing away and preventing you from typing. On the other hand, you must live with the 40 column screen, which I think is perfectly reasonable, but type with the knowledge that single-disc NewWord is not going to supply backup copies of your work. At least with cassette-based NewWord, you have back-up copies spread all over the C90 tape!

Backups could be made by the operator, using the DOD Copy command, but to do so would necessitate leaving NewWord and entering DOS. This method is very tedious, but there is a quicker way which can be done from NewWord. It involves appending the disc document NAME onto a blank document called NAME.BAK, and then saving NAME.BAK.

Thus the original document and its backup copy are placed on the same disc. Whichever method you choose to use, it doesn't compensate for the omission of the automatic BAK file facility of the larger NewWord (and WordStar) wordprocessors.


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CLOSE #n
Close input/output channel n for a disc file.

DIR "*.*)"
As per CP/M. List all or part of disc
directory. *=any string ?=any character

EOF #n,l
Test EOF condition on channel n, if reached
branch to line l.

ERA "*.DOC"
As per CP/M. Erase a file, or types of file.

INPUT #n,variables
Read data items into variables.

KILL #n
Close and erase a currently opened file.

LINE INPUT #n,variable
Read a whole line into a string variable.

LOAD "filename"
Load from disc.

OPEN #n,"filename",type,<reclen>
Open an input/output channel for a disc file.
Type : Sequential or random may be set.
Reclen : Record length for random files.

PRINT #n,list of expressions
Write data to a disc file.

READ "filename",start,bytes
Read a block of memory from disc.

REC #n,record number
Point to a specified record in a random
access file.

REN "newname"="oldname"
As per CP/M

ROM 5
Reset a disc, update directory.

RUN "filename"
Load and auto run a program from disc.

SAVE "filename"
Save a program to disc.

TYPE "filename"
Write a disc file to the screen.

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Figure 2. The new BASIC words available when the disc drives are operating with the Memotech machines.

"Save and Resume Editing" and "Scroll Screen", which makes life that much easier, especially for amateur typists.

This version of NewWord will accept special embedded commands capable of setting virtually any printer function which is required. Thus the embedded sequence:

.XQ 1B341B47

.XR 1B351B48

will cause "double-strike italic mode" to be selected whenever PQ is encountered, while PR will turn that particular mode off. Up to eight hexadecimal characters can follow the .XQ/.XR instruction, which should be sufficient to set up any complicated printer control sequence.

.XQ and .XR can be used to constantly redefine PQ and PR to toggle a whole range of different print controls.

Conclusion

The MTX has proved its expansion potential its massive memory and generous port facilities make it a logical choice for serious programmers. It isn't really a game machine, despite having a technical specification close to the MSX standard although the sprite orientated games, of which some five are usually provided free with the basic computer and more arrive on the disc, are entertaining.

The fact of the matter is that with its many languages, including built-in assembler and front panel, and the 40 column NewWord wordprocessor, it is just about the only computer available which has a low starting cost yet can be built up in stages to a fully-fledged 1 Megabyte disc system.

The FDX single disc system represents the half-way house in this design philosophy, and it makes sense when viewed in this way.

The photography shows the dual disc version.

Having aired that grievance, I will admit that the MTX/FDX makes a good wordprocessor.

The keyboard has 79 keys and many of these are specifically marked for wordprocessing

functions. The 16 functions keys are defined by NewWord to do special tasks, such as