

# **JOYSTICK SKETCHPAD**

INSTRUCTION GUIDE

**ATARI®**

## Introduction

The programs on side one of this cassette let you create on-screen color graphics with a joystick, any ATARI Home Computer and ATARI BASIC programming language, and then plot them on the ATARI® 1020™ Color Printer/Plotter. You can explore the advanced color graphics capability of the ATARI 1020 directly, without having to write programs.

When the programs on the cassette are transferred to a diskette and used with an optional Disk Drive, you can also save and load graphics you create on files, add to the files, and show them in sequence like a slide show.

The second side of the cassette contains six sample programs to demonstrate the ATARI 1020 Printer/Plotter's graphics capabilities. These are written in ATARI BASIC and can be listed and modified, to study graphics programming.

## Cassette Loading Instructions

NOTE: IF YOUR SYSTEM CONTAINS AN ATARI® 850™ INTERFACE MODULE, BE SURE IT IS TURNED OFF BEFORE THE REST OF THE SYSTEM IS POWERED UP.

1. Start with your computer turned off and the ATARI BASIC cartridge in the slot; the ATARI 1020 should be turned on.
2. Place the cassette in the recorder with the Side 1 label facing up. If the tape is not at the beginning, rewind. Then press the PLAY button on the program recorder.
3. Turn on the computer while holding down its (START) key, then release the (START) key.
4. After you hear a beep, press the (RETURN) key on the computer. The computer will beep again.
5. When the READY prompt appears on the screen type CLOAD and press the (RETURN) key on the computer.
6. When the beep sounds, press the (RETURN) key on the computer.
7. When the next READY prompt appears on the screen, type RUN and press (RETURN).

## How to Draw and Plot

When you run the program a screen will appear with a menu on the right side; then the screen will clear and the menu reappear with a crosshair cursor. Insert a joystick into port #1 to control the crosshair.

The commands to (P)lot on paper with the ATARI 1020 Color Printer/Plotter, and (D)raw on the screen are given by positioning the crosshair over their respective letters in the menu and pressing the fire button on the joystick. These functions can be used simultaneously, but Plot must be selected before drawing any lines. It is also possible to Draw only, by selecting just that command. The menu letters for these functions will change color from red to green to indicate selection. If the program is unable to complete a command the menu letter will change back to red to indicate an error.

To select a color, move the crosshair to one of the four color blocks on the menu and press the fire button. The red, green and blue color blocks correspond to their respective color pens on the ATARI 1020 Color Printer/Plotter, and will expand to a square shape of that color when selected. The yellow color block corresponds to the black color pen. Since the black color pen cannot be represented with a black line on the screen (given that the background color is dark grey), this color block will flash alternately red, green and blue when selected. You can choose which of these colors you prefer to represent the black pen on the screen by pressing the fire button when the desired color appears.

To draw a line, position the crosshair at the point where you wish to begin and press the fire button. Then move the crosshair to the end position and press the fire button again. While you are selecting the end position, the line on the screen will move around the first position selected like a rubber band; after the fire button has been pressed the second time, the line is fixed on the screen and will be plotted on paper. In drawing a new line you may cross the path of a previous line, erasing a portion of it on the screen. The entire previous line still exists, and will appear on the Printer/Plotter. To change colors, return the crosshair to the desired color block and press the fire button.

You can build a variety of shapes and designs by creating a pattern of colored lines. The illusion of a curved line is achieved by a series of short line segments, each at a slight angle. Note that the plotted graphic has straighter lines and smoother detail compared to the screen, especially with diagonal lines.

After nine minutes without an input from the joystick, the screen will automatically change colors to protect your television set. You can return the normal colors by pressing the fire button on the joystick or any key on the computer keyboard. To clear the drawing area, move the crosshair over the letter C in the menu and press the fire button.

The only keys on your computer which effect the program (except when no input has been received for nine minutes or more) are these:

(BREAK) and (SYSTEM RESET). These stop the program and return the computer to BASIC.

(CTRL) 1. This "freezes" the screen and plotter and works like a pause control. To resume normal operation press (CTRL) 1 again.

## Running the Sample Programs

Side 2 of the cassette contains six sample graphics programs which can be individually loaded and run as follows:

1. Start with your computer turned off and the ATARI BASIC cartridge in the slot; the ATARI 1020 should be turned on.
2. Turn on the computer, and place the cassette in the program recorder with the Side 2 label facing up. If the tape is not at the beginning, rewind, then reset the tape counter to zero.
3. Use the FAST FORWARD and STOP buttons on the program recorder and advance the tape to the counter number for the desired program from the chart below.

SAMPLE 002	RANDOM 017	TRIANGLE 032
GRAPH 047	COLOR 061	TRIANG2 070

4. Press the PLAY button on the program recorder.
5. Type CLOAD on the computer keyboard and press (RETURN). When you hear the beep, press (RETURN) again.
6. When the next READY prompt is displayed on the screen, type RUN and press (RETURN). The program will run and create a color printout automatically.

You can list any program on the screen by typing LIST and pressing (RETURN) after it's been loaded. Modifying the program and then observing the printout is a good way to learn about graphics programming.

## Transfer to Diskette

The programs contained on this cassette can be copied to a diskette, allowing disk drive operation. In addition, three features which are not possible using a program recorder become available to disk drive users. These are the SAVE and LOAD commands, which allow completed graphics to be stored and retrieved as a file from a diskette, and the SHOW program which lets you display all stored graphics files in sequence on the screen.

To transfer the programs from cassette to diskette, follow this procedure:

### Side 1

1. Start with your computer turned off and the ATARI BASIC cartridge in the slot.
2. Turn on your disk drive, and insert a formatted diskette containing DOS.
3. Place the cassette in the recorder with the Side 1 label facing up. If the tape is not at the beginning, rewind. Then press the PLAY button on the program recorder.
4. Turn on the computer while holding down its (START) key, then release the (START) key.
5. After you hear a beep, press the (RETURN) key on the computer. The computer will beep again.
6. When the READY prompt appears on the screen, type DOS and press (RETURN).
7. When the DOS menu appears on the screen, type K and press (RETURN).
8. Type AUTORUN.SYS,600,6FF and press (RETURN).
9. When DOS menu appears on the screen, type B and press (RETURN).
10. Type CLOAD and press (RETURN). When you hear a beep, press (RETURN) again.
11. When the next READY prompt appears on the screen, type SAVE "D: DRAW" and press (RETURN).
12. When the next READY prompt appears on the screen, type CLOAD and press (RETURN). When you hear a beep, press (RETURN) again.
13. When the next READY prompt appears on screen, type SAVE "D:SHOW" and press (RETURN).

### Side 2

1. Start with your computer turned off and the ATARI BASIC cartridge in the slot.
2. Turn on your disk drive, and insert a formatted diskette containing DOS.
3. Place the cassette in the recorder with the Side 2 label facing up. If the tape is not at the beginning, rewind, then reset the tape counter to zero.
4. Turn on the computer.
5. Press the PLAY button on the program recorder, and then type CLOAD and press (RETURN) on the computer. When you hear a beep, press (RETURN) again.
6. When the next READY prompt appears on ) screen, type SAVE "D: SAMPLE" and press (RETURN).
7. Repeat steps 5 and 6 for each of the five remaining sample programs, changing the file name for each program according to the formula SAVE "D:\_\_\_\_\_". Use the file names found in step 3 of Running the Sample Programs in this guide, to be consistent.

If you have difficulties, see the DOS 2.0 Reference Manual and the ATARI BASIC Reference Manual. Those users who are unable to obtain a program recorder from a dealer, friend, user's group, or other source can contact ATARI Customer Service at 800-538-8543 (outside California) or 800-672-1494 (within California), to arrange for the exchange of the program cassette for a diskette by mail .

## Using a Disk Drive

To load and run any of these programs using a disk drive, observe the following procedure:

1. Start with your computer turned off, and the BASIC cartridge in the slot. If you own an ATARI 850 Interface Module, make sure it is turned off. The disk drive and the ATARI 1020 Printer/Plotter should be turned on.
2. When the disk drive busy indicator has turned off, insert the program diskette and switch the computer on.
3. When the READY prompt appears on the screen, type RUN "D:DRAW" and press the (RETURN) key.

The same procedure should be followed to run the Sample Programs, except that the file name of each program is substituted in the RUN command (example, RUN "D:SAMPLE").

## Save, Load and Clear

NOTE: THE SAVE FUNCTION MUST BE ENGAGED PRIOR TO DRAWING ANY LINES ON THE SCREEN.

To save to diskette a graphic that you will draw, move the crosshair to the letter S on the menu and press the trigger. The letter will change color from red to green to indicate selection, and the numerals 0 through 9 will cycle on the menu. These indicate the first digit of the file number to be selected for this graphic. When the desired numeral appears, press the fire button. Then as the numerals cycle to indicate the second digit of the file number, press the fire button when the desired numeral appears.

If you have selected a file number which is clear, the numerals on the menu will change color from red to green. You can now select the draw and plot functions and create a graphic. Each time you create approximately 25 lines, the program will save these to the disk, temporarily disabling the joystick. After you have completed the entire graphic, position the crosshair over the letter C on the menu (for Clear) and press the fire button. This clears the screen, saves the remaining lines and closes the file.

If you select a file number which already contains a graphic, the numerals on the menu will change color from red to blue. Any information that you now draw and plot will be added to the existing file. A diskette will be full when there are no free sectors remaining, or has 64 files previously saved.

To load a graphic that has previously been saved and plot it with the printer/plotter, position the crosshair on the letter P in the menu and press the fire button, then select L in the same way. If you only wish to see the graphic on the screen, select only the letter L. The letter(s) will change color from red to green to indicate selection, and the numerals on the menu begin to cycle. Select the file number in the same manner as in the Save function above.

If you have selected a file number which already contains a graphic, the menu numerals will change from red to green. If you select a file number which contains no information, the numerals will disappear from the screen and the Load function will cancel with its menu letter changing back to red. If a disk problem should occur, both the menu letter and the file numbers will change color to red.

## Show

The show program is used to exhibit graphics previously saved on files. To run this program, boot up the program diskette. When the READY prompt appears on the screen, type the command RUN "D:SHOW" and press (RETURN). A screen will appear cycling the file numbers in sequential order from 00 to 99. Each file number which contains a graphic will change color from red to green, and the graphic will appear on the screen and be plotted automatically. If the Printer/Plotter is turned off, the graphic will be shown on the screen only.

Every effort has been made to ensure the accuracy of this instruction guide. However, because we are constantly improving and updating our computer software and hardware, Atari, Inc. is unable to guarantee the accuracy of printed material after the date of publication and disclaims liability for changes, errors or omissions.

