MEMOTECH
CFX SYSTEM
OPERATOR'S
MANUAL

Introduction

CFX is an add-on card for the Memotech MTX range of computers, designed to provide removable storage for Memotech owners who do not have one of Memotech's disk drive add-ons. The name is derived from the removable media used, **Compact Flash**.

CFX is fitted with a system extension ROM which allows access to the fitted Compact Flash card in 2 ways :

- CFX can provide a limited CPM 2.2 environment this is based on Andy Key's reverse engineering of the original Memotech FDX ROM. However unlike the FDX or REMEMOrizer, there is no additional video hardware. Instead, a 62 column display is created using narrow characters in the MTX's graphics mode, in a similar way to Andy's SCPM ROM used in Memotech Video Walls. Whilst it's not recommended for long term use, it does have much faster loading times for those games available in COM format.

or

- It can provide extensions to the built in BASIC via the USER command as used by the SDX system, and again, is based on Andy's re-creation of the source code for that ROM.

On start-up a boot screen is displayed showing a reminder of the various boot options provided :

Holding down relevant key when the system is powered on or reset will enter the associated mode as shown. Pressing <**RET**> when the boot screen is displayed will enter SDX BASIC mode, or pressing <**I**> will display a crib sheet showing SDX BASIC USER disk commands

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SDX Basic additional commands:
USER DIR
USER LOAD  "FILENAME.EXT"
USER SAVE  "FILENAME.EXT"
USER READ  "FILENAME.EXT",start
USER WRITE "FILENAME.EXT",start,length
USER MTX  "FILENAME.MTX"
USER RUN  "FILENAME.RUN"
USER ERA  "FILENAME.EXT"
USER REN  "NEWNAME.EXT"="OLDNAME.EXT"
USER COPY  "NEWFILE.EXT"="OLDFILE.EXT"
USER STAT  "<drive>:" or "FILENAME.EXT"
USER OPEN#channel,"FILENAME.EXT",type
USER CLOSE#channel
USER KILL#channel
USER PRINT#channel,variable list
USER INPUT#channel,variable list
USER LINE INPUT#channel,variable
USER REC#channel,record number
USER EOF#channel,line number
USER TYPE  "FILENAME.EXT"
USER QUIT        (perform a NEW)
ROM 5            (reset the CF)
Press <RET> to continue into SDX Basic
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CFX CPM

The CPM ROM requires a minimum of 64k of RAM fitted, it will fail to operate if used on an unexpanded MTX500.

Resetting the system with the "**C**" key pressed will boot into a full version of CPM 2.2. There are obvious limitations because of the restricted resolution and clarity of the display. As this is a full implementation, all the usual utilities and commands are available.

DIR, *ERA*, *TYPE* and *REN* work in the same way as their SDX cousins, though of course, the *USER* prefix is not required. The CPM version of *STAT* has more options than the SDX version.

Any games that are available in the COM format can be started from the command line by simply typing the name and hitting enter. Only the first part of the name is required, the full stop and COM should be omitted.

The CF card can have a maximum of 8 partitions of 8 megabytes each, of which any 4 can be used concurrently. In addition there is a support for a RAM drive ifs systems have sufficient memory

2 additional utilities written by Andy for the REMOrizer can be used to set up and access the partitions.

RECONFIG
This should be followed by a drive:partition list e.g.,

> **RECONFIG B:18 C:19 F:52**

> Which would set up 2 partitions for access as drives B and C, along with a 320k RAM drive.

Drives "B" to "E" are valid for the CFX, as are partitions 18, 19, 1A, 1B, 1C, 1D, 1E and 1F. Drive letter "A" is used as an alternative for the boot drive (normally "B") and should not be used in the RECONFIG command as there is no physical "A" drive.

The RAM drive, Drive "F", memory permitting, has 3 options :

> F:50 for a 256k drive,
> F:52 for a 320k drive, and
> F:53 is a 412k Drive.

REFORMAT
Can be used to prepare both partitions and the ram drive for use, for partitions this only has to be done once, the RAM drive would need re-initialising after each reset due to corruption from the MTX system ROM.

CFX SDX ROM

Pressing <**RET**> from the start-up screen enters the familiar blue screen of the BASIC environment. The auto run ROM will initialise the CF on start-up so all the additional commands are ready from the outset.

The SDX rom uses CPM for all disc accesses and so retaining full compatibility with the CPM ROM.

There is no need to manage separate memory cards for each option. Needing to reserve memory space for CPM does reduce the amount of memory available for basic and will cause issues with some games that are only intended to run from tape.

On an unexpanded MTX500 the amount of memory for BASIC programs is reduced to approximately 20k.

As the CFX implementation of the SDX rom is mapped into ROM bank 5, typing "***ROM 5***" will re-initialise the CF if required, without disturbing the program in memory.

All the additional commands are accessed via the USER command. The full set of SDX extensions are provided, with two omissions, attempting to format a drive or copy the system tracks, will result in an error message being produced. All format actions have to be done from the CPM side.

Like the CPM side, drive letter "A" can be used as an alternative for the boot drive as there is no separate "A" drive.

If you've used the SDX or single disc FDX, you will find that along with the 2 commands that have been disabled there is one extra command added.

In addition the control ROM has been extended so that it can see the first 4 partitions, and access them as drives "B" to "E", unlike the CPM side, it's not possible to re-map the drive letter to point to the last 4 partitions. Increasing the number of partitions means that the NODE networking software will not coexist with CFX

Attempting to access drive letters above "E" will result in an error being displayed, and may need the CF re-initialising with "*ROM 5*".

The RAM drive is not available in SDX mode even if memory is available.

SDX BASIC Program Commands

SAVE

USER SAVE "Filename.ext"
Will save to the B drive, partition 18, by default

USER SAVE "x:Filename.ext"
Will save to the specified drive x as long as it's in the A-E range

File names don't have to be in upper case, however files with lower case characters won't be accessible from the CPM rom. File name extension is optional, the BASIC extensions will attempt to load any file when requested. Specifying the drive is optional for all the disc commands, the default is the A/B drive if the letter isn't specified.

LOAD

USER LOAD "filename.ext"
Will attempt to load the named file as a BASIC program, whatever the extension

RUN

USER RUN "filename.ext"
Attempt to load and run a binary game image file, the first 4 bytes providing the start address and length of the data. Used to load a number of, mostly early Continental Software, games that have been converted using the tape to disc software that was available for the FDX/SDX or that were converted for MAGROM. Conventionally the extension used for these types of file is RUN but this does not have to be the case.

MTX

USER MTX"filename.ext"
Will attempt to load a MTX format tape image file, any multi part images are likely to fail. The command may enable some games that are not available in the other supported formats to load. As with RUN , the file extension for this type of file is normally MTX

Commands for loading and saving raw data directly from the MTX's memory

WRITE

USER WRITE "filename.ext",<start>,<size>
Save a block of memory to the named file starting at *<start>* and *<size>* bytes long.

READ

USER READ "Filename.ext",<start>
Attempt to read a file into memory beginning at address <start>.

Data File Handling Commands

OPEN

USER OPEN#<channel no>,"filename.ext",<type>(,<reclen>)
Open a file for input/output, valid channel numbers are 1-4. *<type>* is a string type, and can be "*O*" output," *I*" input or "R" random I/O. the quotes are required. *<reclen>* is an optional record length for random files.

An error will be reported if the file is already open.

CLOSE

CLOSE#<channel no>
Closes a currently open file.

KILL

USER KILL#<channel no>
Close and erase a currently open file. Use with care.

INPUT

USER INPUT#<channel no>, arguments

Will read numeric or string data from an open file, an error will occur if the variable types don't match.

LINE INPUT

USER LINE INPUT#<channel no>, arguments
Read an entire line into a string variable.

PRINT

USER PRINT#<channel no>, arguments
Send numeric or string data to an open file.

REC

USER REC#<channel no>,<position>
Move the file pointer in a random access file to the specified record in preparation for the next action.

EOF

USER EOF#<channel no>,<line no>
Will do a GOTO *<line no>* in BASIC if the end of file marker has been reached for the channel
selected.

Disc Maintenance Commands

DIR

USER DIR is use in the same way as the CPM command both "*?*" and "***" wildcards are allowed, all 4 legal partitions can be accessed.

ERA

USER ERA is use in the same way as the CPM command both "*?*" and "***" wildcards are allowed, all 4 legal partitions can be accessed, care should be taken as inappropriate wildcards could result in the entire partition being wiped.

STAT

USER STAT"Filename.ext"
Will display basic file info

USER STAT"x:"
Will display basic partition info

TYPE

USER TYPE "filename.ext"

Will read and display a file on the screen, control characters are displayed, so typing a data file could have unexpected consequences!

REN

USER REN "newname.ext"="oldname.ext"
Rename a file in the same way as CPM, except lower case is allowed.

COPY

USER COPY "newfile.ext"="oldfile.ext"
Will copy files on the same partition, or across partitions.

QUIT

USER QUIT
Equivalent of NEW, will run NCPM.COM if found, otherwise enters BASIC.

Legal, but Disabled Commands:

FORMAT & SYSCOPY

USER FORMAT is disabled and will return an error if used.

USER SYSCOPY is disabled and will report an error if used.