

dip POCKET *pc*

Utilities

Software for the DIP Pocket PC

User Manual



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INTRODUCTION

The Utilities Card is a memory card containing a number of files that provide utility commands to enhance the facilities of the Pocket PC. These utilities are of particular benefit to writers of batch files, but also provide extra facilities from the DOS prompt.

The Utilities Card also contains a device driver, ANSI.SYS, which can be installed to provide enhanced display handling for applications that require it, and support for keyboard redefinition.

Installing the utilities

To use the utilities described in this guide, you simply need to insert the Utilities Card in the card drive, which is the slot on the left of the Pocket PC. Make sure the card is inserted with the PINS VISIBLE, in other words, facing UP. You can then use the utilities from DOS by typing the drive letter followed by the utility name. For example, to use the command named TOD, you would type:

A:\TOD [-J]

To make using the utilities a little simpler, you can either:

- a) Add the card drive's root directory to the DOS search path, using the PATH command. (See "Modifying the search path" for more details).

OR

- b) Copy the utilities that you want to use from the Utilities Card to a directory on drive C which is already on your search path. (See "Copying the utilities" for more details.)

This will allow you to use the utilities by simply typing their names, whatever the current directory or drive.

If you have not already set FILES to 20 in your C:\CONFIG.SYS file (as recommended in your Owner's Manual), certain utilities will not work correctly. Modify the CONFIG.SYS file to set FILES to 20 as described in your Owner's Manual.

Modifying the search path

To examine the current path, type:

```
PATH [↵]
```

The path will be displayed like this:

```
PATH=C:\;C:\APPS
```

if there is already a search path, or like this:

```
PATH=
```

if there isn't one.

To add the utilities to the search path, simply type the displayed line, followed by ;A:\ and press [↵]. For example:

```
PATH=C:\;C:\APPS;A:\ [↵]
```

This new path setting will remain until you next reboot. To preserve the path, add the PATH command you've just typed to the AUTOEXEC.BAT file which is in the root directory of drive C. (If there isn't an AUTOEXEC.BAT file, create one.) Remember that if there is a card with an AUTOEXEC.BAT file in drive A or B when you reboot, the operating system will execute it rather than the C:\AUTOEXEC.BAT file.

(As the utilities are stored on the Utilities Card, you can prevent access to them by removing the card. You should also delete the A:\ entry from the end of the PATH.)

Copying the utilities

If you want to be able to use utilities without the Utilities Card, you can copy the appropriate file(s) from the card to the internal drive (drive C). To allow you to use the utilities from any directory, copy them to a directory which is on your search path. (See the PATH command in your Owner's Manual.)

For example, to copy all the utilities from the drive A to C:\APPS, type the following:

```
COPY A:\*.* C:\APPS [↵]
```

Installing ANSI.SYS

To use the ANSI.SYS device driver, you must install it as follows:

1. Copy the ANSI.SYS file to the root directory of drive C:
COPY A:\ANSI.SYS C:\ [-]
2. Edit the CONFIG.SYS file in the root directory of drive C to add the following line:
DEVICE=C:\ANSI.SYS
2. Perform a warm reboot (e.g. press **[CTRL][ALT][DEL]**).

The device driver will remain active through subsequent warm boots. (To remove it, delete the **DEVICE=C:\ANSI.SYS** line from **CONFIG.SYS** and reboot.)

See Appendix B for details of the facilities it provides.

If you want to move ANSI.SYS from the root directory, copy the file to a subdirectory on drive C and amend the **DEVICE=** line to specify the file's new location. For example, if you copy ANSI.SYS to the **\SYSTEM** directory, change the line in **CONFIG.SYS** to read **DEVICE=C:\SYSTEM\ANSI.SYS**. Do not reference any other drive other than drive C.

Using the utilities

To use a utility, you simply type its name while at the DOS prompt, followed by any options or other information required to use the utility.

The commands are listed briefly within this chapter, in alphabetical order and grouped by function. They are then described in detail in the remainder of the manual, with a syntax summary in Appendix A.

To remind yourself of the command options and purpose, type the command name followed by **/?**. This will display a brief summary.

For example, to find out about the **ATTRIB** command, type:

ATTRIB /? [-]

For details of setting up and using printers, see your Owner's Manual.

Conventions

The following conventions are used to describe syntax in this manual, which are similar to those in the Owner's Manual. They are summarised here for your convenience:

- TEXT** Text which you should type exactly as shown. (You may however use capitals or small letters.)
- (TEXT)** Optional text. Do not type the () brackets.
- [(A)(B)]** A number of alternatives (A, B), of which only one may be used at a time. Do not type the [] or () brackets.
- [~]** A key to press (in this case, the RETURN or ENTER key).
- text** A description of what to type rather than the text itself. The following descriptions are used:
- key1 x** Hold down key1 and press x. For example, **[CTRL][A]** means hold down **[CTRL]** and press the **[A]** key.
- file** A single explicit filename, with an optional drive or extension. Wildcards are not permitted and the filename cannot be a subdirectory name. For example:

SPEC.TXT

(the file SPEC.TXT, in the current directory.)

C:\PROG.COM

(the file PROG.COM, in the root directory of drive C.)

- wild** A filename or subdirectory name, with an optional drive or extension. This may include the wildcard characters, * or ?, to specify more than one file or subdirectory. If wild is a subdirectory name, it specifies all files in that subdirectory. For example:

***.ASM**

(all files in the current directory, with the extension .ASM)

C:\SYSTEM

(all files in the subdirectory SYSTEM of drive C; equivalent to c:\SYSTEM*.)

C:MANUAL

(the file MANUAL, with no extension)

.

(all files in the current subdirectory)

(all files in the current directory which do not have an extension, or

which have the default extension for this command, if there are no such files.)

drive A drive letter followed by a colon. For example:

A:

(drive A:)

C:

(internal drive C:)

Switches

A switch starts with a / followed by one or more characters and is included at the end of a command (ie after any other arguments) to change how the command works.

For example, using the XDIR command as an example:

XDIR /? Display help information for this command, summarising its syntax and function.

XDIR /P When output reaches the bottom of the screen, display a "Strike a key when ready" message and wait for the user to press a key before displaying the next page.

Most of the utilities support the /? switch; many also support /P. The different utilities also support a range of other switches.

You can use the supported switches in any combination, in any order. You do not have to leave spaces between them. For example:

XDIR /A/B/C [-]

Finally, if you are using more than one switch, you only need to type the first / character, so the previous command could be typed as:

XDIR /ABC [-]

Files summary

The utilities card contains the following files:

ANSI.SYS	Extended screen control device driver.
ASK	Get a key during batch file execution.
ATTRIB	Display or change a file's attributes.
BEEP	Sound the internal buzzer.
CMDEDIT	Command line editor.
DIF	Display the differences between 2 text files.
DSKCHK	Check a drive for lost files and consistency.
FIND	Search a set of files for a given string.
FREEDSK	Display the free space on a given drive.
FREEMEM	Display the free memory.
KSIM	Simulate keypresses using a control file.
KSIMCOMP	Compile a text file into a KSIM control file.
MODE	Configure system settings.
PASSWORD	Password-protect data stored on Pocket PC.
REBOOT	Re-boot the Pocket PC.
SORT	Sort a text file.
SPOOL	Enable background printing.
TOD	Display the date and time.
XCOPY	Copy or move files in subdirectories.
XDIR	List files in subdirectories.

File handling

The following utilities provide enhanced file handling facilities from the DOS prompt:

ATTRIB	Change or display file attributes.
DIF	Compare text files and list differences.
DSKCHK	Check the file status of a drive and restore lost clusters.
FIND	Search files for a specified string.
SORT	Sort lines from files or an input device, in ascending or descending alphabetical order, optionally deleting duplicated lines.
XCOPY	Copy or move files, optionally including files in subdirectories.
XDIR	List files including subdirectories.

Batch enhancements

The following utilities are mainly intended for use within batch files:

ASK	Display a prompt and wait for one of a set of keys, then return an ERRORLEVEL indicating the key pressed.
BEEP	Sound the buzzer.
FREEMEM	Display the free memory and return it in ERRORLEVEL.
KSIM	Emulates keyboard input by using a file compiled using KSIMCOMP.
KSIMCOMP	Compiles a file for use by KSIM.
FREEDSK	Display the disk free space and return it in ERRORLEVEL.
MODE	Modify the setup facilities, such as changing the display language or printer configuration.
PASSWORD	Password protect the machine.
REBOOT	Perform a cold or warm reboot.
TOD	Display the day, date and time and return the current language in ERRORLEVEL.

Miscellaneous

ANSI.SYS	Extended screen output device driver. This is not a command; to use it, you must insert the command <code>DEVICE=C:\(directory)ANSI.SYS</code> in the CONFIG.SYS file on drive C, then reboot. See Appendix B for details of the facilities it provides.
CMDEDIT	Install command line editing within DOS, including a history mechanism that allows you to view or retype previous commands with a minimum of effort.
SPOOL	Install background printing and graphics screen dump support (to Epson/IBM graphics printers).

ASK Get key from user

SYNTAX

ASK prompt	Display a prompt and wait for any key.
ASK prompt,keylist	Display a prompt and wait for a key specified in keylist.
ASK /?	Display help information.

OPTIONS

prompt Any sequence of text characters, which specify the prompt to display. If it includes a comma, then the whole prompt should be enclosed in " characters, otherwise they are not required.

keylist A sequence of one more text characters, which specifies which keys the user may type. It can include any characters (even a comma or "). Capital and small letters are equivalent, so for example, 'Y' is identical to 'y'.

Note that ASK does not support any switches, other than /?.

NOTES

ASK displays the prompt (if supplied), clears the keyboard buffer, then waits for the user to press a key. If there is no keylist, it will accept any key; if there is a keylist it will only accept keys if they are in the keylist and will buzz if they are not.

Once an acceptable key has been pressed, ASK displays the key at the end of the prompt, and terminates after setting ERRORLEVEL according to the key's position in the keylist. For example, if the first key in the list is pressed, ERRORLEVEL will be set to 1.

If there is no keylist, ASK sets ERRORLEVEL to 0.

Note that ASK returns immediately the user presses an acceptable key; the user does not have to press [↵].

EXAMPLES

The following batch file shows how to use ASK to find out if the user wants to set the date and time:

```
@ECHO OFF
TOD
ASK Do you want to set date/time?,yn
if errorlevel 2 goto END
date
time
:END
```

If this example is included in AUTOEXEC.BAT, every time the Pocket PC is rebooted the user will be asked if they want to set the date and time. (This may be necessary after pressing the reset switch on the base of the Pocket PC.)

The first line (@echo off) stops each line of the batch file from being echoed to the screen. The next line (tod) uses another card utility, TOD, to display the current date and time. The third line uses ASK to ask the user if they want to set the date or time, and then wait for them to type 'y' or 'n'. If the user types 'n', ASK sets ERRORLEVEL to 2, so the next line (if errorlevel 2 goto END) jumps to the label END. If the user types 'y', ASK sets ERRORLEVEL to 1, so the DATE and TIME commands are executed, to allow the user to set the date and time.

The next example simply displays a message and waits for the user to press any key, because there is no keylist:

```
@ASK Hit a key when ready:
```

This is similar to the DOS PAUSE command. The @ sign before the ASK command stops the command itself from appearing on the screen.

ATTRIB Display/change file attributes

SYNTAX

ATTRIB wild (/P)	Display file attributes.
ATTRIB wild [(+)(-)](R)(A)(H)(S)	Change file attributes.
ATTRIB /?	Display help information.

OPTIONS

wild	A filename (which may include wildcards) which specifies the file(s) to process.
/P	Pause at the end of each screenful of output and wait for the user to press any key.
/?	Display help information.

NOTES

ATTRIB displays or sets the attributes of all the files specified by **wild**.

If neither + nor - are supplied, **ATTRIB** simply lists the files and their attributes. If an attribute is set, the letter appears in the attribute field. If an attribute is clear, a '-' sign is shown. For example:

-A-- AUTOEXEC.BAT

If + is supplied the attribute is SET, and if - is supplied the attribute is RESET. The + or - must be followed by any of the attributes:

R	Read only: the file cannot be changed, deleted or renamed.
A	Archive: this file has not been archived (eg by using XCOPY) since being created or changed.
H	Hidden: this file is hidden from normal DOS file access (eg the DIR command) and cannot be deleted.
S	System: this file is hidden from normal DOS file access (eg the DIR command) and cannot be deleted.

(This command is similar to the MS-DOS ATTRIB command, but allows users to display and change the S, H and A attributes. Note that the MS-DOS command requires the attribute specification before the file specification.)

EXAMPLES

The following command will list the attributes of all files in the current directory:

```
attrib *.* [-J]
```

Producing, for example:

```
-A--    CONFIG.SYS  
RA--    AUTOEXEC.BAT  
      2 files found
```

This indicates that CONFIG.SYS can be written to since 'R' is missing, AUTOEXEC.BAT is read-only, neither file has been backed up since they were created or modified, and they are both listed with the DIR command.

The following command will prevent deletion or modification of all batch files in the subdirectory c:\system:

```
attrib c:\system\*.bat +r [-J]
```

The following command will hide all files in the current directory with 2 character names that begin with any character followed by the letter 'B':

```
attrib ?b.* +h [-J]
```

BEEP Sound the internal buzzer

SYNTAX

BEEP tone duration
BEEP /?

Sound a tone.
Display help information.

OPTIONS

tone A decimal number in the range 1 to 25, specifying the pitch of the sound (see the following table).

duration A decimal number in the range 1 to 65535, specifying the duration of the sound, in multiples of 10 milliseconds.

NOTES

Activate the internal buzzer with the given tone, for the time specified by duration.

The pitch corresponding to each value of tone is as follows:

tone	Freq. (Hz)	tone	Freq. (Hz)	tone	Freq. (Hz)
1	622	11	1109	21	1976
2	659	12	11757	22	2093
3	698	13	1245	23	2218
4	740	14	1319	24	2349
5	784	15	1397	25	2489
6	831	16	1480		
7	880	17	1568		
8	932	18	1661		
9	988	19	1760		
10	1047	20	1865		

BEEP will set ERRORLEVEL to 1 if the tone is not in the range 1 to 25 inclusive, or the duration is less than 0 or greater than 65535.

EXAMPLE

beep 10 25 [-]

Will sound the buzzer for half a second at 1046.5 Hz. (This is the sound generated by the error messages in the applications.)

CMDEDIT Command line editing & history

SYNTAX

CMDEDIT	Install CMEDEDIT.
CMDEDIT /U	Un-install CMEDEDIT.
CMDEDIT /?	Display help information.

NOTES

The command CMEDEDIT installs a Terminate and Stay Resident program (TSR) which provides enhanced command line editing, replacing the standard DOS line editor (via [F1], [F2] etc), and a command history facility, which stores subsequent commands so you can view and retype them with a minimum of effort.

You can remove the Utilities Card at this stage if you wish, as the TSR does not require it for operation.

CMDEDIT uses approximately 1.1K of memory. To deactivate it and release the memory, reboot or un-install it by using the command CMEDEDIT /U. (If you have installed other TSRs after CMEDEDIT you must remove these too to free the memory.)

Command editing

Once CMEDEDIT has been installed, when you are typing on the command line, you can use the following keys to edit the text before pressing [↵]:

[←]	Move cursor left
[→]	Move cursor right
[HOME]	Move the cursor to the start of the line
[END]	Move the cursor to the end of the line
[CTRL] [←]	Move to the start of the previous word
[CTRL] [→]	Move to the start of the next word
[⇐]	Delete the character to the left
[DEL]	Delete the character under the cursor
[INS]	Toggle the insert/overwrite mode. (You are initially in the mode shown by [LOCK].)
[CTRL] [E]	Delete to the end of line
[CTRL] [B]	Delete to the beginning of line
[CTRL] [⇐]	Delete to the start of the word
[CTRL] [W]	Delete to the end of the word
[ESC]	Delete the entire line

(If you want to edit the line after pressing [↵], you can use the command history facility to recall it and then edit it.)

Command history

Once you have installed the CMDEDIT, it will store all commands of 3 or more characters that you type subsequently, in the 'history list'. The history list has room for 300 characters (for example, 30 commands of 10 characters each); if you type more than this, the oldest commands will be discarded to make room for the new commands.

If you type a command that is the same as the previous command, it will not be stored, to conserve memory.

To view the commands in the history list, use the [↑] or [↓] keys. Press [↑] to display the most recent command, then keep pressing it to move through the list towards the oldest stored command. Press [↓] to display the oldest command, then keep pressing it to move through the list towards the most recent command.

If you just want to check what commands you've used, erase the displayed command by pressing [ESC], and you can type commands as normal.

To use the displayed command, simply press [↵] and it will be executed exactly as if you had just typed it. If you wish to modify it first, use the command line editing keys described above, before pressing [↵].

(The history list 'wraps round', so if you keep pressing [↑] you will eventually return to the most recent command, or if you keep pressing [↓] you will eventually return to the oldest command.)

EXAMPLES

To install the command line editor and history, type:

```
cmdedit [-J]
```

If you typed the following command:

```
copy *.tx \bak [-J]
```

and then realised that you meant to copy the TXT files, rather than retype the command, you could use command history to recall and edit it:

- 1 Type [**↑**] to recall the last line:

```
copy *.tx \bak_
```

- 2 Press [**←**] until the cursor is positioned after the X:

```
copy *.tx_ \bak
```

- 3 Type [**T**] to insert a T:

```
copy *.txt_ \bak
```

- 4 Press [**J**] to execute the command.

To remove the CMDEDIT from memory, type:

```
cmdedit /u [-J]
```

DIF Display differences between text files

SYNTAX

DIF wild1 (wild2) [(/p)(/1)(/2)(/3)(/4)(/5)(/6)(/7)(/8)(/9)]
Display differences between files.

DIF /? Display help information.

OPTIONS

- wild1 A filename or directory name specifying the first file(s) to compare.
- wild2 A filename or directory name specifying the file(s) to compare with.
- /p Pause at the end of each screenful of output and wait for the user to press a key.
- /1 etc Alter the comparison window (see below) to 1, 2 etc.

NOTES

DIF compares the text file(s) specified by wild1 with the files specified by wild2. If wild2 isn't supplied, wild1 will be used but with the extension .BAK.

If it finds no differences, DIF displays the message file1 = file2.

If it finds any differences, DIF displays the first filename and line number, followed by the line and subsequent lines from that file until it has found a number of consecutive lines which are identical in each file. It then displays the same information for the second file, and continues the comparison and only begin listing lines again if they differ.

The number of lines is normally set to 3, so that DIF will only consider the files to match again ('resynchronise') when it has found two consecutive matching lines. You can change this setting by using one of the numeric switches; for example, /1 makes DIF display only the non-matching lines.

If the two files being compared are very different, DIF will report:

Files too different

and abort the comparison of those two particular files.

NOTE: DIF will not operate correctly on binary files. It requires text files, with lines that end with [-] characters.

EXAMPLES

To compare AUTOEXEC.BAT with AUTOEXEC.BAK, type:

```
dif autoexec.bat [-]
```

As you have not specified wild2, DIF uses wild1 with the extension .BAK automatically.

For example, if the files were:

AUTOEXEC.BAT

prompt \$p\$g

path=a:

ver

vol

dir

a:ksim diary

echo hello

echo There

AUTOEXEC.BAK

prompt SP\$G

path=a:

ver

volt

dir

a:ksim diary

echo hello

echo There

the differences would be listed as follows:

```
** 1 AUTOEXEC.BAT *****
```

```
prompt $p$g
```

```
path=a:
```

```
ver
```

```
vol
```

```
-- 1 AUTOEXEC.BAK -----
```

```
prompt SP$G
```

```
path=a:
```

```
ver
```

```
volt
```

```
1 file differenced
```

To list more or less of the parts that differ, use the numeric switches. For example, to list only the lines that differ, use the /1 switch. This would produce the following:

```

** 1 AUTOEXEC.BAT *****
prompt $p$g
-- 1 AUTOEXEC.BAK -----
prompt $P$G
** 4 AUTOEXEC.BAT *****
vol
-- 4 AUTOEXEC.BAK -----
volt

1 file differenced
```

To compare all the files in the subdirectory C:\TXT with files of the same name in the subdirectory C:\BAK, type:

```

dif c:\txt c:\bak >dif.lst [-]
```

Here, output redirection is used to store the result in the file DIF.LST.

DSKCHK Check a disk

SYNTAX

DSKCHK (drive) (/F) Check and repair a disk.
DSKCHK /? Display help information.

OPTIONS

drive The drive containing the disk to check. If omitted, the current drive is assumed.

/F Correct errors, if found.

NOTES

Use DSKCHK to check the disk structure, for faults such as corrupted or lost clusters, and to correct any errors found.

If you have problems using the internal disk or memory card, you should check it by using DSKCHK. (The most likely causes are momentary power loss or a program error.)

To check the structure of the current disk, simply type DSKCHK. To check the structure of another disk, type DSKCHK followed by the drive name. If the disk is error-free, DSKCHK will display the message:

Disk has no errors

If DSKCHK finds any errors, it will report them with error messages like this:

```
file.ext has an invalid cluster
file.ext is crosslinked
file.ext has an invalid file size
nnn lost clusters in nnn chains
```

The first three messages indicate that there are serious errors in the disk structure which affect the named file. **DO NOT USE THAT FILE!** Use DSKCHK to correct the disk structure, then restore the file from your most recent backup. If you do not have a backup, you may be able to use the file after DSKCHK has processed it.

The last message indicates that data is stored on the disk which is not accessible as a file; this is not so important, it simply means that some of the disk space is being wasted.

You can attempt to correct them by typing the command again, but with the /F switch. DSKCHK will display the following prompt to check that you want to correct errors:

Modify disk
Are you sure (Y/N)?

Type [Y] [↵] to continue. If DSKCHK has found any lost clusters, it will also ask you if you want to convert them into files:

Convert to files?

Type [Y] [↵] to convert them to files, which will be stored in the root directory of specified drive, with the names FILE0000.CHK, FILE0001.CHK, etc. When DSKCHK has finished, go to this directory and check the contents of the files to see if they are usable. If they are, rename them and move them to the appropriate data directory. If they are not, delete them.

If the internal disk or memory card is badly corrupted, you may have to reformat it (using FDISK or FORMAT) and start again. If the problem persists, check the batteries.

EXAMPLES

To check the current disk, type:

diskchk [↵]

To check the memory card in drive B and correct any errors found, type:

diskchk b: /f [↵]

and type [Y] [↵] in reply to the following prompt:

Modify disk
Are you sure (Y/N)?

FIND Search files for a string

SYNTAX

FIND string wild (/S)(/N)(/C)(/P) Search files for a string
FIND /? Display help information.

OPTIONS

string The sequence of characters to search for. This string must not include spaces and should not be enclosed within quotation marks unless you want to search for them.

wild A file or directory name specifying the file(s) to search.

/S Search files in subdirectories.

/N List filenames only (not the contents)

/D Omit the path from the filename

/C Case-sensitive search (it is normally case-insensitive).

/P Pause at the end of each screenful of output and wait for the user to press any key.

NOTES

FIND searches each file specified by wild for the text specified by string, displaying the name of each file which contains the text, followed by the lines that include it, like this:

```
>>>>> Found match in FILE.EXT
The matching text
      1 file searched
```

If the string does not occur in a file, that file's name is not listed.

To create a file of matches, redirect output by using the > character.

EXAMPLES

To display all occurrences of the lowercase string 'memory' in the .ASM files in the current directory and its subdirectories, type:

```
find memory *.ASM /s/c [-]
```

To create a list of all files in the \DOCS directory that contain the text 'overdue', and store it in the file OVERDUE.LST, type:

```
find overdue \DOCS\*.*/n >OVERDUE.LST [-]
```

FREEDSK Display free disk space

SYNTAX

FREEDSK (drive) Display free disk space.
FREEDSK /? Display help information.

OPTIONS

drive The drive containing the disk to check. If omitted, the current drive is assumed.

NOTES

FREEDSK displays the amount of free space on the disk in the specified drive and sets **ERRORLEVEL** to the number of whole 4k segments available. If drive is invalid (ie not A, B or C), **ERRORLEVEL** is set to 255.

EXAMPLES

To display the free space on the current drive, type:

```
freedsk [-]
```

and you will see a message like this:

```
There are 30208 bytes free
```

To check whether there is room on drive A for a 32K file, you could include the following code in a batch file:

```
:INSERTCARD  
beep 5,5  
ask Insert card in drive A and press a key  
freedsk A:  
if errorlevel 8 goto COPYFILE  
echo NOT ENOUGH ROOM ON CARD  
goto INSERTCARD  
:COPYFILE  
copy file.dta a:
```

(This example uses the **BEEP** command and **ASK** command to prompt the user to insert a card, and the **IF** command to check **ERRORLEVEL** to see if there is enough space on it.)

FREEMEM Display free memory space

SYNTAX

FREEMEM Display free memory.

FREEMEM /? Display help information.

NOTES

FREEMEM gives the amount of free memory in the largest block and sets **ERRORLEVEL** to the number of whole 4k segments of RAM left.

EXAMPLES

To check the free memory, type:

```
freemem [-J]
```

and you will see a message like this:

```
There are 54976 bytes free
```

To check that there is 80K free memory before loading a program from a batch file, you could use the following:

```
@echo off  
freemem  
if errorlevel 10 goto RUN  
beep 5,5  
echo YOU NEED 80K MEMORY TO USE THIS PROGRAM  
goto EXIT  
:RUN  
program  
:EXIT
```

(This example uses the **IF** command to check **ERRORLEVEL** to see if there is enough free memory and the **BEEP** command to sound a warning if not.)

KSIM Simulate keypresses

SYNTAX

KSIM file	Simulate keys specified by the file.
KSIM /U	Un-install KSIM.
KSIM /?	Display help information.

OPTIONS

file A file name specifying the file containing the key codes. If it does not include an extension and there is no such file, an extension of .KCF is assumed.

NOTES

KSIM provides key presses to the operating system or applications. The key presses are specified by a file, which must have been prepared and compiled as described for the KSIMCOMP command.

KSIM can be used from a batch file, to automate processes that require keyboard input.

When invoked, KSIM loads as a TSR, claiming enough memory for itself and the given file. It then loads the file into memory and terminates. (At this stage, the KSIM program and file are no longer needed.)

Each time a key is requested (by the operating system or applications), KSIM reads the next character from its internal copy of the file and places it in the keyboard input buffer, exactly as if it had been typed. When KSIM has provided all the characters in the file, it de-installs itself, releasing all the memory it had claimed and returning to normal keyboard input.

If a key is pressed while KSIM is active, KSIM stops providing characters to allow user input instead. Once user input has ceased, KSIM will wait approximately 10 seconds and then continue providing characters from where it stopped in the file (which is stored in RAM).

If the user presses [CTRL][C], this will abort the currently executing command and KSIM will wait for further user input for approximately 10 seconds, then carry on.

If the user presses **[FN] B ([CTRL] [BREAK])** KSIM will de-install itself immediately, releasing the memory it claimed.

KSIM can simulate a very wide range of key presses, but cannot simulate:

[CTRL] [ALT] [DEL] Reboot (use the **REBOOT** command instead).

[LOCK] Display the lock status.

KSIM cannot simulate any keypresses which display or alter the keyboard locks, such as **[FN] [N]**, which toggles the **NUMLOCK** status.

If the KSIM file invokes a command (such as **PAUSE** or **ASK**) which clears the keyboard buffer before requesting a character, characters may be lost. KSIM will feed characters into such a command until one of the following events occurs:

1. It reaches the end of the KSIM file
2. It reads a 'delay' command from the file (such as **(1)**; see **KSIMCOMP**)

While KSIM is resident, it claims approximately 5000 bytes for itself, plus the size of the KSIM file. When it terminates (for whatever reason), it de-installs itself and releases this memory. (If any other TSRs have been installed since KSIM installed itself, you will have to remove these too to gain access to memory claimed by KSIM.)

EXAMPLES

To take keyboard input from the KSIM file **TASK2.KCF**, type:

```
ksim task2 [-]
```

(you do not need to supply the extension, as KSIM will assume the correct extension.)

See the **KSIMCOMP** command for details of creating KSIM files.

(KSIM provides similar but much more flexible facilities to redirecting standard input from a file.)

KSIMCOMP Compile text for KSIM

SYNTAX

KSIMCOMP wild1 (wild2) Compile file(s).

KSIMCOMP /? Display help information.

OPTIONS

wild1 is a file or directory name specifying the file(s) to compile, the source file(s). If an extension is not specified, .KCS will be assumed.

wild2 is a file or directory name specifying the file(s) to create, the object file(s). If an extension is not specified, .KCF will be assumed. If wild2 is not specified, wild1 will be used but with the extension .KCF.

NOTES

KSIMCOMP compiles ASCII text source files describing the key presses required, into object files which can be used by **KSIM**.

Creating a source file

A **KSIM** source file is an ordinary ASCII text file, used to specify the keypresses. Most alphanumeric characters and symbols stand for themselves, with the following exceptions:

[] is ignored (use it to help lay out the source file to increase legibility)

[TAB] is ignored (use it to help lay out the source file)

; is ignored, together with any characters after it, up to the next **[]** (use it to include comments in the source file)

{ and **}** are used to specify special keys, as follows. Note that some of these represent a combination of keys. For example, **[HOME]** is equivalent to pressing the **[HOME]** key, **[FN] [←]**. Many of these reserved words produce extended ASCII codes, ie 00h followed by the appropriate ASCII code.

Control keys

(CR)	(LF)	(CRLF)	(ESC)	(BS)
(TAB)	(BTAB)	(INS)	(DEL)	

Note that you should use (CR) to represent the [↵] key.

Function keys

(F1)	(F2)	(F3)	(F4)	(F5)
(F6)	(F7)	(F8)	(F9)	(F10)

Shift function keys

(SF1)	(SF2)	(SF3)	(SF4)	(SF5)
(SF6)	(SF7)	(SF8)	(SF9)	(SF10)

Control function keys

(CF1)	(CF2)	(CF3)	(CF4)	(CF5)
(CF6)	(CF7)	(CF8)	(CF9)	(CF10)

Cursor movement

(HOME)	(END)	(PGUP)	(PGDN)
(LFT)	(RGT)	(UP)	(DN)

Control cursor keys

(CHOME)	(CEND)	(CPGUP)
(CPGDN)	(CLFT)	(CRGT)

Internal applications

(APP/A)	Address book
(APP/C)	Calculator
(APP/D)	Diary
(APP/E)	Editor
(APP/S)	Setup
(APP/W)	Worksheet
(APP/Z)	Applications menu

You can use these sequences to hot-key into applications from DOS or DOS applications, but they are ignored if you are already in a Pocket PC application.

Miscellaneous

- {()** The { character
- {)}** The } character
- ;** The ; character

Comments

A comment in the source file is entered using a semi-colon ';'. All spaces and tabs before the semi-colon, the semi-colon itself and the characters after the semi-colon until the end of the line are ignored.

For example:

```
{f1}flconfig.sys(cr) ; load config file
```

The tab characters after the (cr) form part of the comment and are ignored.

Control

(STOP) Abort execution of the control file

(START) Restart the control file from the beginning.

(n) Delay execution for n seconds. n may be between 1 and 65535 (18 hours, 12 minutes, 15 seconds).

ASCII characters

{#n} ASCII character n, where n is in the range 0 to 255.
For example: **{#1}** is ASCII 01 and **{#32}** is a space.

{^c} Control character c, where c is in the range A to Z.
For example: **{^A}** is **[CTRL][A]** (identical to **{#1}**)
and **{^z}** is **[CTRL][Z]**.

ERROR MESSAGES

If the compiler encounters any errors in the source file, it will display the line, line number and file, in a message like this:

```
10: {app/a}{f1}{csr}
Invalid sequence: EDIT.KCS
      0 files compiled.
```

In this example, there is an invalid sequence ((csr)) on line 10 of the file EDIT.KCS.

If it finds any errors, the compiler stops compiling that source file and proceeds with the next source file.

EXAMPLES

To compile KEYS.KCS to KEYS.KCF, type:

```
ksimcomp keys.kcs [-J]
```

or:

```
ksimcomp keys [-J]
```

To compile all KCS files in the subdirectory KSOURCE to KCF files with the same name, type:

```
ksimcomp ksource\* [-J]
```

To restore all current diary alarms after the Pocket PC has been rebooted, create the following .KCS file:

```
app/d(cr)                ; Enter the diary.
{f1}(cr)(dn)(cr)c:\system\diary(cr) ; load diary.
{f1}(cr)(dn)(cr)c:\system\diary(cr) ; save alarms.
(esc)                    ; exit the diary
```

Assuming this file is called DIARY.KCS, compile it using the command:

```
ksimcomp diary [-J]
```

and include the following line in the AUTOEXEC.BAT file on C:\

```
ksim diary
```

MODE Configure system settings

SYNTAX

MODE switches Configure settings.

MODE /? Display help information.

OPTIONS

switches One or more switches, each of which consists of a / plus a sequence of keystrokes which would be valid when using the SETUP menu, with English as the current language. The switches may be used in any combination, in any order (with the exception of /RI; see below).

NOTES

Use MODE to set SETUP options from a batch file or the DOS command line, using the same sequence of keystrokes as you would use with the SETUP menu. To specify a toggle, use 0 for 'off', 1 for 'on'.

Settings which are not mentioned on the command line are left unchanged, so you can, if you wish, use the utility a number of times to change the settings.

The switches are as follows. For more details, see the SETUP facility in the Owner's Manual.

Display switches

- /DI[(N)(S)(T)] internal display mode (normal, static, tracked)
- /DE[(N)(S)(T)] external display mode (normal, static, tracked)
- /DR[(N)(T)(K)(B)] display refresh mode (normal, timed, keys, both)
- /DS[(N)(F)] display speed (normal, fast)

Sound switches

- /SK[(0)(1)] keyclick (off/on)

/SA[(0)(1)] alarm sound (off/on)

/SB[(0)(1)] buzzer (off/on)

Note that there is no mute toggle switch; you must set each sound switch separately.

Applications switches

/AC[(0)(1)] clipboard save (off/on)

/AU[(0)(1)] undelete save (off/on)

/AL[(E)(F)(D)] language (English, French, German)

/AK[(E)(F)(D)] keyboard (English, French, German)

For more details, see the SETUP facility in your Owner's Manual.

Printer switches

/PD[(P)(F)(S)] printer destination (parallel, file, serial)
Remember to specify a name if printing to a file.

/PLn page length n (0 or 41 to 99)

/PScodes send codes to printer, where codes is up to 128 characters. To specify an unprintable character, type \ followed by three digits specifying the ASCII code in decimal (eg \013 for CR).

/PE[(0)(1)(2)] end of line (CR, CR-LF, CR-LF-LF)

/PMLn page left margin n

/PMTn page top margin n

/PMBn page bottom margin n

RS-232 port switches

/RbN Baud rate n
(110, 150, 300, 600, 1200, 2400, 4800, 9600)

/RP[(N)(E)(O)] parity (none, even, odd)

/RD[(7)(8)] data bits (7/8)

/RS[(1)(2)] stop bits (1/2)

/RI initialise port

Note that **/RI** should be used **AFTER** using any of the other RS-232 switches, to bring the changes into effect.

If there is an error when using **/RI**, an error message will be displayed but no key is expected.

EXAMPLES

To set the external display mode to tracked, enable keyclicks, and disable application undelete autosave, you could type three separate commands:

```
mode /det [-]
```

```
mode /sk1 [-]
```

```
mode /au0 [-]
```

Or, you could type all the switches in a single command:

```
mode /det/sk1/au0 [-]
```

To configure the RS-232 port to 9600 Baud, even parity, 7 data bits and 2 stop bits, you could type:

```
mode /rb9600/rpe/rd7/rs2/r1 [-]
```

Note that **/RI** is added as the last switch, to bring the changes into effect.

To send the sequence "Esc E HEADING Esc H CR LF" to the printer, you could type:

```
mode /ps\027EHEADING\027H\013\010 [-]
```

(on a printer that obeys standard Epson control codes, this would print **HEADING** in emphasized mode, and then start a new line).

PASSWORD

Password protection

SYNTAX

PASSWORD Prompt for password.
PASSWORD /S Set password.
PASSWORD /? Display help information.

NOTES

Use this command to control access to the machine, by defining a password and then prompting the user for it.

If you type PASSWORD [-] when there isn't a password set, help will be displayed as if you had typed PASSWORD /? [-].

Setting the password

To set a password, type:

password /s [-]

and the following prompt will be displayed:

New 'key' :

The key is in the form of a symbol. Type the password and press [-]. A password is between one and eight characters long, consisting of letters and numbers. Capital and small letters are equivalent.

Choose a password which is easy to remember but difficult to guess, and make sure you do remember it! (The password is echoed as # characters to help preserve security.)

The prompt will change to the following, for you to confirm the password:

Re-enter 'key' :

type the password again and press [-] and the following will be displayed to confirm the password has been set correctly:

Password set

If the two attempts don't match, the message 'Failed' will be displayed and the password won't be set.

Using password-protection

Once you have set a password, to restrict access to the data stored on the internal disk, execute the **PASSWORD** command. This will display the following:

? 'key' :

Now, to use the machine, the user must know and enter the correct password. They cannot 'break out' of this by turning off and on or by removing the Utilities Card. To prevent them breaking out by rebooting, include a **PASSWORD** command at the start of the **C:\AUTOEXEC.BAT** file, and at the start of the **AUTOEXEC.BAT** file on each memory card.

A user can break out of **PASSWORD** by performing a cold reboot, but as this will also erase all data from the machine's internal disk, data security will still be maintained. (For more details, see "Maintaining Security".)

If the user enters the correct password, the **PASSWORD** command terminates and they can continue using the machine as normal.

If they type the wrong password, the number of bad attempts is displayed at the start of the line, like this:

1 bad attempt. ? 'key' :

The user is allowed 10 bad attempts, after which the machine will beep & power down. Now, each time the user powers up, **PASSWORD** will prompt for the password, and beep and power down again if it is incorrect.

Changing the password

To change the password, type:

password /s [-]

and the following will be displayed:

Old 'key' :

Type the current password and press **[-]**. The following will be displayed:

New 'key' :

Type the new password and press [J] and the following prompt will be displayed:

Re-enter 'key' :

Type the password again to confirm it and press [J]. The following message will be displayed to show that the new password has been set correctly:

Password set

Cancelling the password

If you have forgotten the password, or simply want to remove password protection, you can cancel it as follows.

When PASSWORD is displaying the following prompt:

? 'key' :

Place the Utilities Card in drive A and type [ALT][P]. The following message will be displayed to confirm the deletion:

Password erased

Maintaining security

If security is important to you, observe the following suggestions to obtain maximum benefits from PASSWORD:

- 1 Choose a password which is difficult to guess. Use all 8 characters and mix numbers and letters. Don't use anything obvious like your own name, telephone or car registration number!
- 2 Keep the password secret.
- 3 Change the password at regular intervals.
- 4 Include a PASSWORD command at the start of the AUTOEXEC.BAT file in the root directory of drive C and on any memory cards, to prevent a user 'booting around' password protection.
- 5 Restrict access to the Utilities Card, to stop someone else cancelling the password as described above.

EXAMPLES

Assuming you have set a password, you can use it in two basic ways:

- from DOS
- from a batch file

For example, to protect your files 'temporarily', from DOS:

- type **PASSWORD [-]** to display the 'key' prompt
- turn off

When you next turn on, the 'key' prompt will be displayed. Type your password and operation will continue as normal. (If you want to protect your machine the next time you turn off, repeat the procedure.)

To simplify protecting your files, create the following batch file:

```
@echo off  
off  
password
```

Call it O.BAT and put it in a directory on your search path. Then, whenever you want to turn off, type **O [-]** from DOS. This will turn the machine off and prompt for the password when it is turned on.

REBOOT Re-boot the Pocket PC

SYNTAX

REBOOT /C Reboot COLD.
REBOOT /W Reboot WARM.
REBOOT /? Display help information.

NOTES

Rebooting COLD is equivalent to pressing the cold boot reset switch. It displays the cold boot text and asks the user for the keyboard, then sets the date to 1/1/1980, the time to midnight and destroys the contents of the internal RAM disk. Use this command with caution!

Rebooting WARM is equivalent to pressing [CTRL][ALT][DEL] or the reset switch.

EXAMPLES

REBOOT will usually be used in a batch file. For example, the following batch file installs a different version of CONFIG.SYS and AUTOEXEC.BAT to suit an application, then reboots automatically to bring the changes into effect:

```
cd \  
copy ansiboot.sys config.sys  
copy applic.bat autoexec.bat  
reboot /w
```

SORT

Sort text file

SYNTAX

SORT (wild1 (wild2)) (/R)(/U) Sort text file(s).

SORT /? Display help information.

OPTIONS

wild1 A file or directory name specifying the file(s) to sort, the input file(s). If omitted, text is taken from the standard input.

wild2 A file or directory name specifying the file(s) to create, the output file(s). If omitted, the sorted text is output to the standard output (displayed).

/R Sort in reverse order (ie ASCII code 255 to ASCII code 0).

/U If there are identical lines in the input, omit the duplicates from the output.

NOTES

SORT performs an alphanumeric sort of each line from the input file(s), writing the result to the corresponding output file(s). A line is considered to end at a CR (ASCII 13), but if it is followed by a LF (ASCII 10), that it considered part of the line.

Lines are normally sorted in ascending ASCII code order, except that case is not significant.

If **wild2** specifies a single file or a device, all the input data is combined and then sorted as a single entity.

If **wild1** is the same as **wild2**, the output file(s) will replace the input file(s).

EXAMPLES

To sort all files in the current directory, writing the sorted versions back using the same names, type:

```
sort *. * *. * [-]
```

To sort the NAMES.TXT file in reverse order, omitting duplicates, and display the result, type:

```
sort names.txt /r/u [-]
```

To combine all TXT files in the \DOCS directory, sort and then print the result, type:

```
sort \docs\*.txt prn [-]
```

Note that the files are combined before sorting, because the output is a single entity (in this case, a device). If you want to sort each file separately, and then print the results, you must use a sequence of commands like this:

```
sort *.txt *.srt [-]  
copy file1.srt prn [-]  
copy file2.srt prn [-]  
...  
del *.srt [-]
```

assuming that the source files were file1.txt, file2.txt, etc.

SPOOL Background printing

SYNTAX

- SPOOL buffer** Install background printing.
SPOOL /U Un-install background printing.
SPOOL /? Display help information.

OPTIONS

- buffer** A number in the range 1 to 32767, specifying the print buffer size, in characters (bytes).

NOTES

To install background printing, type **SPOOL buffer [-J]**. This loads **SPOOL** into memory (as a TSR) and creates a print buffer of the specified size.

Once **SPOOL** has been installed, anything printed to **PRN** will be placed in the buffer and printed in background. This allows you to continue working with the machine sooner after starting a print operation.

SPOOL uses approximately 900 bytes of main memory for itself, plus the buffer size you specified. The larger you make this buffer, the more advantage you will gain, but at the expense of main memory.

SPOOL also allows you to print graphics mode screens, by pressing **[PRTSC] (Fn P)**.

To disable background printing and graphics mode screen dumps, remove **SPOOL** from memory by typing **SPOOL /U [-J]**. This will release the memory claimed by **SPOOL**. (If you have loaded another TSR after **SPOOL**, you must unload this too to gain access to this memory.)

(**SPOOL** works by tapping into the system between **PRN** and the hardware and grabbing the timer interrupt.)

EXAMPLES

To activate SPOOL with a buffer of 5000 characters:

```
spool 5000 [-]
```

To remove SPOOL from memory:

```
spool /u [-]
```

TOD Display date and time

SYNTAX

TOD Display date and time.

TOD /? Display help information.

NOTES

TOD displays the day, date, and time and sets ERRORLEVEL to the current language. On a machine supporting English, French and German, 0 is English, 1 is French, 2 is German.

EXAMPLES

TOD might display the following, with English as the current language:

```
Thu 21 Sep 1989 10:42:16
```

You might also use TOD to check the current language, from a batch file. For example, the following fragment checks the current language and displays the help text for that language.

```
tod >nul
if ERRORLEVEL 2 goto GERMAN
if ERRORLEVEL 1 goto FRENCH
type HELP.ENG
goto CARRYON
:FRENCH
type HELP.FRE
goto CARRYON
:GERMAN
type HELP.GER
goto CARRYON
:CARRYON
...
```

Note that the output from TOD is redirected to the NUL device, since we don't want to display the time or date. (The NUL device simply swallows any output sent to it.)

UPDATE **Update the internal software**

Syntax

UPDATE (/u) Installs any relevant software update.

Options

UPDATE Install **UPDATE**

UPDATE /u Un-install **UPDATE**.

Note that there is no **/?** help option.

Notes

The **UPDATE** program is a method of improving the internal software. It checks the version number of the internal software and installs later revisions of certain aspects of the software, dependent on the exact version present.

Once **UPDATE** is loaded, it will stay present in the Pocket PC until the next system reset, cold or warm boot. To ensure it is loaded every time, put it in your **AUTOEXEC.BAT** file, preferably at the beginning ahead of other **TSR** (terminate and stay resident) programs.

If you have more than one version of **UPDATE** (from another card for example), only use the most recent, as shown by the file date.

UPDATE returns only four messages to show whether it has been loaded or uninstalled successfully or not:

UPDATE+ OK Installed successfully

UPDATE- OK Un-installed successfully

UPDATE+ FAIL Cannot be installed (probably because other **TSR** programs are present).

UPDATE- FAIL Cannot be un-installed (probably because other **TSR** programs were installed on top.)

XCOPY **Copy/move files/subdirectories**

SYNTAX

XCOPY wild1 (wild2) (/S)(/M)(/O)(/A)(/C)(/B)(/R)(/P)

Copy/move files and subdirectories.

XCOPY /? Display help information.

OPTIONS

- wild1** A file or directory name specifying the source (files) to copy.
- wild2** A file or directory name specifying the destination to copy to. If omitted, the current directory is assumed as the destination.
- /S** Copy files in the source's subdirectories too.
- /M** Move the file(s) (ie delete the originals **AFTER** the copy).
- /O** Overwrite files that already exist on the destination without asking the user for permission.
- /A** Only copy files which have the archive bit set. Do not change the archive bit.
- /C** Only copy files which have the archive bit set. Clear the archive bit on the source file after copying.
- /B** Backup up the files, ie copy them into a single file (BACKUP.DAT) in the root directory of the destination.
- /R** Restore files from a backup, in their original format.
- /P** Pause after each screenful and wait for the user to press a key.

NOTES

XCOPY is an enhanced form of the COPY command, which is particularly suitable for creating and restoring backups. It can be used to copy files and subdirectories, copy onto multiple disks, and select files that have been changed since last copied.

If a source file already exists on the destination drive and you have not used the /O (overwrite) switch, the following message is displayed:

File <filename> exists, overwrite (Y/N) ?

Type [Y] [-] to overwrite the file, [N] [-] to not copy/move this file, [ESC] to abort, or [CTRL] [Y] to overwrite this file and any other existing files, without further prompting.

If the destination drive runs out of space, the following message is displayed:

Insert next disk & press any key

To continue copying onto another disk, insert the disk in the destination drive and press any key. To abandon copying, press [ESC] or [CTRL] [C].

As you can see, XCOPY is a powerful command with a number of options, which may seem confusing initially. The following notes may help to point out some of their uses.

Subdirectories

When you use the /S switch, XCOPY copies all the files specified by wild1 from the source directory and its subdirectories. For example:

```
xcopy c:\master\*.doc a: /s [-]
```

will copy all files with the extension DOC, from the source directory (C:\MASTER) and its subdirectories.

XCOPY will create any subdirectories that it requires on the destination, rooted in the destination directory. For example, if the current directory is DATA and has subdirectories ADATA and BDATA, the following command:

```
xcopy *.* a:\backup /s [-J]
```

will copy files from C:\DATA to A:\BACKUP, create A:\BACKUP\ADATA and A:\BACKUP\BDATA, then copy files from C:\DATA\ADATA to A:\BACKUP\ADATA, and from C:\DATA\BDATA to A:\BACKUP\BDATA.

Before:

```
C:\DATA\ADATA\files...  
BDATA\files...
```

```
A:\BACKUP
```

After:

```
C:\DATA\ADATA\files...  
BDATA\files...
```

```
A:\BACKUP\ADATA\files...  
BDATA\files...
```

Backup and restore

When you use the /B switch, this creates a single file, BACKUP.DAT, in the root directory of the destination drive, which contains all the source files plus their names. When you use the /R (restore) switch, this extracts files from the backup file, complete with their names.

If you made the backup without the /S switch, the names are simply the filenames. However, if you made the backup with the /S switch, files from subdirectories will have names which include the path from the source directory. For example, if the backup was made using the following command:

```
xcopy c:\data\*.* a: /s/b [-]
```

and the DATA directory has subdirectories ADATA and BDATA, the names stored in the backup will be FILE.EXT (from C:\DATA), ADATA\FILE.EXT (from C:\DATA\ADATA) and BDATA\FILE.EXT (from C:\DATA\BDATA).

When you restore from this backup, you must bear this naming convention in mind, for the source specification and for the destination.

For example, to restore C:\DATA\BDATA\FILE.EXT from the backup in drive A, you must specify the source as A:BDATA\FILE.EXT; to restore to the C:\DATA\BDATA directory, you must specify the destination as C:\DATA, like this:

```
xcopy a:bdata\file.ext c:\data /r [-]
```

The archive bit

When creating a backup, you can use the /A or /C switches to copy only those files whose archive bits are set. The archive bit is set when you create or change a file, and can be cleared by using XCOPY with the /C switch.

So, for example, by using the /C switch each time you copy the files, you can save time and disk space by copying only those files which have changed since last copied using XCOPY.

Note that the archive bit is not cleared by using XCOPY with other switches, or by using the COPY command.

EXAMPLES

To copy all files in the current directory with the extension ASM, to drive A, type:

```
xcopy *.asm a: [-]
```

To copy all DOC files on drive C (in all subdirectories) which have been changed since last copied, to drive B but with the extension BAK, type:

```
xcopy c:\*.doc a:\*.bak /c/s [-]
```

To backup all files in the current directory with the extension TXT, to drive A, type:

```
xcopy *.txt a: /b [-]
```

To retrieve all files which have the name DATA (and any extension), from a backup in drive A, type:

```
xcopy a:data.* /r [-]
```

The files will be retrieved to the current directory, with their original names.

To move all files in the current directory to the KEEP directory on drive B, overwriting any existing files without prompting, type:

```
xcopy *.* b:\keep /m/o [-]
```

XDIR List files in subdirectories

SYNTAX

XDIR (wild) (/A)(/D)(/N)(/Q)(/W)(/P)

List files in subdirectories.

XDIR /? Display help information.

OPTIONS

- wild A file or directory name specifying the source (files) to list.
 If it is omitted, the current directory is assumed.
- /A List only those files with the archive bit set.
- /D List only those files in the specified directory.
- /N List the filenames without the drive and path.
- /Q Don't include the number of files and bytes used at the
 end of the directory.
- /W Don't list the file sizes or time/date stamps.
- /P Pause after each screenful and wait for the user to press
 a key.

NOTES

XDIR is an extended version of DIR, which provides a directory listing for the specified directory and its subdirectories. The full listing includes the path, filename, size, date and time. After the directory listing, the number of files found and their total size is printed.

EXAMPLES

To display the full path of each ASM file in the current directory and its subdirectories, but omit the time and date stamps, type:

```
xdir *.asm /w [-]
```

To list the TXT files in the current directory only, type:

```
xdir *.txt /d [-]
```

APPENDIX A: SYNTAX SUMMARY

ANSI.SYS is not a command; it is a device driver, used by including the following line in the CONFIG.SYS file and rebooting:

```
DEVICE=C:\(directory)ANSI.SYS
```

See Appendix B for details of the facilities it provides.

The other facilities are all commands, with arguments as follows:

Command	Arguments
ASK	(prompt) (,keylist)
ATTRIB	(wild) [(+)(-)](R)(A)(S)(H)) (/P)(/?)
BEEP	tone duration (/)
CMDEDIT	[(/U)(/?)]
DIF	wild1 (wild2) [(/1/2/3/4/5/6/7/8/9)(/?)]
DSKCHK	(drive) [(/F/?)]
FIND	string wild (/S/N/C/P/?)
FREEDSK	(drive) (/?)
FREEMEM	(/?)
KSIM	file [(/u)(/?)]
KSIMCOMP	wild1 (wild2) (/?)
MODE	(switches) (/?)
PASSWORD	[(/S)(/?)]
REBOOT	[(/C)(/W)(/?)]
SORT	(wild1 (wild2)) (/U)(/R)(/?)
SPOOL	[(buffer)(/U)(/?)]
TOD	(/?)
UPDATE	(/u)
XCOPY	wild1 (wild2) (/S/M/O/A/C/B/R/P/?)
XDIR	(wild) (/A/D/N/Q/W/P/?)

APPENDIX B: ANSI.SYS ESCAPE SEQUENCES

The ANSI.SYS device driver is a full implementation of the PC-standard ANSI.SYS escape sequences, obeying them as appropriate to the display hardware. To use it, add the following line to the C:\CONFIG.SYS file:

DEVICE=C:\(path)ANSI.SYS

and reboot the machine.

The escape sequences will be summarised here for your convenience. For more details, refer to the ANSI specification or any standard work on PC programming or terminal display standards.

Note that within the remainder of this appendix, Esc is the Escape character (ASCII 27), I is ASCII 91, uppercase and lowercase are both explicit, spaces are used for clarity, and descriptions are enclosed within angle brackets, <>, like this <n>:

Esc [? 7 h · Enable word wrap.

Esc [? 7 l Disable word wrap.

Esc | H Move cursor to home position (top left).

Esc | <row><col> H
OR

Esc | <row><col> f Move cursor to specified co-ordinates.

Esc | <row> A Move cursor up the specified number of rows.

Esc | <row> B Move cursor down the specified number of rows.

Esc | <col> C Move cursor forward the specified number of columns.

Esc | <col> D Move cursor back the specified number of columns.

Esc | s Record the current cursor position.

Esc | u Move cursor to the recorded position.

Esc [2 J Clear screen and move cursor to home position (top left).

Esc [K Erase from cursor to end of line.

Esc [<key> ; <sequence> p Redefine the key whose key code is <key> to issue the character or characters specified by <sequence>.

To redefine an ordinary typing key (letter/number/symbol), <key> is its ASCII code, as a decimal number. For example, to redefine [A], <key> is 65.

To redefine other keys, <key> is an extended ASCII code: 0 followed by ; followed by a code identifying the key. For example, to redefine [F1], <key> is 0;59.

<sequence> can be any combination of ASCII codes, extended ASCII codes and strings enclosed within quotation marks, separated by semi-colons.

For example, to define [A] as [B], use:

Esc [65 ; 66 p

To define [A] as [F1], use:

Esc [65 ; 0 ; 59 p

To define [A] as DIR A: followed by [↵], use:

Esc [65 ; "DIR A:" ; 13 p

The following escape sequences are recognised, but have no effect, due to the hardware design:

Esc [<n> ; <n> ; ... m Set video attributes:
<N>

0 all attributes off

1 high intensity

4 underline

5 blink

7 inverse video

8 concealed

Esc | = <n> h

OR

Esc | = <n> l Set video mode:
<n>

- 0 40x25 b&w
- 1 40x25 colour
- 2 80x25 b&w
- 3 80x25 colour
- 4 320x200 colour graphics
- 5 320x200 b&w graphics
- 6 640x400 high resolution graphics

APPENDIX C: ERROR MESSAGES

Note that within this appendix, a description of a text item is enclosed within angle brackets, <>. The descriptions used are as follows:

- <n> is a number, such as 12
- <switch> is a command option switch, such as /A
- <file> is a filename, such as MEMO.BAK
- <text> is another piece of text

Access denied

You have tried to access a file in a way that its attributes do not allow. For example, you have tried to delete or write to a file which is read-only. (ATTRIB, DIF, FIND, KSIMCOMP, SORT, XCOPY, XDIR.). This message will also appear if an attempt to use DSKCHK on a PC is made as DSKCHK can damage floppy or hard disks.

Access to PERMDATA.DAT failed

The PERMDATA.DAT file, stored in the C:\SYSTEM directory, is either read-only or corrupted. Change the file to read-write using ATTRIB and try the MODE command again. If this still fails, delete this file and reconfigure the system using mode or SETUP.

Bad command or program not found

You have mistyped a command, or tried to use one which is not on your current search path. (Any command.)

Cannot close file

KSIM has failed because it was unable to close the keyboard file.

Cannot create file: <file>

You have tried to copy to an invalid filename or a read-only file, or there is insufficient room on the specified drive. (XCOPY.)

Cannot open <file>

Cannot open file

The input file that you have specified does not exist. Check your typing and that the file is in the current (or specified) directory. (DIF, KSIM, KSIMCOMP.)

Cannot uninstall Ksim

You have tried to un-install KSIM after installing another TSR. You must un-install the other TSR to release the memory.

Create error: <file>

KSIMCOMP cannot create the KSIM file specified, as it already exists and is read-only, or there is insufficient room on the specified disk.

Convert to files (Y/N)?

DSKCHK has found lost clusters and is asking if you want to convert them to files so that you can use the data in them.

Disks out of sequence, continue?

While using XCOPY /R to restore files from backup, you have inserted a disk which is not the next one created by XCOPY. Insert the correct disk and press any key to continue, or press [ESC] or [CTRL][C] to abort.

DOS file error

KSIM has encountered an error during access to a DOS file. The disk or file may be corrupt; use DSKCHK to check.

DOS memory error

KSIM has encountered an error when trying to de-install itself.

Drive read error

The specified drive is not usable. Reformat the disk. (DSKCHK.)

Drive write error

You have asked DSKCHK to convert lost clusters to files, but DSKCHK cannot write to the disk because it is write-protected, a read-only device, or has not enough room.

<n> errors found

DSKCHK has found <n> errors on the disk it is checking.

<file> exists, overwrite (Y/N)?

You have used XCOPY to copy or move files, and the specified file already exists on the destination drive. Type [Y] [-] to replace it, [N] [-] to not copy/move this file, [ESC] to abort, or [CTRL][Y] to overwrite this file and any other existing files, without further prompting.

Failed

The password has not been set or changed. (PASSWORD.)

Failed, accessing <file>

XCOPY has failed while copying the specified file.

File of zero length : <file>

You have asked KSIMCOMP to compile an empty file, or KSIM to load an empty file.

File too big

The specified file is too large to compile or use. (KSIMCOMP, KSIM.)

Files too different

The files that you have asked DIF to compare are too different to compare properly. (You have probably specified the wrong files.)

<file> has an invalid cluster

The specified file is corrupt. Run DSKCHK with /F option to correct the error and check that the file is still usable. If you have a recent backup, delete the file and use that instead. (DSKCHK.)

<file> has an invalid file size

The size stored by the system for the specified file is invalid. Run DSKCHK with /F option to correct the error and check that the file is still usable. If you have a recent backup, delete the file and use that instead. (DSKCHK.)

<file> has been truncated

The cluster size stored by the system for the specified file is invalid. Run DSKCHK with /F option to correct the error and check that the file is still usable. If you have a recent backup, delete the file and use that instead. (DSKCHK.)

Illegal buffer size

You have tried to install SPOOL with a buffer size which is not in the range 1 to 32767. Try again, with a valid size.

Initialization of serial port failed

The serial port has not initialised correctly, so the changes you have made to the RS-232 port settings using MODE will be ignored. Check the communications unit and try again.

Invalid drive

You have specified a drive other than A:, B:, or C: with FREEDSK or DSKCHK.

Invalid sequence: <text>

You have included an invalid key sequence within the KSIM source file specified. (Refer to the section on KSIMCOMP for details of the valid sequences.)

Invalid setup code: <text>

You have use an invalid ASCII code with the MODE /PS switch. A valid setup code consists of \ followed by a 3-digit decimal number in the range 000 to 255. (Refer to the section on MODE for more details.)

<file> is cross linked

The cluster pointers stored by the system for the specified file are invalid. Run DSKCHK with /F option to correct the error and check that the file is still usable. If you have a recent backup, delete the file and use that instead. (DSKCHK.)

Ksim already installed

You have tried to install KSIM when it is already installed.

Ksim not installed

You have tried to un-install KSIM when it is not installed.

<n> lost clusters in <m> chains

The disk that you are checking has some lost data. To recover this data, run DSKCHK with the /F option, and DSKCHK will recover it into <m> files, called \FILE0000.CHK, \FILE0001.CHK, etc.

Memory Full

There is not enough room in memory to load KSIM and the KSIM file.

No files found

You have specified an input file for FIND, but no matching files have been found. Check your typing and that you are using the right directory.

<file> not being restored

The specified file is not being restored from backup because it does not match the source specification you supplied. (XCOPY.)

Not enough memory to sort file

The SORT command does not have enough memory to sort the file. Release some more memory (eg by un-installing any TSRs such as CMDEDIT and SPOOL).

Not enough space in root directory

You have asked DSKCHK to convert lost clusters to files, but there is not enough room in the root directory of the specified disk. Create some space by deleting or moving files from the root directory and try again.

Out of memory

DSKCHK requires more memory to operate. To use it, release some more memory, by un-installing any TSRs such as CMDEDIT and SPOOL, and try again.

Path not found

You have included a path (ie drive and/or directories) in a command, but the path does not exist. Check your typing and the disk directory structure. (ATTRIB, DIF, FIND, KSIMCOMP, SORT, XCOPY, XDIR.)

Read error

The command cannot read the specified input file. The file is probably corrupted; use DSKCHK to check the disk. (DIF, KSIM, KSIMCOMP.)

Spool not installed

You have tried to un-install SPOOL when it is not installed.

Switch not understood: <switch>

You have typed an invalid switch. For details of the valid switches, see the appropriate command description in this guide, or use the /? switch. (All commands.)

Undefined DOS error

You should not see this message under normal circumstances. If you do, there may be an interaction between resident TSRs. If the message occurs frequently, contact your dealer.

Value out of legal range: <n>

You have supplied a value with a MODE switch which is not one of those allowed. Refer to the section on the MODE command for details.

Write error: <file>

The command has encountered an error when writing its output; the output file will be incomplete. The most likely cause is insufficient disk space; check the disk and make more space if necessary, then try again. If space is not the problem, the disk may be corrupt; use DSKCHK to check. (DIF, KSIMCOMP.)

Wrong number of arguments

You have typed a command with too few or too many arguments. Use the /? switch to display the command syntax or refer to the section on the command you're using for details. (All commands.)



