

FILEMANAGER

AJM SOFTWARE

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INTRODUCTION

Filemanager is a very versatile disk and file utility. It performs the following functions:

- 1) Edit a disk or tape's directory
- 2) Copy files (one at a time or in groups)
- 3) Delete files -(also one at a time or in groups)
- 4) Print files (again one at a time or in groups)
- 5) Backup disks or tapes
- 6) Krunch disks or tapes
- 7) Copy Blocks
- 8) Edit blocks
- 9) Format disks or tapes (not blank audio tapes)
- 10) Initialize a disk or tape

Filemanager is not copy protected. It is recommended that you use Filemanager's Backup function to create 2 copies of the distribution disk and then put the distribution disk and one copy away in a safe place. However, the program is copyrighted and it is illegal to give or sell copies of Filemanager to your friends. Remember, the ADAM is an orphaned computer. New programs for it are becoming rare. Don't discourage the last few programmers producing material for the ADAM by stealing their software.

Finally, if you like Filemanager, tell your friends. If there are parts of Filemanager that you don't like or if you need help using Filemanager, contact me:

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USING FILEMANAGER

To start Filemanager, simply insert the distribution disk and pull the computer reset switch. The Filemanager title screen will appear almost immediately and will remain on the screen while the program is loading. Once Filemanager has loaded and the main menu is displayed, remove the Filemanager disk, replacing it with the EOS disk that you want to work with.

Filemanager is a menu driven program. Smartkeys and the dedicated function keys are used to select among the options offered on the various screens. In general, pressing RETURN will advance you to the next stage of the program while ESCAPE will return you to the previous screen. Pressing CONTROL-C will return you to the main menu.

In order to reduce transfer times, all functions that move data from one drive to another first read as much of the source as possible into a copy buffer before writing to the target media. The size of the copy buffer is limited only by the amount of available memory. Filemanager makes full use of any expansion memory cards such as the standard 64K memory expanders or the larger expansions cards sold by Orphanware or IHS. The opening screen of Filemanager shows the maximum size of the copy buffer.

Because Filemanager uses expansion ram as a copy buffer, any information stored in a ram disk may be destroyed when one of the copy functions of Filemanager is used, Filemanager lets you disable the use of expansion memory so that you may protect the contents of your ram disk.

MAIN MENU

I - File Functions

- select if you want to edit the disk's directory or if you want to copy, delete or print files.
- make sure that the source drive (IV) is set to the set to the-drive that you want to work with.
- Pressing RETURN will also put you into file function mode.

II - Disk Functions

- select if you want to backup, krunch, format or initialize a disk or if you want to copy or edit blocks on the disk.

III - Change Default Setup

- select if you want to change Filemanager's screen colors or default source and destination drives.

IV - Select Expansion Ram

- this key allows you to enable or disable the use of expansion ram as part of the copy buffer.
- Use All Expansion Ram gives the largest copy buffer and so maximizes copy speed, particularly for single drive copying.
- Use Bank 1 of Expansion Ram limits Filemanager's copy buffer to the first (or only) 64K of expansion ram. In other words, Filemanager treats large (256K or 512K) memory expansion cards as if they were the standard 64K size. The rest of expansion ram is reserved for ram disk programs such as Digital Express's MegaDisk.
- Ignore Expansion Ram lets you protect the contents of a Ram Disk but slows down the copying process.

V - Source Drive

- press Smartkey IV to select the source drive for file functions.
- You should use the Change Default Settings option to permanently set this to the drive that you most frequently use.
- When the source drive is set, press Smartkey I or RETURN to start the file functions.
- There is no need to set the source drive for disk functions. All disk functions allow you to set both the source and destination drives.

FILE FUNCTIONS

After the file functions option is selected from the main menu (by pressing Smartkey I or RETURN), the screen will clear and a list of the files on the EOS disk will be displayed. If the disk in the source drive is a non-EOS disk (CP/M or Supergame), Filemanager will display an error message. If this occurs, insert an EOS disk and press the INSERT key.

On the file display, an arrow will point to the current file. Use the arrow keys to move the pointer around the screen. If there are more files on the disk than can be shown at one time, a highlighted MORE will appear at the bottom of the directory display. Press HOME+DOWN keys at the same time to scroll down through the rest of the directory. HOME+UP will scroll you back towards the first screen. The HOME key alone will move the pointer to the first file on the current directory screen. If the current disk is not the disk that you want to work with change disks and press the insert key.

The following keys work with the file functions screen:

WILDCARD - displays a help screen for file functions.

MOVE/COPY - copies a single file. Move the pointer to the file that you want to copy.

CLEAR - clears the directory starting with the currently selected file. Be very careful when using this function. The removed files are not recoverable. You can abort the CLEAR function by pressing ESCAPE or CONTROL+C at the Check Drives prompt.

INSERT - logs in a new disk. Press this key to see the correct directory after changing disks.

PRINT - prints *a* single file either to the screen, the ADAM printer or dot matrix printer.

SHIFT+PRINT - prints a directory listing including file size and blocks left to the screen, ADAM printer or dot matrix printer.

DELETE - deletes a single file. You will be asked to verify that you want the file deleted.

STORE/GET - tags files for multiple copying, printing or deleting. When you have finished tagging files, press RETURN and you will be presented with a menu which lets you select the desired file operation.

UNDO - untags files.

Smartkey I - puts you into Edit Catalog mode. This will allow you to rename files, change file attributes/ modify a file's size and set the file's date stamp. Be very careful when using this function. You can do irreparable damage to the disk's directory.

Smartkey II - changes from file function to disk function mode.

EDIT DIRECTORY

This function allows you to make changes directly in a disk's directory or catalog.

WARNING - you can do irreparable damage to your disk's directory when using this function. Use at your own risk/ preferably on a backup copy of your disk.

This function can be used to rename, write protect, delete, and undelete. It can also be used to reveal system files that don't normally appear in your directory. Finally, it can be used to reconstruct a directory that has somehow been compromised.

You enter Edit Directory mode by pressing Smartkey I on the File List screen. Edit Directory mode displays each entry in a disk's directory one at a time and allows you to make whatever changes that you feel are necessary. The first directory entry display on entering Edit Directory mode is the entry corresponding to the current file (the file pointed to) on the File List screen. You can move to other directory entries by pressing the UP and DOWN arrow keys. HOME+UP will move you to the Volume Entry (Directory Entry 0) while HOME+DOWN will move you to the BLOCKS LEFT entry. You can move directly to any entry by pressing the HOME key and the number of the entry that you want to move to.

The Smartkeys provide access to the editing functions as follows:

I - Set Name

- allows you to rename a file or volume.
- for the volume name you are allowed up to 11 ascii characters.
- for file names you are allowed up to 10 characters. After 10 characters are entered or after a carriage return, the cursor will move over one space. You should now enter the file type.
- The second and third directory entries must be BOOT and DIRECTORY for EOS (and Filemanager) to be able to work with a disk.

II - Set Attributes

- use the UP and DOWN arrow keys to select the attribute that you want to change.
- press "Y" or "N" to change the attribute as desired.
- press RETURN after all changes have been made.
- File Attributes
 - Locked
 - locked files cannot be deleted but can otherwise be changed.
 - Write Protect
 - the file can only be read. It cannot be changed but can be deleted.
 - Read Protect
 - the file cannot be read, only written to. It can, however, be deleted.
 - User File
 - files with this attribute set are shown in your directory listing. All files created by the user (ie SmartWriter or SmartBasic) are user files.
 - System File
 - these are files created by Coleco. Generally, they are application programs like SmartBasic (BASICPGM), AdamLink or Adam Calc. They can also be other files such as those used to create program logos.
 - files with this attribute set are not shown in your directory listing.
 - Deleted
 - deleted files have this bit set and are not shown in your directory.
 - to undelete a-file, reset this bit. However, you may not be able to recover part or all of your file if another file has made use of the blocks freed by the deleted file. If you accidentally delete a file, do not save anything else to that disk or tape. Save your work to another disk, then use Filemanager to undelete your file.
- Execute Protect
 - files with this bit set cannot be unlocked.
- Blocks Left
 - this bit should should only be set for the Blocks Left entry. EOS treats any file with this bit set as the Blocks Left entry. You can lose all your files on a disk if this bit is set inappropriately.

III - Set Start Block of File

- use decimal numbers
- should be equal to the start of the previous file plus the length of the previous file.

IV - Set Nominal Length of File in Blocks

- use decimal numbers
- the disk space allocated by EOS to a file may be greater than the space the file actually uses. This happens when EOS files a small file into the hole created by a deleted file.

V - Set Actual Length of File in Blocks

- use decimal numbers

sV - Set Bytes Used in Last Block

- use decimal numbers
- EOS application programs use this to know where a file ends.

VI - Set Date

- in international YY/MM/DD format
- years range for 00 to 99, months from 00 to 12 and days from 00 to 31.
- Filemanager does not check to see if the day selected is consistent with the month.

COPY FILES

Filemanager is perhaps the most versatile file copy utility available. It allows you to copy files from disk to taper tape to disk, tape to tape and disk to disk. It even allows you to copy a file to the same disk or tape. You are also given the option of renaming the copied file.

There are two ways to copy files using Filemanager. To copy one file, move the pointer to the file that you want to copy and press the MOVE/COPY key. To copy more than one file, tag each file using the STORE/GET key, press RETURN when all files are tagged and then select the copy function from the tagged functions menu.

When this is done, the Copy File option menu will appear. This menu gives you the following choices.

I - Destination Drive

- press Smartkey I until the desired destination drive appears on the screen.

II - Use Same/Different file name

- allows you to select a different name for the copied file. You will be shown the old name of the file and will be asked for a new file name. If you press RETURN without entering a new file name the old file name will be used.
- Because Filemanager uses a large buffer when copying files the destination directory is

updated only after all files are copied. Therefore, you will be asked for the new file name only at the end of the file copy process, even when multiple files are being copied.

- If you are copying a file to the same disk or tape, Filemanager will insist that you give the new copy of the file a different name.

III - Copy to Same/Different Media

- When you select copy to a different media and the source and destination drives are the same, you will be prompted to switch disks whenever Filemanager wants to read from or write to a different media than is currently in the drive.

- If you are copying to a different drive, the setting of this option will be ignored.

NOTE: Filemanager uses the volume size as shown in directory entry 0 of the destination disk to determine if there is enough space remaining on that disk to accept the file to be copied. If there is not enough room, the file copying process is aborted. You should make sure that the volume size is accurate.

PRINT FILES

There are two ways to print files using Filemanager. To print one file, move the pointer to the file that you want to print and press the PRINT key. To print more than one file, tag each file using the STORE/GET key, press RETURN when all files are tagged and then select the print function from the tagged functions menu.

At this point, the Print File option menu will appear. This menu gives the following choices:

I - Select Printer

- you can choose between printing the file to the screen, the ADAM printer or to any other printer that is connected to the ADAM through a parallel port that is compatible with the Eve SP-1 or Orphanware PIA-2 printer interfaces. Filemanager contains its own printer drivers so that you do not need to load a patched version of EOS before booting Filemanager.

II - Select Maximum Number of Characters per Line

- Filemanager will automatically send a carriage return/line feed to the selected output device after the specified number of characters have been printed on one line.

- The possible choices are:

1) 30 characters - for screen output

2) 80 characters - for printer output

3) 96 characters - for output to printers that have a 12 character per inch font. Filemanager will automatically switch your printer into this mode if you complete the printer installation as described below. If the ADAM printer is selected, this setting is ignored.

4) 132 characters - for printers with a compressed 16.5 characters per inch font.

III - Left Margin Setting

- select the number of spaces to insert at the start of each new line. The possible choices range from 0 to 8.

IV - Select Type of Page Break

- After sending 24 lines to the screen or 56 lines to the printer, Filemanager will perform a page break. If you are printing to the screen, Filemanager will pause until you press any key. If you are sending output to a printer, Filemanager will perform the type of page break as selected.
- Pause at End of Page
 - Filemanager will pause until you press any key. Use this option with single-sheet paper.
- use Form-Feeds
 - Filemanager will send multiple line feeds to the ADAM printer or a form feed to a non-ADAM printer. Use with tractor feed paper.
- Continuous Printing
 - Filemanager does not perform a page break when printing to any device. Use with tractor feed paper when sending a file to the printer.

V - Select Single or Double Spacing

VI - Select Draft or Letter Quality

- This option will only work if the printer installation procedure described below has been completed.

NOTE: Filemanager will automatically set margins and line spacing when you are printing out SmartWriter files. These settings will be shown on the option screen the next time that you print out a file.

You can temporarily halt the printing of a file at any time by pressing CONTROL+S. Pressing any key other than CONTROL+C will resume printing. A CONTROL+C will abort the print job.

When printing multiple files/ Filemanager will print the name of each file before printing the file itself. When sending output to the printer, the file name will be on a separate page.

DELETE FILES

There are two ways to delete files using Filemanager. To delete one file, move the pointer to the file that you want to delete and press the DELETE key. To delete more than one file/ tag each file using the STORE/GET key, press RETURN when all files are tagged and then select the delete function from the tagged functions menu.

Filemanager will now present you with the name of the file that you have selected for deletion and will ask you if you want to delete that file. Enter an "N" or "n" if you do not want to delete the displayed file. The file will be deleted if you enter anything else. If you are deleting multiple files, Filemanager will now go on to the next file even if you decided not to delete the previous file. Pressing ESCAPE or CONTROL+C will abort the delete function. If a file is deleted in error, either

through the use of Filemanager or any other ADAM program, the Edit Catalog function can be used to undelete or restore it.

DISK FUNCTIONS

After the disk functions option is selected from the main menu (by pressing Smartkey II), the screen will clear and the disk functions menu will be displayed. Make your choice from the following options by pressing the appropriate Smartkey.

I - Backup

- creates a mirror image copy of the source media.

II - Krunch

- recovers disk and directory space lost to deleted and backup files.

III - Copy Blocks

- copies selected blocks of the source media.

IV - Edit Block

- allows full screen editing of any one block of the source media.

V - Format Media

- formats disks (with a 2 disk format option) and blanks out tapes.
- supports double-sided and quad density disk drives.

VI - Initialize Media

- creates a blank directory for disks and tapes.
- supports up to an 8 block directory.

BACKUP

Backup creates a mirror image copy of the source media on the destination media. In order to avoid unnecessary copying, Filemanager will read the directory of the source disk and will stop copying once it reaches BLOCKS LEFT. If no directory is found (ie a Supergame or CP/M disk), Filemanager will copy the entire disk. If you want to backup past BLOCKS LEFT, use the Copy Blocks function of Filemanager. Filemanager's Backup function will work with tape drives and single-sided, double-sided and quad density disk drives.

If Filemanager cannot locate a BLOCKS LEFT entry, it will use the type of media and media size as shown on the Backup option screen to determine the number of blocks it needs to copy off the source media and the capacity of the destination media. Furthermore, though Filemanager will backup from a larger capacity source to a smaller destination, the backup process will terminate when the destination device is filled up. This results in lost data and a directory that does not accurately

reflect the contents of the destination media.

Note that the media size setting is only important for disk drives as Filemanager assumes that all tapes are 256K. However, it is very important that the media size settings accurately reflect the size of your disk drives.

KRUNCH

Krunch recovers directory and disk space lost to deleted and, optionally, backup files.

Filemanager assumes that all files that have a lowercase file type are backup files. If you want to keep any files with such a file type, make sure that you disable the Remove Backup Files option.

You can, of course, delete any unwanted files with a lowercase file type before using Krunch.

Filemanager will krunch up to an 6 block directory.

Filemanager will use the type of media and media size as shown on the Krunch option screen to determine the capacity of the destination media. The media size setting is only important for disk drives as Filemanager assumes that all tapes are 256K. However, it is very important that the media size settings accurately reflect the size of your disk drives.

When the source and the destination drives are the same, Filemanager gives you the option of Krunching to the source media or to a different media. The latter option is highly recommended. If you choose to Krunch to the same media and the Krunch function aborts before completion (perhaps due to a power failure), your files could be damaged beyond repair. Since Filemanager uses its entire copy buffer for the Krunch function, media swaps are minimized and there is little or no advantage to Krunching to the same disk or tape.

COPY BLOCKS

The Copy. Blocks function will copy selected blocks from the source media to any location on the destination media. Note that Filemanager allows you to copy blocks from one area of a disk to another location on the same disk, even when those areas overlap.

Using Copy Blocks is quite straightforward but please keep in mind the following considerations:

- 1) Blocks on a disk or tape are numbered starting from zero.
- 2) All numeric entries are decimal or base 10 numbers. Do not use hexadecimal (base 16) numbers.
- 3) When copying blocks to overlapping areas on the same disk, make sure that the number of blocks copied do not exceed the size of the copy buffer as displayed on the opening screen.
- 4) After the specified blocks have been copied, the block settings on the Copy Block option

screen are as follows:

Source start block = block after last block copied.

Number of blocks to copy = 0

Destination start block - block after last block copied. These new settings make it very easy to copy separated blocks on the source media to continuous blocks on the destination or vice versa.

5) Filemanager checks to see if the blocks to be copied exceed the capacity of the source or destination media. Make sure that the appropriate media size is selected in the Copy Blocks options screen. Note that a lowercase "s" precedes the Smartkey number for the media size setting. This means that you should press SHIFT+II or SHIFT+IV.

EDIT BLOCK

If you select the Edit Block function, Filemanager will first ask you to specify the source drive and the block number to edit. Once you have made your selections, press RETURN and the first sector of the block selected will be displayed in hexadecimal and ASCII form at the top of the screen. Because there are no character shapes for control characters, these characters are represented on your screen by a ".".

Note that after entering a block number you will have to press RETURN twice, once to get the block number accepted and a second time to tell Filemanager that you have finished with the Edit Block option screen.

A block contains 8 128 byte sectors. Filemanager displays one sector at a time. To see or edit other sectors in the block, press HOME+UP or HOME+DOWN. The sector display wraps around, that is, if you press HOME+DOWN when sector 7 is displayed, sector 0 of the same block will appear. Similarly, if sector 0 is displayed and HOME+UP is pressed, sector 7 of the same block will appear. To advance to the next block, press CONTROL+DOWN and to move to the previous block, press CONTROL+UP.

To make changes, use the arrow keys to move the cursor to the byte that you want to change and type in the new value. The RETURN key moves the cursor to the start of the next line. When you are finished making changes, press ESCAPE and Filemanager will ask you if you want to save any changes made. Only an "N" or an "n" reply will abort the Edit Block function. If you enter anything else, the changes will be saved to disk. Of course, a CONTROL+C will abort the Edit Block function at any time.

Changes can be made in either hex or ascii. To toggle between the hex and ascii portions of the display, press the TAB key. If the cursor is in the hex portion of the display, changes must be made in hex. Note that hex numbers are composed of 2 digits, an upper nibble and a lower nibble. You can change either or both nibbles. Watch the ascii display as you make changes in hex. The ascii character that represents the byte that you are editing changes as you enter your changes in hex.

If the cursor is in the ascii portion of the display, changes must be made with standard ascii characters. Filemanager will ignore control characters, Smartkeys and any of the dedicated function keys. When you change an ascii character, the hex display is updated at the same time.

Also, pressing the PRINT key will allow you to print out the contents of the current sector in hexadecimal and ascii form. You will first be presented with a menu that let's you select the print destination.

Finally, many user group newsletters have published instructions on how to modify various commercial programs, either to fix bugs or to allow those programs to work from disk. Those instructions have taken many forms but usually tell you to patch an area "nn" bytes from the start of block "bb". There is a table at the end of Filemanager's instructions that will help you translate those instructions into the block, sector notation used by Filemanager.

FORMAT

The Format function will format disks and tapes. All new disks must be formatted before use while tapes come pre-formatted. For tapes, all Filemanager does is write a new directory to the tape, as well as blanking the rest of the tape. Filemanager will not format a blank audio tape. However, Filemanager will format single-sided, double-sided or quad density disk drives. As a bonus, Filemanager will also format using two disk drives simultaneously. This saves a considerable amount of time.

To format a disk or tape, simply select the drive or drives to be formatted, the size of the drive(s) and whether you want the format to be verified or not. When your choices are made, all you have to do is press RETURN. Filemanager will ask you to check your drive(s) and then off you go.

ESCAPE or CONTROL+C at the Check Drive(s) prompt will abort the format process.

Filemanager will give all formatted disks or tapes the volume name "FIRST DIR". Tapes and single-sided disk drives will be given a 1 block directory, double-sided disk drives will be given a 3 block directory while quad disk drives get a 6 block directory. If you want your media to have a different volume name or directory size, use the Initialize function after formatting.

INITIALIZE MEDIA

The Initialize media function creates an empty directory on the selected disk or tape. It has no effect of the non-directory blocks of the disk or tape. Data on those blocks is therefore recoverable, though with a great deal of difficulty. If you want to completely erase a disk or tape, use the Format media function. The Smartkeys perform the following functions:

I - Edit Volume Name

- You can enter up to an 11 digit volume name.
- Any combination of ascii characters is permitted, including spaces. Control characters are not permitted but can be inserted using the Edit Block function after the media is initialized.

II - Set Directory Size

- Filemanager will support up to an 8 block directory.

III - Set Drive to Initialize

IV - Set Media Size

- Filemanager uses this setting to determine the volume size of the disk being initialized. Tapes are assumed to be 256K. For disks though, this setting is very important since EOS makes extensive use of the volume size entry.

CHANGE DEFAULT SETUP

This function allows you to change some of Filemanager's default parameters, temporarily or permanently. The parameters that can be changed include screen colors and source or destination drives.

When changing screen colors, simply press the appropriate Smartkeys until your screen appears the way that you like it. Note that an "s" before a Smartkey designation means you should press the SHIFT key and the Smartkey at the same time.

Most people tend to consistently use the same source and destination drives when copying files etc. You should set Filemanager's default drives to reflect your own preferences. Make sure that the default media sizes correspond to your drive's actual capacities. Remember though that Filemanager always assumes that the capacity of tape drives is limited to 256K.

Once all the default settings are set as you would like them, press return and Filemanager will ask you if you want to save the changes. If you reply "Y" or "y", the changes will be permanently saved. If "N" or "n" is entered, the changes will be in effect only for the current Filemanager session. It is recommended that this function be used only at the start of a Filemanager session. If used in mid-session, Filemanager will also save other options choices that may already have been made.

These choices include the Use Same Media option in Krunch and Copy Blocks, as well as the source block, destination block and number of blocks to copy also in Copy Blocks. Of course, if you want to change the default settings of those options, this is the way to do it.

PRINTER INSTALLATION

Filemanager is already installed for use with Epson printers. If your printer is Epson-compatible, you can ignore these installation instructions. However, it is recommended that you try out the various print features and make any corrections to the installation as needed.

Before proceeding with the printer installation, you will need to know the following control or 'escape' sequences for your printer:

- 1) use Pica font (10 characters per inch);
- 2) use Elite font (12 characters per inch);
- 3) use condensed font (15,6 characters per inch);
- 4) stop using condensed font;

- 5) start near-letter quality mode; and 6) stop near-letter quality mode.

Filemanger's Edit Block function will be used to do the actual printer installation. Put a backup copy of Filemanger in your drive and pull the computer reset switch. After Filemanager boots, go to the Edit Block function and select block 14 for editing. When block 14 is displayed on your screen, pres HOME+UP once to move to sector 7. At the bottom of the sector display you will see "PICA->", " ELITE->", and "CONDO". The Pica and Elite codes will be installed now while the condensed and near-letter quality codes will be installed in block 17.

Your printer control codes are installed immediately after the ">" (hex 3E) as follows: the first byte after the ">" is the number of bytes in the control sequence. This is followed by the actual control sequence as set out in your printer manual, up to a maximum of six bytes. For example, the Epson control sequence for Elite printing is Escape M. This would be entered as 02 1B 4D, right after the 3E of "ELITE->".

The select Elite and Pica control sequences should actually contain two control sequences. In both cases, the first sequence should turn off condensed printing while the second sequence should selected the appropriate Pica or Elite printing. The size byte will, of course, reflect the combined length of the two sequences.

Once you have installed the Pica and Elite sequences in this sector, press CONTROL+DOWN to move to sector 0 of block 15. In this sector, you will install the start condensed printing (after the "N->" at the start of the sector display) and near-letter quality on (after "NLQON->") and near-letter quality off (after "NLQOFF->") control codes. These control codes will be installed as were the previous control codes, that is, a length byte followed by the control sequences as set out in your printer manual. However, these control sequences do not include the turn condensed printing off sequence. Note though that most printers will not print in both near-letter quality and condensed mode. If this is the case you should select either Pica or Elite fonts in combination with near-letter quality mode.

Sector I

00H	120	01H	129	02H	130	03H	131	04H	132	05H	133	06H	134	07H	135
08H	136	09H	137	0AH	138	0BH	139	0CH	140	0DH	141	0EH	142	0FH	143
10H	144	11H	145	12H	146	13H	147	14H	148	15H	149	16H	150	17H	151
18H	152	19H	153	1AH	154	1BH	155	1CH	156	1DH	157	1EH	158	1FH	159
20H	160	21H	161	22H	162	23H	163	24H	164	25H	165	26H	166	27H	167
28H	168	29H	169	2AH	170	2BH	171	2CH	172	2DH	173	2EH	174	2FH	175
30H	176	31H	177	32H	178	33H	179	34H	180	35H	181	36H	182	37H	183
38H	184	39H	185	3AH	186	3BH	187	3CH	188	3DH	189	3EH	190	3FH	191
40H	192	41H	193	42H	194	43H	195	44H	196	45H	197	46H	198	47H	199
48H	200	49H	201	4AH	202	4BH	203	4CH	204	4DH	205	4EH	206	4FH	207
50H	208	51H	209	52H	210	53H	211	54H	212	55H	213	56H	214	57H	215
58H	216	59H	217	5AH	218	5BH	219	5CH	220	5DH	221	5EH	222	5FH	223
60H	224	61H	225	62H	226	63H	227	64H	228	65H	229	66H	230	67H	231
68H	232	69H	233	6AH	234	6BH	235	6CH	236	6DH	237	6EH	238	6FH	239
70H	240	71H	241	72H	242	73H	243	74H	244	75H	245	76H	246	77H	247
78H	248	79H	249	7AH	250	7BH	251	7CH	252	7DH	253	7EH	254	7FH	255

Sector 0

00H	0	01H	1	02H	2	03H	3	04H	4	05H	5	06H	6	07H	7
08H	8	09H	9	0AH	10	0BH	11	0CH	12	0DH	13	0EH	14	0FH	15
10H	16	11H	17	12H	18	13H	19	14H	20	15H	21	16H	22	17H	23
18H	24	19H	25	1AH	26	1BH	27	1CH	28	1DH	29	1EH	30	1FH	31
20H	32	21H	33	22H	34	23H	35	24H	36	25H	37	26H	38	27H	39
28H	40	29H	41	2AH	42	2BH	43	2CH	44	2DH	45	2EH	46	2FH	47
30H	48	31H	49	32H	50	33H	51	34H	52	35H	53	36H	54	37H	55
38H	56	39H	57	3AH	58	3BH	59	3CH	60	3DH	61	3EH	62	3FH	63
40H	64	41H	65	42H	66	43H	67	44H	68	45H	69	46H	70	47H	71
48H	72	49H	73	4AH	74	4BH	75	4CH	76	4DH	77	4EH	78	4FH	79
50H	80	51H	81	52H	82	53H	83	54H	84	55H	85	56H	86	57H	87
58H	88	59H	89	5AH	90	5BH	91	5CH	92	5DH	93	5EH	94	5FH	95
60H	96	61H	97	62H	98	63H	99	64H	100	65H	101	66H	102	67H	103
68H	104	69H	105	6AH	106	6BH	107	6CH	108	6DH	109	6EH	110	6FH	111
70H	112	71H	113	72H	114	73H	115	74H	116	75H	117	76H	118	77H	119
78H	120	79H	121	7AH	122	7BH	123	7CH	124	7DH	125	7EH	126	7FH	127

Sector 3

00H	384	01H	385	02H	386	03H	387	04H	388	05H	389	06H	390	07H	391
08H	392	09H	393	0AH	394	0BH	395	0CH	396	0DH	397	0EH	398	0FH	399
10H	400	11H	401	12H	402	13H	403	14H	404	15H	405	16H	406	17H	407
18H	408	19H	409	1AH	410	1BH	411	1CH	412	1DH	413	1EH	414	1FH	415
20H	416	21H	417	22H	418	23H	419	24H	420	25H	421	26H	422	27H	423
28H	424	29H	425	2AH	426	2BH	427	2CH	428	2DH	429	2EH	430	2FH	431
30H	432	31H	433	32H	434	33H	435	34H	436	35H	437	36H	438	37H	439
38H	440	39H	441	3AH	442	3BH	443	3CH	444	3DH	445	3EH	446	3FH	447
40H	448	41H	449	42H	450	43H	451	44H	452	45H	453	46H	454	47H	455
48H	456	49H	457	4AH	458	4BH	459	4CH	460	4DH	461	4EH	462	4FH	463
50H	464	51H	465	52H	466	53H	467	54H	468	55H	469	56H	470	57H	471
58H	472	59H	473	5AH	474	5BH	475	5CH	476	5DH	477	5EH	478	5FH	479
60H	480	61H	481	62H	482	63H	483	64H	484	65H	485	66H	486	67H	487
68H	488	69H	489	6AH	490	6BH	491	6CH	492	6DH	493	6EH	494	6FH	495
70H	496	71H	497	72H	498	73H	499	74H	500	75H	501	76H	502	77H	503
78H	504	79H	505	7AH	506	7BH	507	7CH	508	7DH	509	7EH	510	7FH	511

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Sector 2

00H	256	01H	257	02H	258	03H	259	04H	260	05H	261	06H	262	07H	263
08H	264	09H	265	0AH	266	0BH	267	0CH	268	0DH	269	0EH	270	0FH	271
10H	272	11H	273	12H	274	13H	275	14H	276	15H	277	16H	278	17H	279
18H	280	19H	281	1AH	282	1BH	283	1CH	284	1DH	285	1EH	286	1FH	287
20H	288	21H	289	22H	290	23H	291	24H	292	25H	293	26H	294	27H	295
28H	296	29H	297	2AH	298	2BH	299	2CH	300	2DH	301	2EH	302	2FH	303
30H	304	31H	305	32H	306	33H	307	34H	308	35H	309	36H	310	37H	311
38H	312	39H	313	3AH	314	3BH	315	3CH	316	3DH	317	3EH	318	3FH	319
40H	320	41H	321	42H	322	43H	323	44H	324	45H	325	46H	326	47H	327
48H	328	49H	329	4AH	330	4BH	331	4CH	332	4DH	333	4EH	334	4FH	335
50H	336	51H	337	52H	338	53H	339	54H	340	55H	341	56H	342	57H	343
58H	344	59H	345	5AH	346	5BH	347	5CH	348	5DH	349	5EH	350	5FH	351
60H	352	61H	353	62H	354	63H	355	64H	356	65H	357	66H	358	67H	359
68H	360	69H	361	6AH	362	6BH	363	6CH	364	6DH	365	6EH	366	6FH	367
70H	368	71H	369	72H	370	73H	371	74H	372	75H	373	76H	374	77H	375
78H	376	79H	377	7AH	378	7BH	379	7CH	380	7DH	381	7EH	382	7FH	383

Sector 5

00H	640	01H	641	02H	642	03H	643	04H	644	05H	645	06H	646	07H	647
08H	648	09H	649	0AH	650	0BH	651	0CH	652	0DH	653	0EH	654	0FH	655
10H	656	11H	657	12H	658	13H	659	14H	660	15H	661	16H	662	17H	663
18H	664	19H	665	1AH	666	1BH	667	1CH	668	1DH	669	1EH	670	1FH	671
20H	672	21H	673	22H	674	23H	675	24H	676	25H	677	26H	678	27H	679
28H	680	29H	681	2AH	682	2BH	683	2CH	684	2DH	685	2EH	686	2FH	687
30H	688	31H	689	32H	690	33H	691	34H	692	35H	693	36H	694	37H	695
38H	696	39H	697	3AH	698	3BH	699	3CH	700	3DH	701	3EH	702	3FH	703
40H	704	41H	705	42H	706	43H	707	44H	708	45H	709	46H	710	47H	711
48H	712	49H	713	4AH	714	4BH	715	4CH	716	4DH	717	4EH	718	4FH	719
50H	720	51H	721	52H	722	53H	723	54H	724	55H	725	56H	726	57H	727
58H	728	59H	729	5AH	730	5BH	731	5CH	732	5DH	733	5EH	734	5FH	735
60H	736	61H	737	62H	738	63H	739	64H	740	65H	741	66H	742	67H	743
68H	744	69H	745	6AH	746	6BH	747	6CH	748	6DH	749	6EH	750	6FH	751
70H	752	71H	753	72H	754	73H	755	74H	756	75H	757	76H	758	77H	759
78H	760	79H	761	7AH	762	7BH	763	7CH	764	7DH	765	7EH	766	7FH	767

Sector 4

00H	512	01H	513	02H	514	03H	515	04H	516	05H	517	06H	518	07H	519
08H	520	09H	521	0AH	522	0BH	523	0CH	524	0DH	525	0EH	526	0FH	527
10H	528	11H	529	12H	530	13H	531	14H	532	15H	533	16H	534	17H	535
18H	536	19H	537	1AH	538	1BH	539	1CH	540	1DH	541	1EH	542	1FH	543
20H	544	21H	545	22H	546	23H	547	24H	548	25H	549	26H	550	27H	551
28H	552	29H	553	2AH	554	2BH	555	2CH	556	2DH	557	2EH	558	2FH	559
30H	560	31H	561	32H	562	33H	563	34H	564	35H	565	36H	566	37H	567
38H	568	39H	569	3AH	570	3BH	571	3CH	572	3DH	573	3EH	574	3FH	575
40H	576	41H	577	42H	578	43H	579	44H	580	45H	581	46H	582	47H	583
48H	584	49H	585	4AH	586	4BH	587	4CH	588	4DH	589	4EH	590	4FH	591
50H	592	51H	593	52H	594	53H	595	54H	596	55H	597	56H	598	57H	599
58H	600	59H	601	5AH	602	5BH	603	5CH	604	5DH	605	5EH	606	5FH	607
60H	608	61H	609	62H	610	63H	611	64H	612	65H	613	66H	614	67H	615
68H	616	69H	617	6AH	618	6BH	619	6CH	620	6DH	621	6EH	622	6FH	623
70H	624	71H	625	72H	626	73H	627	74H	628	75H	629	76H	630	77H	631
78H	632	79H	633	7AH	634	7BH	635	7CH	636	7DH	637	7EH	638	7FH	639

Sector 7

00H	01H	02H	03H	04H	05H	06H	07H
096	097	098	099	900	901	902	903
09H							
904	905	906	907	908	909	910	911
10H	11H	12H	13H	14H	15H	16H	17H
912	913	914	915	916	917	918	919
18H	19H	19H	18H	1CH	10H	1EH	1FH
920	921	922	923	924	925	926	927
20H	21H	22H	23H	24H	25H	26H	27H
928	929	930	931	932	933	934	935
28H	29H	29H	28H	2CH	20H	2EH	2FH
936	937	938	939	940	941	942	943
30H	31H	32H	33H	34H	35H	36H	37H
944	945	946	947	948	949	950	951
38H	39H	39H	38H	3CH	30H	3EH	3FH
952	953	954	955	956	957	958	959
40H	41H	42H	43H	44H	45H	46H	47H
960	961	962	963	964	965	966	967
48H	49H	49H	48H	4CH	40H	4EH	4FH
968	969	970	971	972	973	974	975
50H	51H	52H	53H	54H	55H	56H	57H
976	977	978	979	980	981	982	983
58H	59H	59H	58H	5CH	50H	5EH	5FH
984	985	986	987	988	989	990	991
60H	61H	62H	63H	64H	65H	66H	67H
992	993	994	995	996	997	998	999
68H	69H	69H	68H	6CH	60H	6EH	6FH
1000	1001	1002	1003	1004	1005	1006	1007
70H	71H	72H	73H	74H	75H	76H	77H
1008	1009	1010	1011	1012	1013	1014	1015
78H	79H	79H	78H	7CH	70H	7EH	7FH
1016	1017	1018	1019	1020	1021	1022	1023

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Sector 6

00H	01H	02H	03H	04H	05H	06H	07H
768	769	770	771	772	773	774	775
08H	09H	09H	08H	0CH	00H	0EH	0FH
776	777	778	779	780	781	782	783
10H	11H	12H	13H	14H	15H	16H	17H
784	785	786	787	788	789	790	791
18H	19H	19H	18H	1CH	10H	1EH	1FH
792	793	794	795	796	797	798	799
20H	21H	22H	23H	24H	25H	26H	27H
800	801	802	803	804	805	806	807
28H	29H	29H	28H	2CH	20H	2EH	2FH
808	809	810	811	812	813	814	815
30H	31H	32H	33H	34H	35H	36H	37H
816	817	818	819	820	821	822	823
38H	39H	39H	38H	3CH	30H	3EH	3FH
824	825	826	827	828	829	830	831
40H	41H	42H	43H	44H	45H	46H	47H
832	833	834	835	836	837	838	839
48H	49H	49H	48H	4CH	40H	4EH	4FH
840	841	842	843	844	845	846	847
50H	51H	52H	53H	54H	55H	56H	57H
848	849	850	851	852	853	854	855
58H	59H	59H	58H	5CH	50H	5EH	5FH
856	857	858	859	860	861	862	863
60H	61H	62H	63H	64H	65H	66H	67H
864	865	866	867	868	869	870	871
68H	69H	69H	68H	6CH	60H	6EH	6FH
872	873	874	875	876	877	878	879
70H	71H	72H	73H	74H	75H	76H	77H
880	881	882	883	884	885	886	887
78H	79H	79H	78H	7CH	70H	7EH	7FH
888	889	890	891	892	893	894	895