# Kenda Professional DMFS with PADS

## THE FILING SYSTEM FOR THE SERIOUS USER OF THE BBC MICROCOMPUTER


- Both sides of the disc treated as one storage area
- Up to 380 files per disc and up to 255 users
- Maximum file size in excess of 700K bytes
- No 'Compact' necessary
- Random access – any file easily extended until disc full
- All files open for output can be individually extended
- 'Can't extend' cannot occur
- No user RAM, up to 3 files open – page 0E00
- Optional, up to 5 file open – page 1900
- Global or selective STAT of files, also with Lock and Unlock
- Expanded error codes and wildcards handling
- File dumps displayed in HEX and ASCII
- Wide range of commands plus many utilities
- Good tolerance to disc drive variations
- Auto internal diagnostics
- Ideal for data-base applications

The Kenda Disc Management Filing System (DMFS) with PADS is a powerful disc filing system package which, by using its own RAM, is able to operate without making demands on user memory.

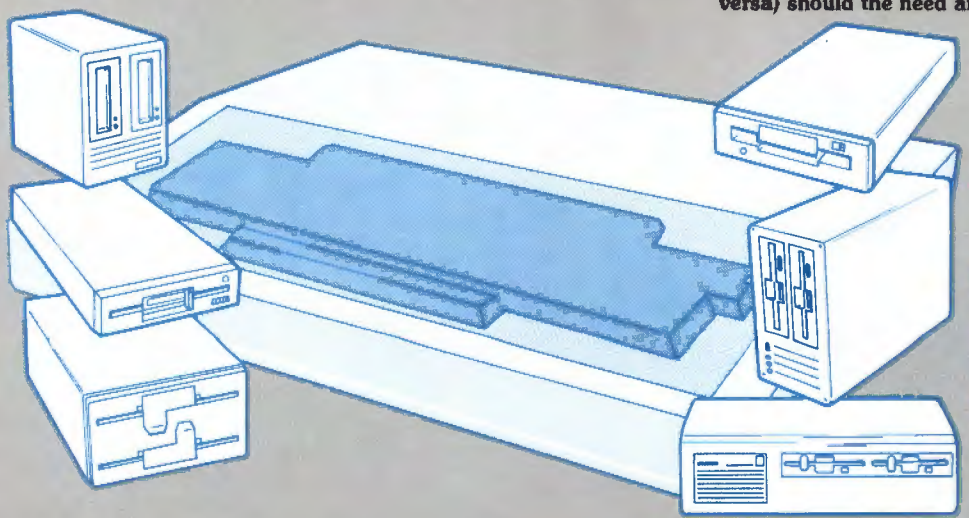
The total package comprises the main module, protected by a lightweight shell, four associated I.C.s, a high quality disc containing Utility Programs and a comprehensive manual with sections on installation and operation, together with useful reference tables.

The Professional DMFS operates in either single or double density, with Auto Density Recognition and supports up to two disc drive units. It should be noted that Double Sided drives are treated as one continuous recording surface. This allows for a maximum Single File Size in excess of 700K Bytes.

The PADS (Professional Architecture for Disc Storage) software is based on a three level structure, each having a defined function, where all available space on the disc is utilised and file handling optimised. The disc architecture is intentionally structured as †CP/M, to achieve maximum flexibility, with space dynamically allocated in blocks of one or two kilobytes dependent upon density. Some obvious benefits, such as 'Compact' not being necessary and 'Can't extend' never occurring, are particularly helpful especially in Database applications.

One very important feature of the DMFS is the Erased File Directory which prevents immediate loss of data. When a file is erased, the associated blocks cannot be overwritten unless the file is deleted a second time. Until then, the file may be recovered by use of the unerase command.

Provision of such a powerful system, which removes fairly severe limitations normally encountered, has necessitated deviation from the standard DFS format. Software utilities are therefore provided to copy discs from DFS to DMFS (and vice-versa) should the need arise.



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# Specifications

## TABLE OF COMMANDS

Standard DMFS *Commands

| Command | Abbreviation | Description |
|---|---|---|
| *A: | – | Select drive A |
| *B: | – | Select drive B |
| *CAT | *. | Give file directory |
| *CUB | – | Call utility back |
| *COPY | *COP. | Copy file |
| *CURE | *CU. | Implement DFS commands/file spec. |
| *DIRERA | *DIR. | Give erased file directory |
| *DISC | *D. | As *DMFS |
| *DISK | *D. | As *DMFS |
| *DMFS | *D. | Select the DMFS |
| *DPAGE | *DP. | Set default to &1900 after next break |
| *DSTEP | *DS. | Double step the drives |
| *DUMP | *DU. | Dump the contents of file |
| *ERA | *ER. | Erase file(s) |
| *EXEC | *E. | Load ASCII data as keyboard input |
| *HELP | *H. | List available commands |
| *LOAD | *L. | Load a machine code program |
| *NSTEP | *NS. | Normal step the drives |
| *PIP | *P. | Copy file |
| *PURE | *PU. | Page/Cure reset. Turns off *DPAGE & *CURE |
| *RENAME | *RE. | Rename file |
| *RUN | *R. or */ | Load and run a machine code program |
| *SAVE | *S. | Save a machine code program |
| *SPOOL | *SP. | Save ASCII data from screen |
| *STAT | *ST. | Give disc or file status; lock/unlock a file |
| *TYPE | *TY. | List an ASCII file |
| *UNERA | *U. | Recover erased file(s) |
| *USER | *US. | Select/Display user |

Standard DMFS BASIC Commands

| Command | Abbr. | Description |
|---|---|---|
| CHAIN | CH. | Load & run a BASIC program |
| LOAD | LO. | Load a BASIC program |
| SAVE | SA. | Save a BASIC program |

Commands acted upon after *CURE

| DFS Cmd. | Equivalent DMFS Cmd. |
|---|---|
| *DELETE | *ERA |
| *DESTROY | *ERA |
| *DIR | *USER |
| *DRIVE | *A: OR *B: |
| *INFO | *STAT |
| *WIPE | *ERA |

Recognised after *CURE but ignored

| DFS Cmd. | Alternative DMFS Cmd. |
|---|---|
| *ACCESS | *STAT |
| *BACKUP | BACKUP utility |
| *BUILD | BUILD utility |
| *COMPACT | Not required |
| *ENABLE | Not req. (Auto file back up) |
| *LIB | – |
| *LIST | *TYPE |
| *TITLE | – |

## DMFS UTILITIES

'filename' .BAS

| | |
|---|---|
| BUILD | File creation from keyboard (similar to DFS *BUILD) |
| COPYALL | Copies all current user files from drive A to drive B |
| MENU | Lists and allows selection of .BAS, .COM and .SUB programs |

'filename' .COM

| | |
|---|---|
| BACKUP | Disc image copy |
| CUTI | One pass copy of main DMFS utilities |
| FORMAT | Formats disc using optional parameters |
| GROW | Copies disc from DFS format to DMFS format |
| RDFS | Allows some direct use of DFS format discs |
| REINIT | Clears the directories and resets the ALV |
| SHRINK | Copies disc from DMFS format to DFS format |
| USERS | Lists active users (first 64 directory entries only) |
| VERIFY | Comprehensive verify program using optional parameters |

## DISC ARCHITECTURE

| | Single Density | **Double Density** |
|---|---|---|
| Format | 8–80 tracks | **8–80 tracks** |
| Sectors/track | 10 | **18** |
| Bytes/sector | 256 | **256** |
| Reserved tracks | 3 (0–2) | **2 (0,1)** |
| Soft stagger | 2 sectors | **3 sectors** |
| Blocksize | 1 kilobyte | **2 kilobytes** |

| Max. capacity | Files | Space | **Files** | **Space** |
|---|---|---|---|---|
| 40Tk. S.S. | 89 | 94208 | **82** | **172032** |
| 40Tk. D.S. | 182 | 192512 | **169** | **352256** |
| 80Tk. S.S. | 186 | 196608 | **169** | **352256** |
| 80Tk. D.S. | 380 | 401408 | **346** | **720896** |

N.B. Space in bytes after formatting

## DMFS ERROR CODES

| | | | | | |
|---|---|---|---|---|---|
| 192 | &C0 | Too many files opened | 206 | &CE | Bad user/directory |
| 193 | &C1 | File R.O. or locked | 208 | &D0 | Wrong track |
| 196 | &C4 | File exists | 209 | &D1 | No block |
| 198 | &C6 | Disc full | 210 | &D2 | No extent |
| 199 | &C7 | Disc or drive fault | 214 | &D6 | File not found |
| 200 | &C8 | Wrong ALV | 222 | &DE | Bad channel |
| 201 | &C9 | Disc read only | 223 | &DF | End of file |
| 204 | &CC | Bad file name | 254 | &FE | Bad command |
| 205 | &CD | Bad drive | | | |

Error codes when using OSWORD are FDC dependent

## DMFS DISC CALLS

| | | |
|---|---|---|
| OSFILE | &FFDD | R/W whole file or attributes |
| OSARGS | &FFDA | Read/write file data |
| OSBGET | &FFD7 | Read single byte from file |
| OSBPUT | &FFD4 | Write single byte to file |
| OSGBPB | &FFD1 | Group of bytes operation |
| OSFIND | &FFCE | Open/close file |
| OSWORD | &FFF1 | ALV & FDC access |
| OSFSC | (&21E) | Filing system control |

Parameters in DMFS User Guide

## OTHER DMFS MESSAGES

| | |
|---|---|
| Files open! | All files not closed |
| BBM | Bad Block Mark |
| CRC | Cyclic Redundancy Check |
| SNF | Sector Not Found |
| TMO | Time-out on disc access |
| FDC, RAM, ROM | Auto diagnostic errors |

## DMFS WILDCARDS

* Global
\# Selective

Note *Stat will lock or unlock files on a global or selective basis

Commands supporting ambiguous filenames

| DMFS Cmds. (Cure on or off) | DFS Cmds. (Cure on) |
|---|---|
| *CAT | *DELETE |
| *ERA | *DESTROY |
| *RENAME | *INFO |
| *STAT | *WIPE |
| *UNERA | |

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