

COMMODORE 64C™

PERSONAL COMPUTER introductory guide



*A quick-start guide to loading and running software
on the world's best selling personal computer.*



commodore 64C™ introductory guide

*A quick-start guide to loading and running software on the
world's best selling personal computer*

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getting started

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yes you can—with the commodore 64C

The Commodore 64C personal computer is a powerful, sophisticated and easy to use information processing system. With the 64C, you can process almost any kind of information—business, personal, educational, recreational, scientific, financial, and more. And with the 64C you can present this information in almost any form—words, numbers, pictures and sound.

With the wide-ranging capabilities of the 64C at your disposal, you can do all this:

word processing

- Type a draft
- Make changes or correct mistakes electronically
- Print out a perfect final copy
- Create form letters and mailing lists
- Save all your material in electronic files
- Recall information with a few keystrokes

business

- Set up and maintain spreadsheets
- Set up and maintain budgets and payrolls
- Create “what if” scenarios
- Perform complex statistical analysis
- Electronically calculate personal and business tax data
- Automatically print out complete tax forms
- Control your investment portfolio
- Create and maintain general ledgers, accounts receivable and accounts payable
- Generate full-color graphs and charts based on your numerical data

data base and file management

- Create your own electronic files and data bases
- Store and control letters and documents, and numerical, statistical and financial data
- Create and maintain inventories
- Keep track of valuable collections (wines, stamps, coins, records, books, etc.)
- Create and update status reports
- File recipes—even create your own cookbook!

telecommunications

- Check financial market activities
- Consult airline schedules
- Do your banking
- Shop for and order merchandise
- Consult information services—like Quantum Link™, The Source™, Delphi™, CompuServe™, Dow Jones™, The New York Times™—for detailed information on almost any topic

- Electronically “mail” almost any kind of information, almost anywhere
- Consult encyclopedias like the World Book and the Academic American Encyclopedia electronically
- Send and receive personal messages and other information through thousands of computer bulletin boards
- Receive newspapers on your TV or monitor

education

- Earn college credits or just take courses for fun with The Electronic University
- Study math, science, English, music, languages and other subjects, at both elementary and advanced levels
- Use light pens, drawing tablets and speech synthesizers
- Visit the stars through your own planetarium
- Learn how to program in languages such as BASIC, C, COBOL, COMAL, FORTH, FORTRAN, LOGO, PASCAL, PILOT—and even assembly and machine language
- Control the pace of learning—go as fast or as slow as you like

entertainment

- Play hundreds of action games and mind games

- Create and print out designs and pictures in 16 vibrant colors
- Create and play music with the 64C's versatile 3-voice, 6-octave sound synthesizer
- Do all this in the comfort of your home—you never have to wait in line or pay to park the car

interfacing with other equipment

- Connect your 64C to printers, disk drives, tape recorders, communications modems, video monitors, television sets, stereo equipment, video recorders, joysticks, paddle controllers, telephones, light pens, drawing tablets, numeric keypads, music synthesizers, scientific equipment . . .
- Control your household appliances
- Even control your own robot servant!

IN DOING ALL THESE THINGS, YOU CAN USE THE 64C IN TWO WAYS:

- You can select from many prepackaged programs (software) available on cartridge, disk or tape.
- Or you can create and run your own programs.

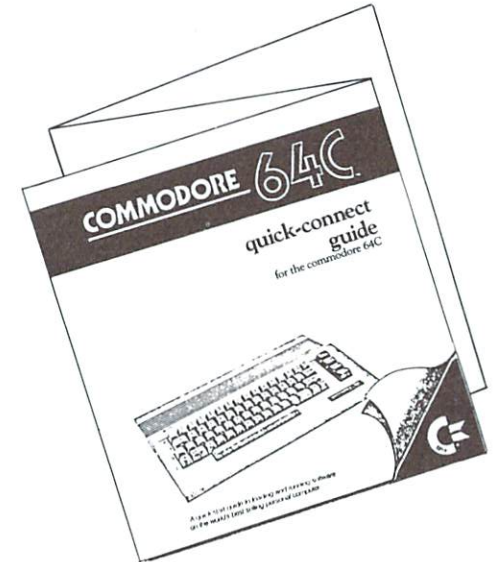
Whatever your level of expertise, you will find that with the information in this booklet you can begin using your 64C quickly and easily.

what you need to get started

Here's what you need to start computing with your Commodore 64C:

- The **computer keyboard**, which lets you type information and send it to the computer
- A **television set** or a **video monitor**, which lets you see what the computer is doing

You can connect accessory equipment (sometimes called **peripheral equipment** or simply **peripherals**) to your 64C. For example, with a disk drive or cassette recorder, you can save your work. With a printer, you can make a copy of your work.



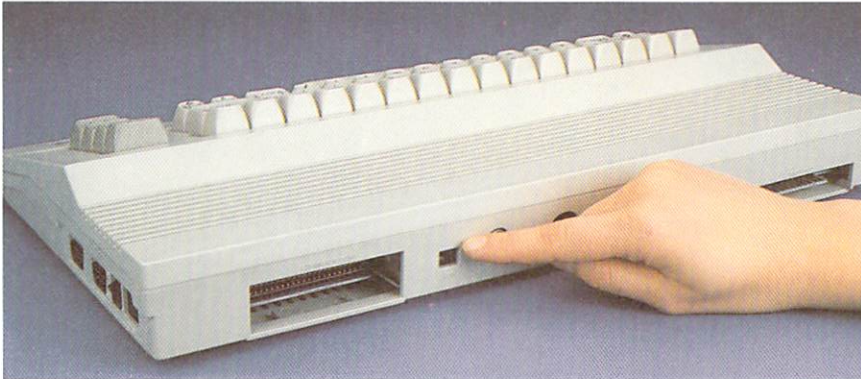
If you haven't already connected your equipment, follow the directions given in the **QUICK-CONNECT GUIDE**, which is packed in the computer box.

turning on the computer for the first time

—if you are using a television set

1. MAKE SURE THAT YOU HAVE CONNECTED THE COMPUTER PROPERLY TO THE TELEVISION SET.

Follow the instructions in the *QUICK-CONNECT GUIDE*.



2. SET THE CHANNEL SELECTOR SWITCH ON THE BACK OF THE COMPUTER.

Set the switch (marked L-H) to either channel 3 or channel 4—whichever is not used in your area.

3. TURN ON THE TV SET.
4. TURN ON THE COMPUTER

The red POWER light on the top left side of the computer then comes on and the initial screen display appears.

—if you are using a monitor:

1. MAKE SURE THAT YOU HAVE CONNECTED THE COMPUTER PROPERLY TO THE MONITOR.

Follow the instructions in the *QUICK-CONNECT GUIDE*.

2. TURN ON THE MONITOR.
3. TURN ON THE COMPUTER.

The small red POWER light on the top left side of the computer then comes on and the initial screen display appears.



the commodore 64C ports



CONTROL
PORTS
For joysticks, mouse, etc.

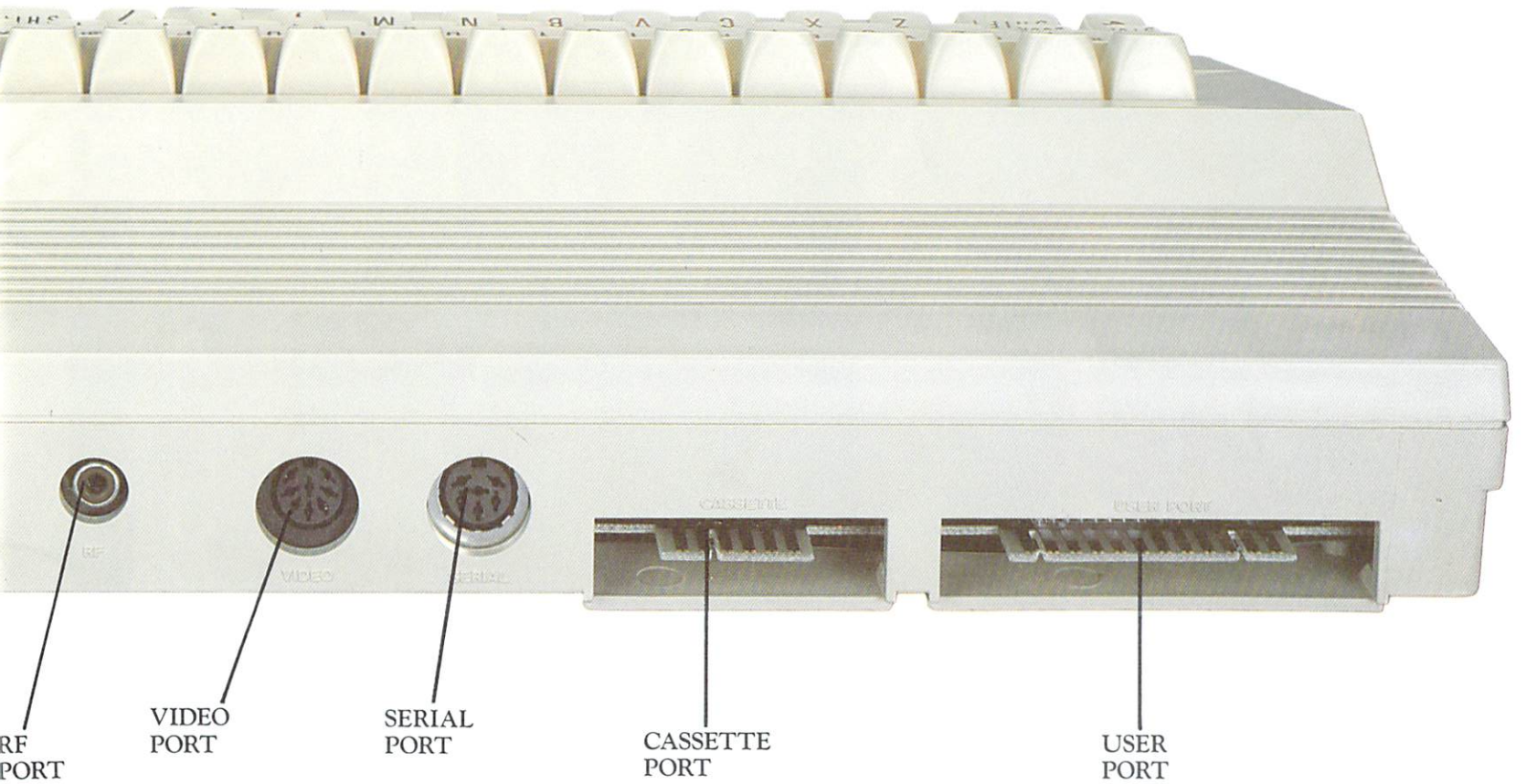
ON/OFF

POWER
PORT



EXPANSION
PORT

L/H
TV Channel Selector
(3 or 4)



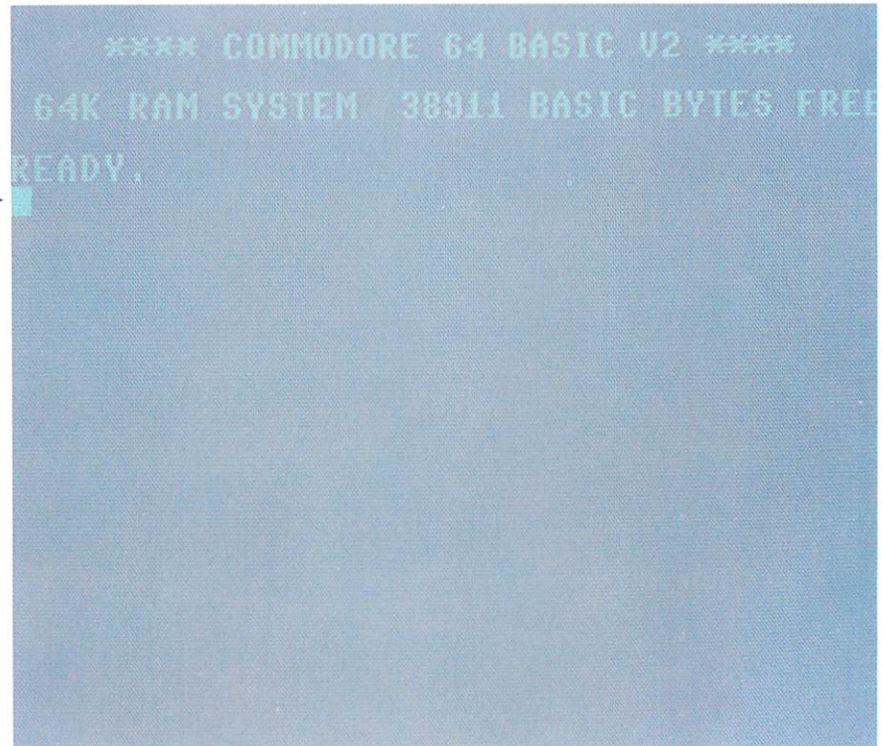
initial screen display

Shortly after you turn on your computer, you should see a display like the one shown below on your television set or monitor:

—the cursor

Notice the small flashing rectangle at the upper left part of the screen, just below the word READY. This rectangle is called the **cursor**. The cursor marks your position on the screen. When you type in something or when the computer responds to something you have typed in, the cursor moves accordingly.

—the cursor—→



—adjusting the screen display

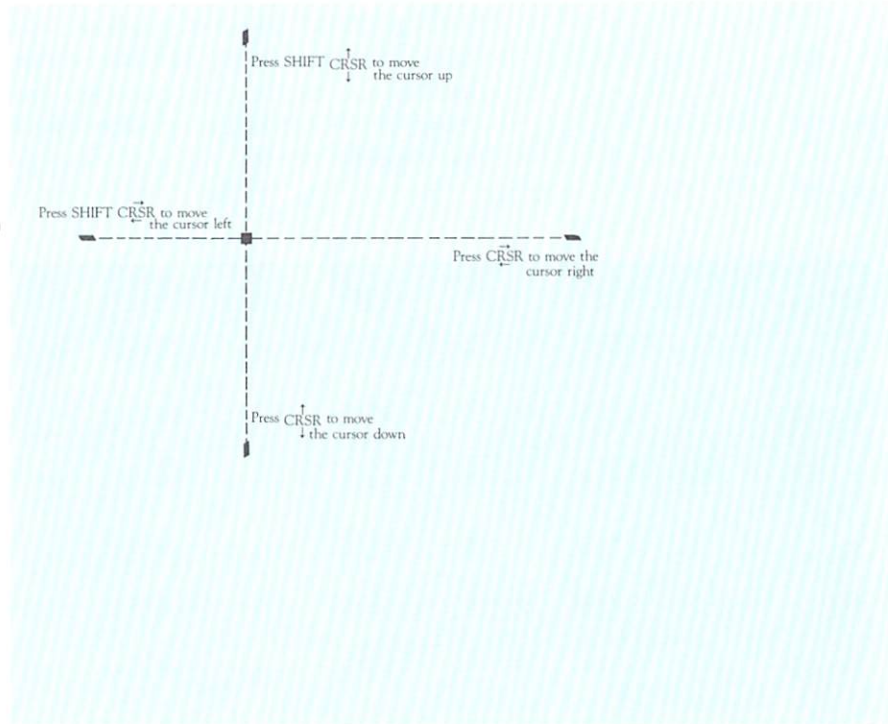
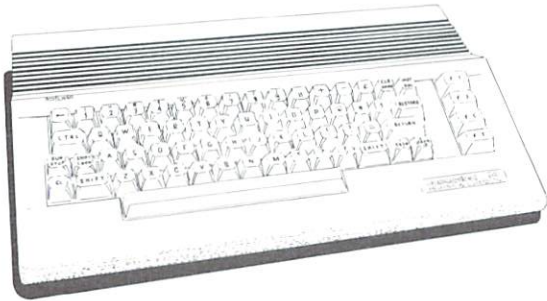
If the screen display is not clear, adjust the controls on your television set or monitor. If you don't get a picture at all, use the troubleshooting chart in the *QUICK-CONNECT GUIDE* to check your connections.

If you press the RETURN without having entered something that the computer can understand, you may see a message on the screen from the computer (e.g., SYNTAX ERROR). These messages are the computer's way of telling you that it can't act on the information you have entered. In some cases the messages are self-explanatory, but in some cases you may need an explanation of the message. Appendix A of the Commodore 64C System Guide lists and explains the error messages for the 64C.



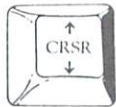
moving around the screen

You can move around the screen by moving the cursor. To do this, you use the two keys marked with arrows, located at the right end of the bottom row of the main keyboard.



You don't have to keep tapping a CRSR key to get it to move more than one space. Just hold the key down and the cursor will continue to move until it reaches the position you want it to be in. Remember that you also must hold down the SHIFT key at the same time if you are moving up or to the left.

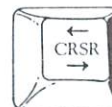
Here's how the cursor keys work:



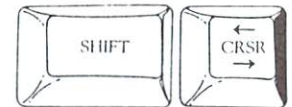
Press CRSR to move the cursor down



Press SHIFT CRSR to move the cursor up



Press CRSR to move the cursor right



Press SHIFT CRSR to move the cursor left

trying out your new commodore 64C

Here's a simple program to show you that you can get your 64C to do things without knowing all about programming or BASIC or machine language.

First, hold down the SHIFT key and press the CLR HOME key. This "clears" (that is, erases) the screen. Then type the following lines exactly as they appear. Press the RETURN key after each line.

```
10 INPUT"PLEASE TYPE YOUR NAME AND PRESS  
RETURN";A$  
20 PRINT"HELLO,";A$  
30 PRINT"GREETINGS FROM YOUR NEW COMMODO  
RE 64C COMPUTER"
```

The numbers at the beginning of each line tell the computer that you are entering a program. Pressing the RETURN key after you type each line tells the computer to "save" that line (that is, to keep the line in the computer's memory).

After you have finished typing line 30 and have pressed RETURN for that line, use the SHIFT and CLR HOME keys to clear the screen again. Then type RUN and press RETURN, and follow the computer's instructions. If you get any kind of error message on the screen, you have probably made a typing mistake. Just clear the screen (use SHIFT/CLR HOME) and start again.

There are many prepackaged software programs that you can use with not much more experience than it takes to use this little sample program. Once you "load" such a program ("loading" means putting the program in the computer's memory), the program instructs or "prompts" you about what to do. The section in this booklet called **using software** tells you how to "load" and "run" prepackaged software programs.

If you are interested in learning how to create and run your own programs using the 64C and the BASIC programming language, see the *COMMODORE 64C SYSTEM GUIDE—Learning to Program in Basic 2.0*—the other book that comes packed with the 64C computer.

about ram and rom

You have probably read or heard the terms RAM (Random Access Memory) and ROM (Read Only Memory) used in connection with computers. These terms refer to the two types of memory used by a computer in processing information.

RAM is memory that you can use AND change. For example, you can use RAM to enter a program, and you can change that program while it is in RAM. The 64C can hold about 64,000 characters (bytes) of information in its RAM. This memory can be directly used by you, and it can be changed by you.

ROM is memory that can only be used by the computer itself to perform and control its internal activities. ROM cannot be changed by you, although there are methods that you can use to see what values are in ROM. Your 64C also has 20K of standard ROM (Read Only Memory).

The computer keeps track of how much RAM you have used and how much you have left. The computer also keeps track of the contents and status of ROM. So, unless you are interested in creating your own programs, you generally need not be concerned about RAM and ROM.

troubleshooting chart

Symptom	Cause	Remedy
Indicator light not 'ON'	Computer not turned ON Power supply not plugged into computer Power supply not plugged into external power	Make sure power switch is in ON position Check power socket for loose or disconnected power cable Check connection with wall outlet
No picture (Monitor)	Bad fuse Monitor not connected and/or not turned on	Replace fuse Check monitor connections and/or ON/OFF switch
No picture (TV)	Incorrect hookup TV not connected and/or turned on Cable to TV not plugged in Computer and/or TV set for wrong channel	Check computer hookup to VHF antenna terminal; Check TV power connection and ON/OFF switch Check output cable connection to TV Set computer to same channel as TV (3 or 4)
Random pattern on screen with cartridge in place	Cartridge not properly inserted	Turn power OFF and reinsert cartridge
Picture with poor or no color	Poorly tuned color controls	Adjust color controls on TV or monitor
Sound with excess background noise	Volume too high	Adjust volume
Picture OK, but no sound	Volume too low Audio input of monitor audio/video cable not connected	Adjust volume Connect audio cable to monitor audio input
Sound OK, but no picture	If using external amplifier, connections or settings not correct	Connect sound jack to AUX input on amplifier and select AUX input
Computer "locked" (cursor not flashing)	See "No picture" listings above	See "No picture" listings above
Computer displays garbled symbols on the screen	Computer inadvertently received instructions to disable keyboard; or the printer, cassette or disk drive is in listening mode Overheating	While depressing the RUN/STOP key press RESTORE key twice; or reset the peripherals by turning off and on; or turn the computer off and on Pull plug on power supply and allow to cool down (make sure air flow around power supply is not restricted)

NOTE: Static electricity generated by walking on rugs or carpeting can damage computer equipment. If such conditions exist, be sure to discharge the static electricity by touching a metal object **before** touching the computer or other equipment.

Also, power surges can damage computer equipment or cause data to be lost or garbled. You can avoid this by installing an inexpensive surge protection device, available at your local electronics or hardware store.

the 64C keyboard

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what the keyboard is used for

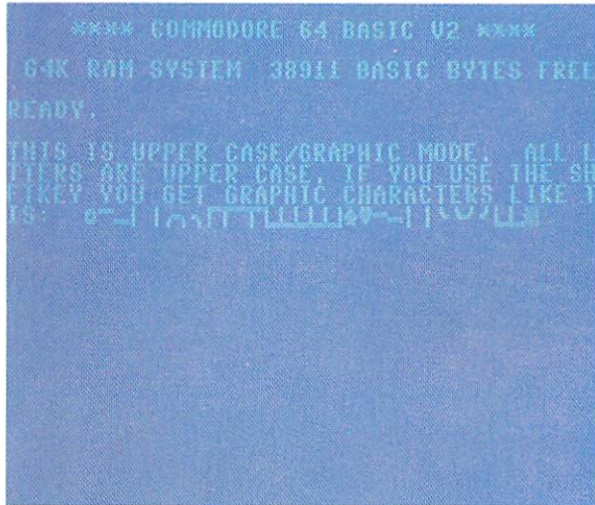
The 64C keyboard is basically a standard typewriter keyboard with some extra keys. You use the keyboard to tell the computer what you want it to do. You also use the keys to reply to any messages or questions the computer displays on the screen. (These messages and questions are sometimes called “screen prompts” or simply “prompts”.)

Most of the letter, number and symbol keys on the Commodore 64C's keyboard look and work like the corresponding key on a standard typewriter. In addition, many of these keys can produce special graphic symbols, which are indicated on the front of the keys. There are also a number of special keys that let the Commodore 64C computer do much more than a typewriter can do. The keyboard illustration shown locates these special keys and tells how you use them.

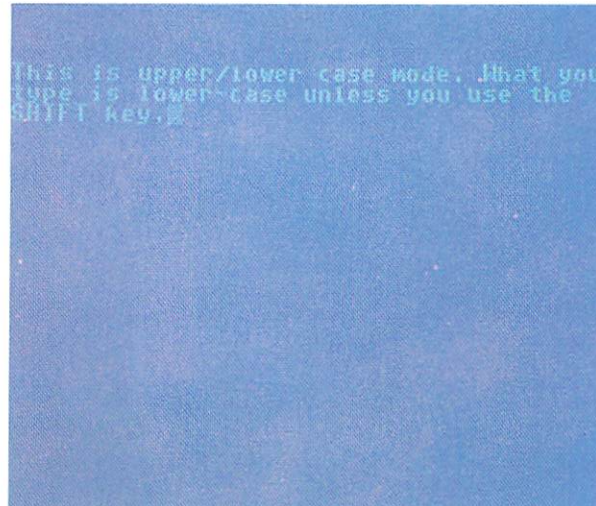
For a detailed description of key functions see the *COMMODORE 64C SYSTEM GUIDE*.

Feel free to experiment at the keyboard. There is little chance that anything you do at the keyboard can cause harm, and you will benefit from the “hands on” experience.





upper case/graphic mode



upper/lower case mode

The 64C keyboard has two typing modes:

- Upper case/graphic mode
- Upper/lower case mode

When you turn on the computer, the keyboard is in the upper case/graphic mode, which means that everything you type is in capital letters.

To switch back and forth between modes, you must press the SHIFT key and the **C** key (the COMMODORE key) at the same time. If you switch to the upper/lower case mode, the keyboard works much like a standard typewriter keyboard. What you type normally appears in lower case; if you want upper case (that is, capital letters) you can hold down the SHIFT key or depress the SHIFT LOCK key.

You do not have to be an accomplished typist to use the computer effectively. You only need to know the general keyboard layout, including the location and function of the special keys, as shown on the keyboard diagram.

the commodore 64C keyboard layout

The 64C keyboard is basically a standard typewriter keyboard with some extra keys. You use the keyboard to tell the computer what you want it to do. You also use the keys to reply to any messages or questions the computer displays on the screen. (These messages and questions are sometimes called “screen prompts” or simply “prompts”.)

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For a detailed description of key functions see the **COMMODORE 64C System Guide**.

CTRL

-Used with other keys, lets you do special tasks called control functions.

-Used with numeric keys 1 to 8, lets you select from a set of eight colors.

RUN/STOP

-Used alone to halt a program that is running.

-Used with the SHIFT key to start a program.

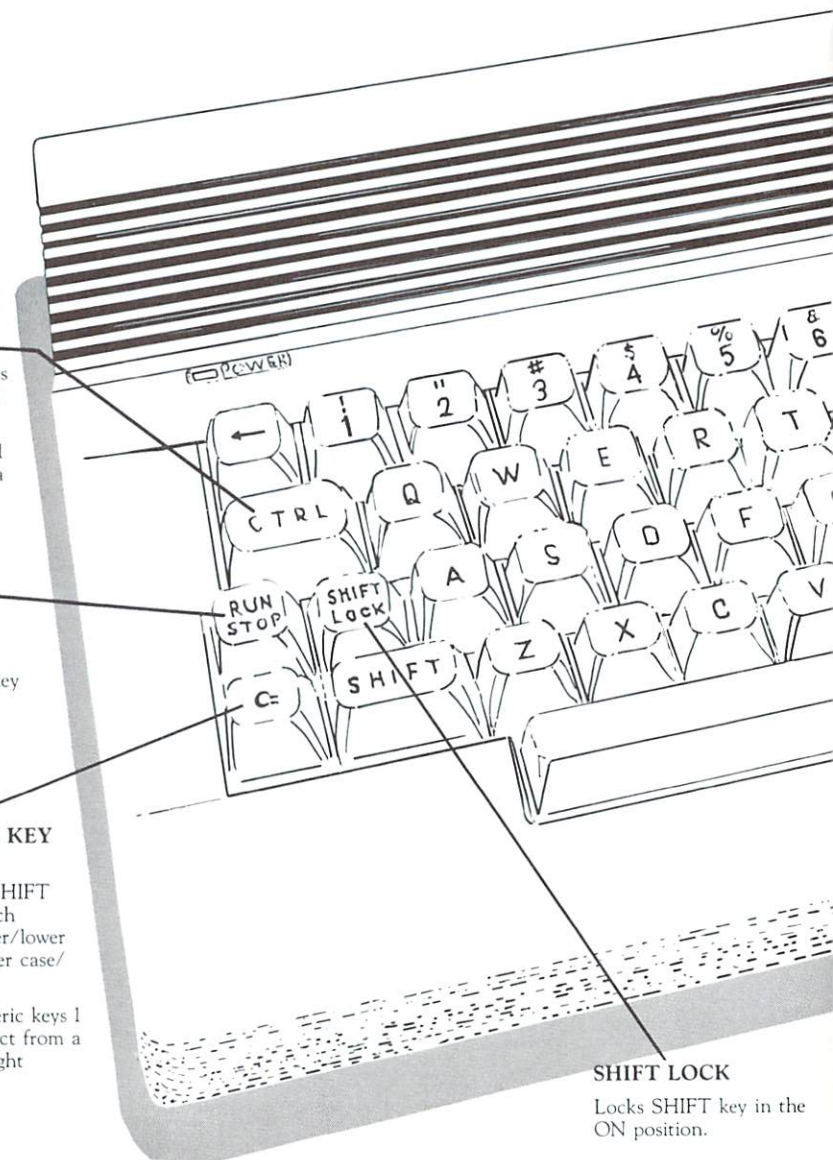
COMMODORE KEY (C)

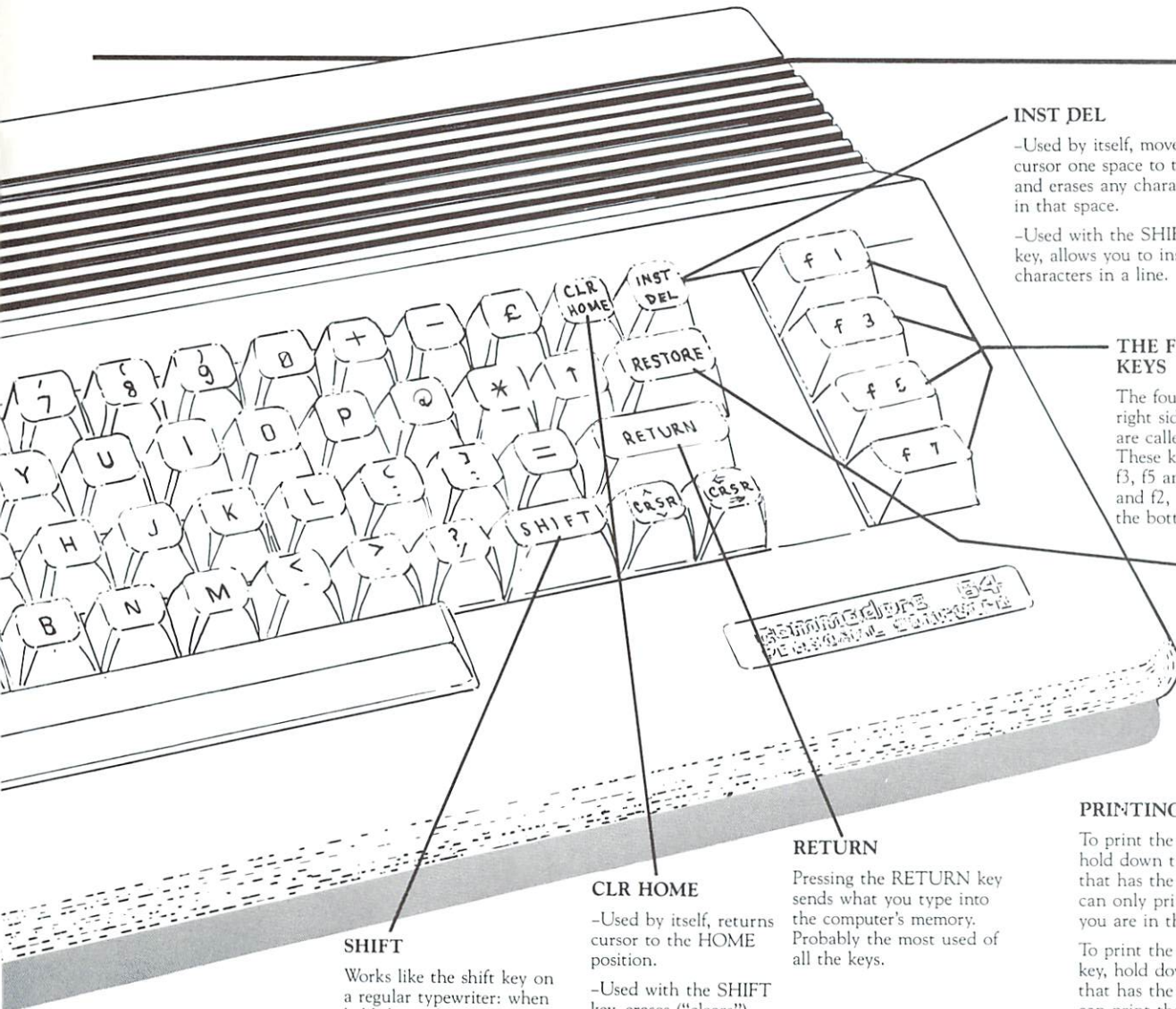
-Used with the SHIFT key, lets you switch between the upper/lower case and the upper case/graphic modes

-Used with numeric keys 1 to 8, lets you select from a different set of eight colors.

SHIFT LOCK

Locks SHIFT key in the ON position.





INST DEL

-Used by itself, moves the cursor one space to the left and erases any character in that space.
-Used with the SHIFT key, allows you to insert characters in a line.

THE FUNCTION KEYS

The four large keys on the right side of the keyboard are called "function" keys. These keys are marked f1, f3, f5 and f7 on the top and f2, f4, f6 and f8 on the bottom.

RESTORE

Used with the RUN/STOP key to return the computer to its normal conditions (also known as the default conditions).

PRINTING GRAPHIC CHARACTERS

To print the graphic symbol on the *right* side of a key, hold down the SHIFT key while you press the key that has the graphic character you want to print. You can only print the right side graphic characters when you are in the upper case/graphic mode.

To print the graphic character on the *left* side of a key, hold down the **C** key while you press the key that has the graphic character you want to print. You can print the left side graphic in either mode.

SHIFT

Works like the shift key on a regular typewriter: when held down, lets you print capital letters, or the top characters on double character keys. Also used with certain other keys to perform special functions.

CLR HOME

-Used by itself, returns cursor to the HOME position.

-Used with the SHIFT key, erases ("clears") everything on the screen and returns the cursor to the HOME position (the upper left corner of the screen).

RETURN

Pressing the RETURN key sends what you type into the computer's memory. Probably the most used of all the keys.

using software

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what software is

Software is a set of instructions (also called a **program**) that tells your computer just what you want it to do. In other words, software is what lets you do things with your computer.

There are two kinds of software:

1. Prepackaged Software—

This is software that is ready for you to use. Prepackaged software is sometimes called “canned” software. You don’t need to know all about “computing” or “programming” to use prepackaged software programs.

There are many thousands of prepackaged or “canned” software programs available to you. Much of this software comes from commercial software companies, but there are also many ready-to-use software programs available in computer magazines or from computer user groups.

2. User-Created Software—

This is software that you yourself make up. To do this you must use a special language, known as a programming language. The Commodore 64C comes with a built-in programming language known as BASIC 2.0; see the *SYSTEM GUIDE* for instructions on programming in BASIC 2.0. There are also many other programming languages available for the Commodore 64C, including LOGO, PILOT, LISP, PASCAL, etc.



Software comes in three kinds of packages or formats:

disk—

Depending on the type of disk drive you are using, these can be either 5¼" or 3½" disks enclosed in a protective envelope.



cartridge—

Software cartridges, about the size of a deck of cards, are used for many business and educational programs, as well as for games.



cassette tape—

Software on tape uses a normal-sized audio tape cassette that contains either standard audio tape or computer digital tape. The cassette is used with a special Commodore tape recorder called a Datassette.

In addition to using prepackaged software programs on disks, cartridges or tapes, you can make your own programs and put them on disks or tapes. You usually cannot put your own programs on a cartridge.

what's in a software package

The main part of a software package consists of the computer program, which is contained on a disk, cartridge or tape. The package usually also includes printed instructions that tell you such things as what the program does, how to load and run it, how to enter information, and what the program output looks like.

The amount of instructions supplied with the software package usually depends on how many things the program can do, and the kind of things it can do. These instructions can be less than a page long, or they can take up a complete manual.



how to load and run software

To use a software package, you must do two things:

—**FIRST**, you must place the software program in your Commodore 64C's **memory**. This is called **loading** the program. In some cases, you **load** the program by using the **LOAD** command, as explained on pages 26, 27, and 28. In other cases, the program is loaded automatically.

—**SECOND**, you must tell the computer to carry out the program's **instructions**. This is called **running** the program. In some cases, you **run** the program by using the **RUN** command. In other cases, the program not only **loads but also runs** automatically.

The following pages tell you how to **LOAD** and **RUN** disk, cartridge and tape software.

loading and running disk software

Here is the procedure you follow to load prepackaged disk softwares or disk software that you have programmed yourself:



1. INSERT THE DISK INTO THE DISK DRIVE.

Make sure the disk is all the way in, but don't force it.



2. PULL DOWN THE LEVER ON THE FRONT OF THE DISK DRIVE.

(Some drives may have a small door or shutter instead of a lever).



3. TYPE:

LOAD "PROGRAM NAME", 8

Here, the words PROGRAM NAME stand for the name of the prepackaged software program that you're using. Note that you must enclose the program name in quotation marks. The number 8 tells the computer that you're loading a disk program.



4. PRESS THE RETURN KEY.

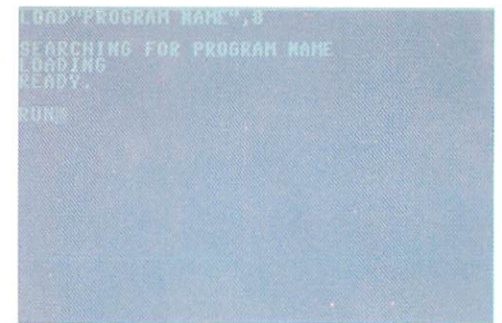
The activity light on the disk drive will go on, and this message will appear on

the screen:

```
SEARCHING FOR PROGRAM  
NAME  
LOADING
```

After a short time the screen will display this message:

```
READY.
```



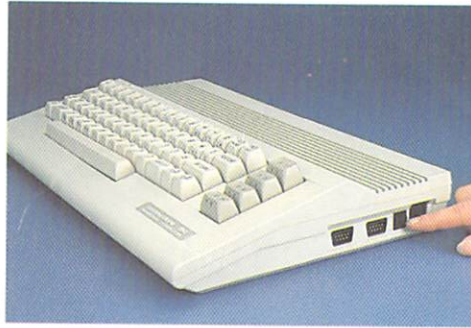
5. TYPE:

```
RUN
```

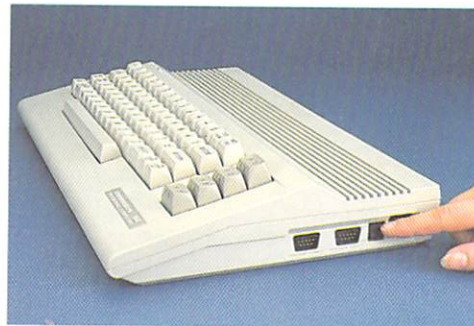
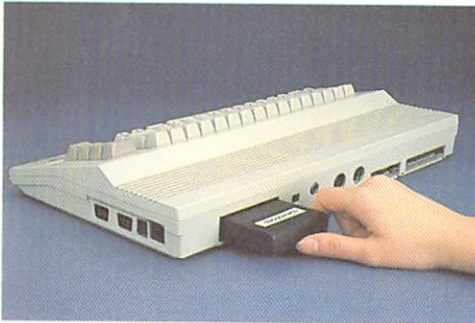
6. PRESS THE RETURN KEY.

In some cases, prepackaged disk software may have its own special way to enter the LOAD command. Also, some commercial software may have an automatic RUN command built into the program. Check the software instructions carefully, especially if you have any problems.

loading cartridge software



CAUTION—YOU MUST TURN OFF YOUR COMMODORE 64C COMPUTER BEFORE YOU INSERT OR REMOVE CARTRIDGES. IF YOU DON'T, YOU MAY DAMAGE THE CARTRIDGE AND THE COMPUTER.



Follow these steps to load cartridge software:

1. TURN OFF THE COMPUTER.

Press the ON/OFF switch on the right side of the computer. The screen display on your monitor or television set should go dark.

2. INSERT THE CARTRIDGE IN THE CARTRIDGE PORT.

The cartridge port is the first port on the right side of the back of the Commodore 64C. This port accepts a cartridge only one way—with the title up. Insert the cartridge firmly but do not force it.

3. TURN ON YOUR COMMODORE 64C.

That's all there is to it. Your cartridge will load automatically at this point. You do not have to use a LOAD command, and usually you do not need to use a RUN command. To use the program, just follow the directions given on the screen, or in any printed instructions that come with the cartridge.

loading cassette tape software

Follow these steps to load prepackaged cassette tapes:



1. PLUG THE DATASSETTE INTO THE CASSETTE PORT.



2. INSERT THE TAPE CASSETTE.

Rewind the tape if necessary.

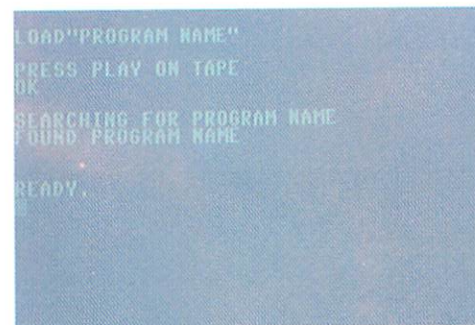


3. TYPE:

LOAD "PROGRAM NAME" 

The screen then displays this message:
PRESS PLAY ON TAPE

The computer searches for the program.



4. WAIT FOR THIS MESSAGE:
FOUND PROGRAM NAME

Here, PROGRAM NAME stands for the name of the software package you are using.



5. PRESS THE  KEY.

The program is LOADED into the computer. (If for some reason you decide at this point that you want to stop the program from LOADING, just press the RUN/STOP key.)

The program will then either start to run by itself, or there will be instructions on the screen telling you what to do. For instance, some programs will tell you to type RUN and press RETURN to start program operation.

NOTE:

Many prepackaged cassette programs may take several minutes to load. You will know that loading is complete when you see the cursor start to blink again, or when instructions telling you how to use the program appear on the screen.

additional sources of information

For more information on using your 64C computer, see the following books:

- *COMMODORE 64C SYSTEM GUIDE*
- *COMMODORE 64 PROGRAMMER'S REFERENCE GUIDE*
- *INTRODUCTION TO BASIC—PARTS, I, II, AND III*


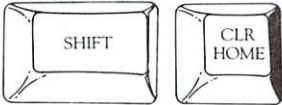
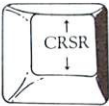
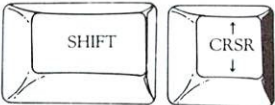

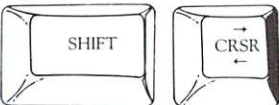

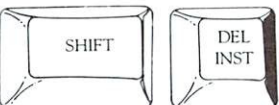
if you have a question...




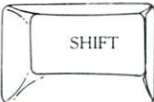



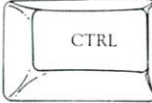

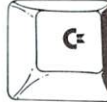

The Commodore Customer Support group is available to help if you have a question or problem. If you can't find the answer to your question in the Commodore documentation, you can call Customer Support at the following number:

(215) 436-4200

If you have what you think is a hardware problem, be sure to call Customer Support. There often is a simple answer to such problems. By calling Customer Support you may be able to avoid taking your equipment in for service.

summary of 64C keyboard functions

key(s)	function
	Place information (e.g., a program line) in the computer's memory
	Clear screen
	Move cursor down
	Move cursor up
	Move cursor right
	Move cursor left
	Delete character(s)
	Insert character(s)

function	key(s)
Stop a program	
Stop a printout	
Switch screen mode	 
Lock SHIFT key	
Load and run a program from tape	 
Change character color	  CTRL plus a numeric key from 1 to 8
Change character color	  CTRL plus a numeric key from 1 to 8

summary of most-used 64C commands

Function	Command Format
Loading a program from disk	LOAD "PROGRAM NAME", 8
Loading a program from tape	LOAD "PROGRAM NAME"
Saving a program to a disk	SAVE "PROGRAM NAME", 8
Saving a program to tape	SAVE "PROGRAM NAME"
Running a program	RUN
Formatting a disk	OPEN 15,8,15:PRINT#15,"N:DISKNAME,ID":CLOSE15
Displaying the lines of a program	LIST
Loading a directory of files on a disk into the computer's memory	LOAD"\$",8
Displaying a disk directory that has been loaded into the computer's memory	LIST
Clearing the computer's memory	NEW

NOTE: For details on any of these commands, see the BASIC 2.0 ENCYCLOPEDIA in Chapter 6 of the Commodore 64C System Guide.

WARNING:

This equipment has been certified to comply with the limits for a Class B computing device, pursuant to subpart J of Part 15 of the Federal Communications Commission's rules, which are designed to provide reasonable protection against radio and television interference in a residential installation. If not installed properly, in strict accordance with the manufacturer's instructions, it may cause such interference. If you suspect interference, you can test this equipment by turning it off and on. If this equipment does cause interference, correct it by doing any of the following:

- Reorient the receiving antenna or AC plug.
- Change the relative positions of the computer and the receiver.
- Plug the computer into a different outlet so the computer and receiver are on different circuits.

CAUTION: Only peripherals with shield-grounded cables (computer input-output devices, terminals, printers, etc.), certified to comply with Class B limits, can be attached to this computer. Operation with non-certified peripherals is likely to result in communications interference.

Your house AC wall receptacle must be a three-pronged type (AC ground). If not, contact an electrician to install the proper receptacle. If a multi-connector box is used to connect the computer and peripherals to AC, the ground must be common to all units.

If necessary, consult your Commodore dealer or an experienced radio-television technician for additional suggestions. You may find the following FCC booklet helpful: "How to Identify and Resolve Radio-TV Interference Problems." The booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, stock no. 004-000-00345-4.

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Commodore BASIC 7.0

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