

Genie



New Horizons
S O F T W A R E

Genie

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Introduction

Overview

Genie, your wish is its command. An ideal tool for use with your Atari computer. With Genie you can stop right where you are in a program, execute any one of Genie's useful functions and then go back to exactly where you left off, like magic.

Genie does not interfere with your main program, and only appears when you summon it. Once installed, Genie will wait for your summons until you turn your computer off.

Genie only works with Atari XL or XE computers that have at least 64K of memory, since it utilizes the 16K of memory that is hidden "under" the operating system. The only accessory you'll need is a disk drive and you're ready to put Genie to work. Note that Genie will **not** work with any programs that use the same 16K region of memory. This means that any program that requires the Atari Translator Disk will not work with Genie.

Using This Manual

Genie is designed for all users of Atari computers. Beginners and experts alike will find these tools very useful. If you want to get started right away using Genie, then read the section on "Using Genie." If you later want to find out more about the full capabilities of Genie, read the section entitled "Genie Reference."

Throughout this manual, all special keys will be in bold. For example, if you read

"press the **Shift**, **Control**, and **Esc** keys..."

we are talking about the keys labeled "Shift", "Control", and "Esc".

While using Genie, you will find that the keys **Option**, **Select**, **Start**, and **Help** will perform special functions. What these functions are is always listed across the top part of your screen while you are using Genie. Also note that the **Break** key does nothing when you are using Genie.

While using Genie's DOS functions, you may come across a disk or file related error. If this happens Genie will give you an error code; you can find the explanation of these codes, along with some suggested remedies, in the Appendix.

Using Genie

Getting Started

Before you begin using your Genie disk it is a good idea to make a copy of it, and then use that copy exclusively. If anything should happen to your copy, you will still have your original disk to fall back on. To make a copy of your disk, see your DOS II reference manual (under "Duplicating Data Disks", page 37).

You must install Genie before you start using any other program. To install Genie follow these steps:

1. Make sure that your computer is OFF.
2. Turn on your disk drive and wait for the red BUSY light to go out.
3. Insert your copy of Genie into your disk drive (with the label facing up and out). If you have more than one disk drive, then use drive number one.
4. Turn ON your computer.
5. After a few seconds you will see a copyright message on your screen. Genie is now loading.
6. When Genie has finished loading, you will be asked to insert your program disk. Insert the disk you wish to use for your main application.
7. Press the Select key. Your main program will start loading just as if Genie weren't there. Once your program finishes loading you are ready to start using your application, with Genie at your beck and call.

Summoning Genie

You can summon Genie at any time (except when your computer is using your disk drive or printer) by holding down the **Shift** and **Control** keys and pressing the **Esc** key. In the blink of an eye you will see the Genie Main Menu, from which you can choose one of it's options. Use this key sequence any time you wish to call up your Genie, it's the computer equivalent to rubbing a lamp.

To leave Genie, simply press either the **Help** or **Esc** key. You will return to exactly where you were before you summoned Genie. Note that in every Genie function except the Note Pad, the **Help** key and **Esc** key perform the same function of either cancelling an operation or returning to the Main Menu (or back to your program if you are already at the Main Menu).

The Genie Menu

Once you have summoned your Genie, you will see a list of options that you can choose from:



Figure 1
The Genie Main Menu

To select a menu option, either use the **Option** and **Select** keys to move the highlighting bar up or down and press **Start** to make your selection, or simply press the number corresponding to your selection.

You can also use the cursor up and down keys -- either with or without pressing the **Control** key -- to move the highlighting bar up or down, and the **Return** key to make your selection.

Finally, you can use the Atari Numerical Keypad (CX-85) number keys, or its cursor keys (located along the left hand side) and its **+Enter** key.

Making Your Wishes Come True

Once you tell Genie your selection, you will be taken directly to that function. Genie's four capabilities are briefly discussed below. For more complete information see the discussion of each function in the "Genie Reference" section.

All of Genie's functions will work with the Atari Numerical Keypad, although the operation of the special keys may vary from one function to another. For information, see the discussion of the Numerical Keypad in the "Genie Reference" section.

Genie Note Pad: No more hunting for scraps of paper to write something down on. With the Genie Note Pad you can type in whatever comes to mind whenever you want. You can save your thoughts to a file for later retrieval (or for use by your regular word processor), or just print them when you are done.

You can also load other small files into Genie's Note Pad, to either edit or print them. The capacity of Genie's Note Pad is about 120 screen lines, more than enough for most needs (but of course its not designed for writing the Great American Novel).

The contents of your Note Pad will be saved until you turn your computer off. You can add a little now, go back to what you were doing, and then come back to finish it later.

Genie Calculator: With the Genie Calculator you have a useful five function desk calculator. You can add, subtract, multiply, and divide numbers, and raise a number to the power of another.

The Genie Calculator also has a memory, so you can save temporary results to be used later. The contents of the memory are always shown on the screen, and are saved until you turn off your computer.

ATASCII Table: This is an indispensable feature for all programmers from casual to professional. With this table of Atari ASCII (ATASCII) keyboard codes, you no longer have to hunt through the appendices of your manuals. The table shows the codes (in hexadecimal) corresponding to all non inverse-video Atari characters (including the graphics characters).

This table can also come in handy when you need to know the character for a particular printer control code. If your manual lists a code in hexadecimal you can quickly look up the corresponding key.

DOS Functions: This function is like having a DOS menu instantly available, without taking up any memory space. With this function you can see a diskette's directory, display a file's contents, rename, lock, unlock, or delete a file, or format a diskette.

You merely select the option you want from the DOS Functions menu, just like selecting from the Genie Main Menu. You will then be asked for any additional information Genie needs to carry out your command (such as the name of the file you want to delete, or the drive number for the diskette you want to format).

Once you've made a selection, you can abort it simply by pressing any of the four special keys (**Option**, **Select**, **Start**, or **Help**) or by pressing the **Esc** key.

Genie Reference

Once Genie is installed it occupies the 16K of memory that is hidden "under" the Operating System (OS) ROM's (actually, for technical reasons, there is only 14K of memory available). In addition, a small routine is placed in main memory in a location that is seldom used (the bottom of page 1) to summon Genie when the special key combination is pressed. Any program that uses either the 14K of memory under the OS ROMs or the main memory location used by Genie will not work with Genie.

Also, since the main program always has the last say in terms of what the system will recognize, some programs (in particular, those that use their own keyboard interrupt routine) will not let you summon Genie.

Since both Genie and the Note Pad text must fit in the 14K of memory available, a few "frills" (such as word wrap in the Note Pad, binary math in the Calculator, and so on) have not been included in the Genie functions. Remember that every extra frill reduces the size of the Note Pad text area.

Genie Note Pad

This function allows you to enter and edit up to about 120 screen lines of notes. When you select this option for the first time, you will see the usual header lines on top and a blank Note Pad screen. The Note Pad with some text entered into it looks like this:

```
HELP:  Main Menu      OPTION: Load File
START: Print         SELECT: Save File
-----
                        GENIE Note Pad
-----
This is a sample of the GENIE Note Pad.
You can type in over 100 screen lines of
text.
You can save your work to a file, print
it, or load another file to work on.
Your text will be saved in the Note Pad
until you turn your computer off.
```

Figure 2
The Genie Note Pad

The Note Pad starts out in lower case; to change to upper case press the **Caps** key, to return to lower case press the **Caps** key again.

To enter text into the Note Pad, just type the characters you want. All characters will be placed at the location of the cursor (the white box), and both the character under the cursor and those to its right are moved over to make room. Pressing **Return** will start a new line (Return characters show up on the screen as inverse video Esc characters). If you try to enter more text than the Note Pad can hold you will hear a beep.

Certain keys also let you perform editing functions. A description of these keys and what they do is given below (in some cases you must hold down either the **Shift** or **Control** key when you press the editing key, this is shown in the key name).

Control Up, Down, Left, or Right: Holding the **Control** key down and pressing one of the cursor arrow keys will move the cursor in that direction. If you try to move out of the text screen, the text will scroll up or down and the

new line will be shown. In effect the screen is a "window" on your full text. You cannot move the cursor past the end of your text.

Back-Space: Removes the character that is just left of the cursor and moves the cursor, the character under the cursor, and the following text back by one space.

Control Insert: Inserts one space at the cursor location and shifts the character under the cursor and the following text over (just like typing a space and then moving the cursor left).

Control Delete: Removes the character under the cursor and moves everything on the right of the cursor over (just like moving the cursor left and pressing **Back-Space**).

Shift Insert: Inserts a new line between the current line and the line above the current one. The cursor is placed at the beginning of the new line.

Shift Delete: Removes the line the cursor is on and moves all lines below it up. The cursor is placed at the beginning of the line.

If you want to include the actual character for an editing key in your text instead of performing their function (for example, if you wanted an up-arrow character in your text instead of actually moving the cursor up) just press the **Esc** key before pressing the editing key.

To print your notes, first make sure that your printer is on (and your printer interface is on if you have one), then press **Start**.

To save your notes for later press the **Select** key. To load the notes you have previously saved press the **Option** key. You will be asked for the name of the file you wish to save to, or load from. Type a name such as **D:NOTES.TXT**, and press the **Return** key (you can leave off the **D:** part if you want to use disk drive 1).

If Genie encounters an error while printing, saving, or loading, you will see an error ID. Check the appendix of this manual for an explanation of these error ID's.

To leave the Genie Note Pad and return to the Genie Main Menu, press the **Help** key.

Genie Calculator

This function gives you all the capabilities of a desk calculator, with the added ability to do calculations in hexadecimal. When you first select this option you will see the Calculator screen with no entries, and initially set to decimal mode. The Calculator screen with some entries looks like this:

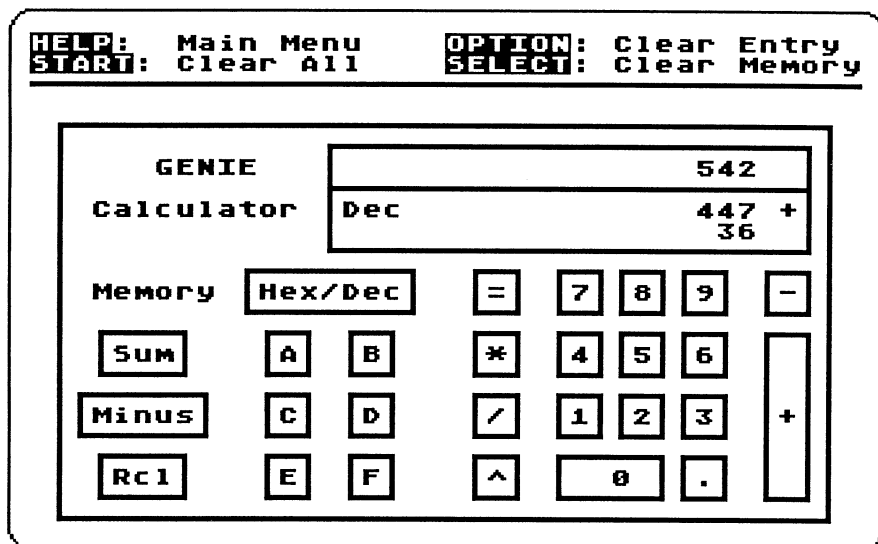


Figure 3
The Genie Calculator

There are three display lines for numbers; the top one shows the current contents of memory, the second one shows any previous entry and the pending operation (addition in the example above), and the last one shows either your current entry or the result of a previous calculation. The second display line also shows what the Calculator's current mode is (Dec or Hex).

The Calculator has five functions and a memory. The operations, and keys you must press to perform them, are addition (+), subtraction (-), multiplication (*), division (/), and raising to a power (^). To use the Calculator you just enter your first number, press the operation key that you want, enter your second number, and finally press the equal sign.

In addition there are several keys that perform special functions. To select the function you want, press the key that is the first character in the name (as shown on the screen) of the function. For example, press the "S" key for the Memory "Sum" function. The Calculator will accept only defined keys from either the keyboard or numerical keypad (If you are using the keypad, see the section on

"Using The Numerical Keypad"). The function keys and what they do are as follows:

Hex/Dec (H): Changes the calculator from decimal to hex or vice versa. Any pending operations are first performed, and both the current entry and contents of memory are converted to the new mode. Note that although in hex mode you can work with numbers up to 12 digits in size, the conversion works only on numbers that are in the range of 0 through 65535 (0 through FFFF hex). If a number is not in this range a beep will sound, the word "ERR" will be shown under the current mode, and the offending number will be set to 0. The keys A through F can only be used in hex mode (to enter hex numbers), and the (^) key cannot be used in hex mode.

Sum (S): Adds the current number to the contents of memory and saves the result in memory. If there was a pending operation then it is performed first.

Minus (M): Works like the "Sum" function, but subtracts the current number from the one in memory.

Rcl (R): Recalls the number in memory and makes it the current entry.

You can clear either the current entry, the contents of memory, or everything by pressing the **Option**, **Select**, or **Start** key. When you leave the Calculator only the Calculator mode and contents of memory are saved, everything else is lost.

To leave the Genie Calculator and return to the Genie Main Menu, press either the **Help** or **Esc** key.

ATASCII Table

This function shows the codes (in hexadecimal) corresponding to all non-inverse video Atari ASCII (ATASCII) characters. When you select this option the screen looks like this:

HELP: Main Menu		OPTION: Main Menu													
START: Main Menu		SELECT: Main Menu													
<hr/>															
ATASCII Table															
0	♥	10	♣	20	!	30	0	40	@	50	P	60	♠	70	p
1	†	11	♠	21	!"	31	1	41	A	51	Q	61	♣	71	q
2	‡	12	♠	22	!"#\$	32	2	42	B	52	R	62	♣	72	r
3	§	13	♠	23	!"#\$%	33	3	43	C	53	S	63	♣	73	s
4	¶	14	♠	24	!"#\$%&	34	4	44	D	54	T	64	♣	74	t
5	·	15	♠	25	!"#\$%&'	35	5	45	E	55	U	65	♣	75	u
6	¸	16	♠	26	!"#\$%&'&	36	6	46	F	56	V	66	♣	76	v
7	¹	17	♠	27	!"#\$%&'&('	37	7	47	G	57	W	67	♣	77	w
8	º	18	♠	28	!"#\$%&'&(')	38	8	48	H	58	X	68	♣	78	x
9	»	19	♠	29	!"#\$%&'&(')*	39	9	49	I	59	Y	69	♣	79	y
A	¼	1A	♠	2A	!"#\$%&'&(')*+	3A	:	4A	J	5A	Z	6A	♣	7A	z
B	½	1B	♠	2B	!"#\$%&'&(')*+.	3B	:	4B	K	5B	[6B	♣	7B	{
C	¾	1C	♠	2C	!"#\$%&'&(')*+.	3C	<	4C	L	5C	\	6C	♣	7C	
D	¸	1D	♠	2D	!"#\$%&'&(')*+.	3D	=	4D	M	5D	^	6D	♣	7D	~
E	¸	1E	♠	2E	!"#\$%&'&(')*+.	3E	>	4E	N	5E	^	6E	♣	7E	~
F	¸	1F	♠	2F	!"#\$%&'&(')*+.	3F	?	4F	O	5F	_	6F	♣	7F	~

Figure 4
ATASCII Table

To get the codes for the inverse video characters, just add 80 hex to the code for the non-inverse character. For example, the code for inverse "A" would be 41 + 80 = C1. You can use the Genie Calculator to do the addition.

To leave the ATASCII Table and return to the Genie Main Menu, press any key.

DOS Functions

There are seven options to choose from under this function, you select the function you want the same way you select items from the Genie Main Menu (see page 5). When you select this option the screen looks like this:

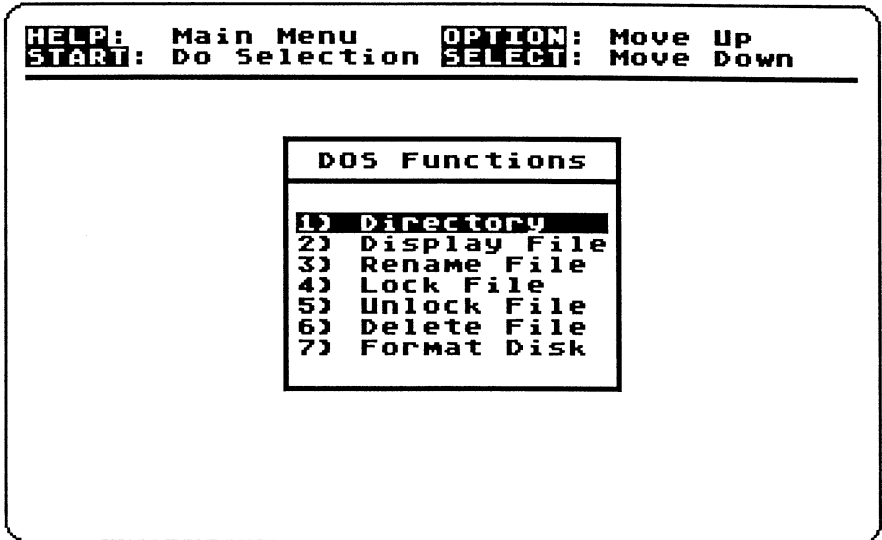


Figure 5
DOS Functions

When you select one of these options you will be asked for some additional information. You can cancel your selection at this point by pressing any of the special keys (**Help**, **Start**, **Select**, or **Option**) or the **Esc** key. If you cancel your selection you will be returned to the DOS Functions menu.

To leave the DOS Functions menu and return to the Genie Main Menu, press either the **Help** or **Esc** key.

In many of the DOS Functions you will be prompted for Device:Filename. "Device:" is the disk drive specifier and "Filename" is the actual file name (wildcard characters can be entered as part of the Filename). For example, at the prompt you might type in:

```
D2 : TEST . TXT
```

This refers to the file called TEST.TXT located on the disk in disk drive number 2. Unless you specify otherwise, Genie assumes that you are referring to disk drive 1. Therefore, the entries:

D1 : TEST . TXT D : TEST . TXT TEST . TXT

all refer to the same file.

You can also specify "wildcards" as part of your file name. See your DOS reference manual for a discussion of using wildcards in specifying a file name.

If Genie encounters an error while trying to perform one of the DOS Functions, an error message will be displayed with an error ID. Refer to the appendix of this manual for an explanation of the ID's.

The following sections discuss each of the DOS Functions options. For a complete description of DOS operations refer to your DOS reference manual.

Directory

Allows you to find what files your disks contain. When you select this option you will be asked for a Device:Filename:

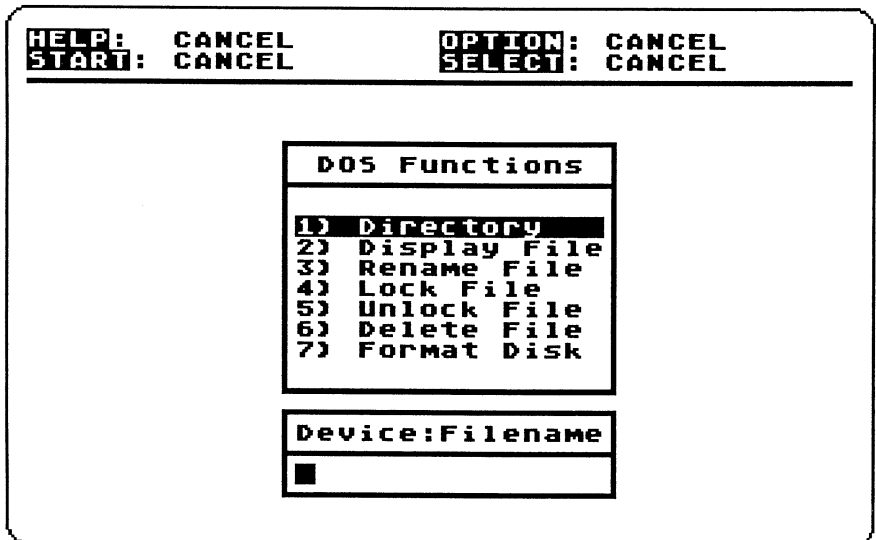


Figure 6
Entering Device and/or Filename Information for Directory

Type in a device and filename and press **Return**. The screen will clear and a list of all of the files that match your entry will be shown. If the display is too long

for one screen you can press **Control 1** to temporarily stop the display. Press **Control 1** again to resume the display. To cancel the listing and return to the DOS Functions menu, press any special key or the **Esc** key.

If you just type **Return** at the Device:Filename prompt, Genie will automatically display a list of all files that are on disk drive 1. To see the files in any other disk drive you must explicitly say so, for example see the names of all of the files in drive 2 you would type **D2:*.*** and press **Return**.

Display File

Allows you to display a file's contents on your screen. Like the directory option, you will be asked for a Device:Filename for the file you wish to see. Type the name of the file and press **Return**. The screen will display the file, scrolling upward if it is too big for one screen. To stop the scrolling of the screen press **Control 1**, to restart the display press **Control 1** again. To cancel the display and return to the DOS Functions menu, press any special key or the **Esc** key.

Rename File

Allows you to change the names of your files. When you select this option you will be asked for the Device and Filename of the file you wish to rename, and the Filename you want it changed to:

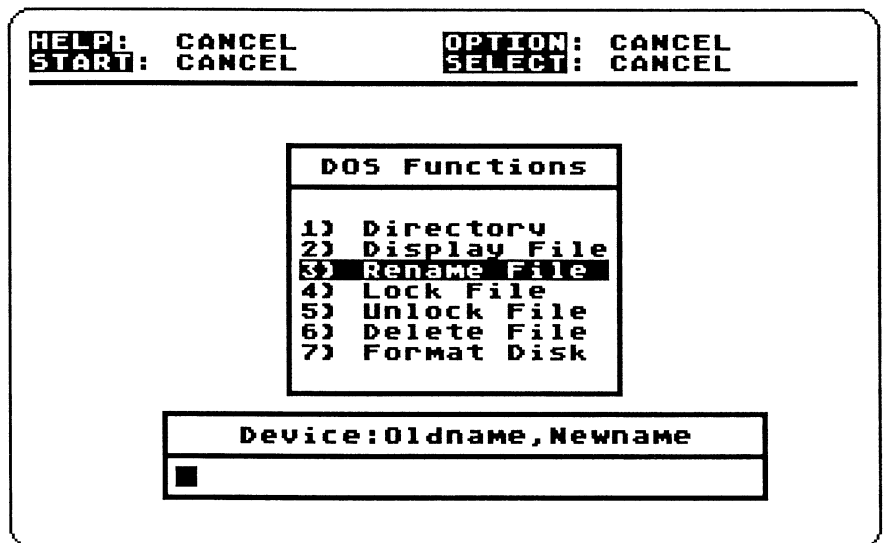


Figure 7
Entering File Rename Information

Type in the device and filename you would like to rename, followed by a comma and the new name you would like the file to have and press **Return**. For example, if you want to rename the file **NOTES.TXT** in drive 2 to **LETTER.TXT**, you would enter:

D2 : NOTES . TXT , LETTER . TXT

Remember, you are renaming a file from what it is to what you want it to be, and the "," between the two names is necessary. Also, since only the file's name is being changed, and not which drive it is in, you must not specify a device as part of the new name.

Lock File

Allows you to lock files for protection. A locked file cannot be modified or deleted until it is unlocked (a locked file will have an asterisk (*) next to its name in a directory listing). When you select this option you will be asked for the Device:Filename of the file or files you want locked. Type your entry and press **Return**.

Unlock File

Allows you to unlock files that you have previously locked. When you select this option you will be asked for the Device:Filename of the file or files you want unlocked. Type your entry and press **Return**.

Delete File

Allows you to delete (erase) files from your disk. When you select this option you will be asked for the Device:Filename of the file or files you want deleted. Type your entry and press **Return**.

WARNING: Be very certain that you want to delete the specified file before you press the **Return** key. Deleted files cannot be recovered!

Format Disk

Allows you to format disks. All disks must be formatted at least once in order to use them. When you select this option you will be asked for the number of the drive which contains the disk you wish to format:

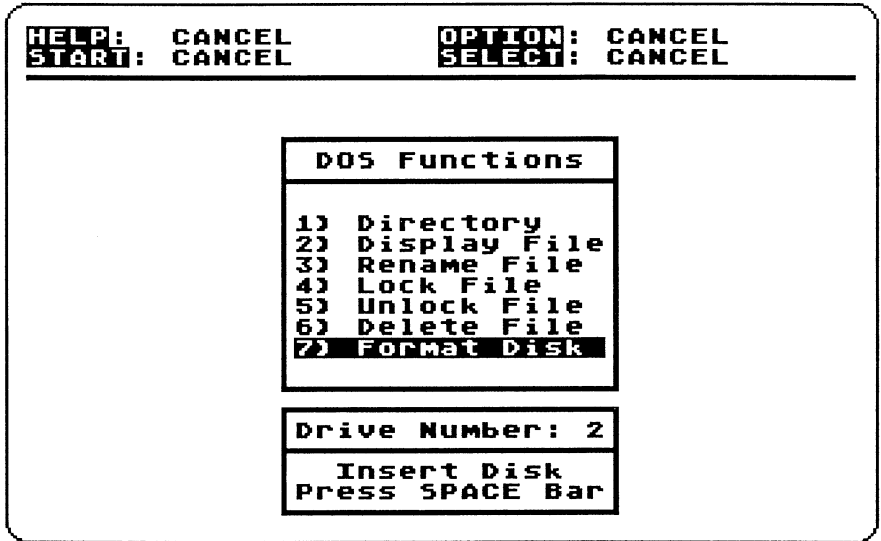


Figure 8
Formatting a Diskette

Type a number from 1 to 8 (the number 2 was typed in the above example). Make sure the correct disk is in the drive and press the space bar. The formatting will take several seconds to complete and cannot be cancelled once it has started.

WARNING: Formatting a disk will erase all files that may be on the disk. Be sure you want to format the disk before you press the space bar.

Using The Numerical Keypad

Genie will automatically work with Atari's Numerical Keypad (CX-85). To use the numerical keypad simply plug it into your computer's joystick port number two.

Depending upon which Genie function you are using, there are two possible sets of keyboard keys the Numerical Keypad keys produce. The diagram on the left of Figure 9 shows the keyboard keys produced by all functions except the Genie Calculator, the diagram on the right shows the keys produced when using the calculator.

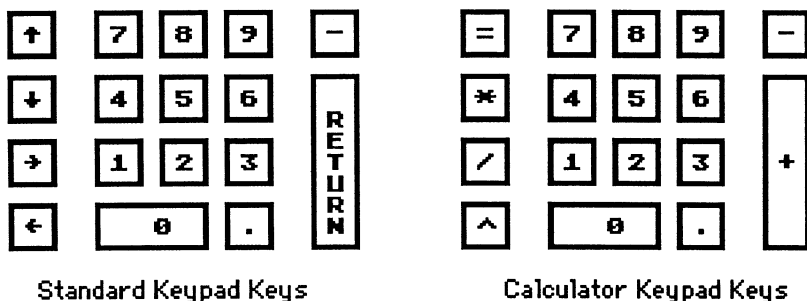


Figure 9
The Numerical Keypad Keys

When using the Genie Calculator, the right side of the calculator screen has a pictorial representation (just like in Figure 9) of the keys the keypad produces, so you don't have to memorize two different key layouts.

Appendix

Error Message Codes

From time to time you may encounter errors when using Genie's DOS or printing functions. When this happens (with one exception), Genie will give you an error code which identifies the problem. The possible errors are described below.

Code	Description
(none)	No IOCB's Available: All I/O Control Blocks are in use by your main program. Have your main program close some files or devices.
82	Nonexistent Device: You have tried to access an undefined device (ie., a device not in the handler table). Check your I/O command for the correct device, and that you have loaded and initialized the handler.
8A	Device Timeout: The device doesn't respond. Examine all connections to make sure they are secure. Make sure your disk drive is turned on and set for the correct drive number. Check your command for the correct drive number.
8B	Device NAK: Problems are located at the serial port or in the peripheral. This is a device specific error, so refer to the documentation for that device.
8C	Serial Frame Error: Information was lost from the peripheral to the computer. This is a very rare error, if it occurs more than once have your device or computer checked. For cassettes, try the recovery suggested in 8A.
8E	Serial Bus Overrun: Information was lost from the peripheral to the computer. This is a rare error, if it occurs more than once have your computer serviced.
8F	Checksum Error: Information was lost from the peripheral to the computer. There is no standard recovery procedure because it could be either a hardware or software problem.
90	Device Done Error: You have attempted to write on a write-protected disk.

- 92 **Function Not Implemented:** The function was not implemented in the device handler.
- A0 **Drive Number Error:** You have specified an incorrect drive number. See page 87 of your DOS II Reference Manual for information on using more than two drives.
- A1 **Too Many OPEN Files:** No sector buffer is available. Close some files from your main program.
- A2 **Disk Full:** No free sectors available. Use a disk which has some free sectors.
- A3 **Unrecoverable System I/O Error:** The DOS version on your disk may be damaged.
- A4 **File Number Mismatch:** The disk file may be damaged. Consult your local user's group to help you recover this file.
- A5 **File Name Error:** Your file specification has illegal characters in it.
- A7 **File Locked:** You have tried to access a locked file for purposes other than to read it. Unlock the file and try again.
- A9 **Directory Full:** You have used all the space (64 file names) allotted for the disk's directory.
- AA **File Not Found:** You tried to access a file that doesn't exist in the directory. Check the directory for the correct spelling.
- AD **Bad Sectors at Format Time:** The disk drive found bad sectors while formatting a diskette. Use another diskette because a diskette with bad sectors cannot be formatted. If this error occurs with more than one diskette, your disk drive may need repair.

