

# MIRAGE-ADB™



**OPERATIONS MANUAL**

## INTRODUCTION

The MIRAGE interface is a two mode input device for controlling cursor movement with a CH Products joystick. It functions as a mouse in either of two modes with Apple II series and Macintosh computers for software that requires mouse input.

## COMPATIBILITY

The MIRAGE—ADB Desktop Bus version interface allows use of a CH Products Apple compatible joystick as a mouse replacement on Apple IIs, Macintosh SE, and Macintosh II computers.

**NOTE:** This version of the MIRAGE interface does not work with the Apple IIe, IIc, Mac 512, or Mac Plus. These computers require the MIRAGE-QUAD version, which is available from CH Products dealers.

## INSTALLATION

1. Turn off your computer.
2. Connect the small round mouse connector to any available desktop bus female connector.
3. Connect a CH Products joystick to the nine pin female connector on the MIRAGE case.
4. Set the Reset/Run selector switch to the run position.
5. Turn on the power to your computer.
6. Consult your computer operating manual about how to set the "Control Panel" mouse parameter. Set the Apple IIs to "NO" under the heading of "Fast Mouse." Set the Macintosh mouse parameter to "Tablet (very slow)."
7. Load your software.
8. Your MIRAGE is ready to go.

Features within a given program are controlled by the program. Consult your program's operating manual concerning the features available to a mouse.

## SETUP AND OPERATION

**NOTE:** The performance of the MIRAGE within a program is affected by the control panel setting. This setting is established when the computer is turned on. The MIRAGE has been designed to function properly at the slowest available settings. For the Apple IIs this is "NO" under the control panel heading of "Fast Mouse," and for the Macintosh "Tablet (very slow)." Your computer manual describes how to make these changes.

**NOTE:** All mouse mode functions require that the joystick be properly centered. See the section concerning ELECTRICAL CENTERING ADJUSTMENTS. After initial adjustment no further adjustments are usually required.

## Electrical Centering Adjustments

Each axis (X and Y) on CH Products joysticks has an independent rotary trim to enable the operator to adjust the electrical center of the joystick. If the cursor drifts or goes to the side or top or bottom of the screen while in the RATE mode, adjust the axis trims with the following procedure:

1. Install the MIRAGE as described in INSTALLATION.
2. Move the ABSOLUTE/RATE selector switch to the rate position. Toggle the RESET/RUN switch to RESET and back to RUN.
3. Press Control-C if the power to your computer is on.
4. Set the joystick so it is in a self-centering mode.
5. Move the joystick to make the cursor visible on the screen.
6. The cursor should remain stationary when the joystick is released to its center position. If it is not, adjust the X and Y rotary trims until the cursor remains stationary.
7. This completes adjustment.

## Absolute Mode Selection

**NOTE:** The performance of the MIRAGE in the ABSOLUTE mode is **SIGNIFICANTLY** affected by the control panel setting. The MIRAGE has been designed to function properly at the slowest available settings. For the Apple IIs this is "NO" under the control panel setting of Fast Mouse, and for the Macintosh "Tablet (very slow)." Your computer manual describes how to make the change to these settings.

**NOTE:** To change modes, you must always: (1) Toggle the RUN/RESET switch to RESET and back to RUN; (2) Press Control-C. This is only necessary if you change modes after the computer is powered up.

To select the Absolute mode, move the Absolute/Rate mode selector switch, switch number 1, to the Absolute position (see Table 1). Consult Table 1 and set switches 2, 3, and 4 to match the computer and screen you are using. Move the Reset/Run selector switch to the Reset position if it is not already there, and then back to the Run position. Press Control-C. Be careful to keep the joystick handle in its centered position while the switch position is being changed. After a few seconds, the MIRAGE is ready to run in the Absolute mode. It may be necessary to move the joystick completely to all four sides of its travel in order to obtain complete cursor motion to all four sides of the screen.

One of several window sizes can be selected for the absolute mode. The window size can be changed at any time by using the following procedure. Select the desired window size with the three Window/Rate selector switches, switches number 2, 3, and 4. Then toggle the Reset/Run mode selector switch to the Reset position and then back to the Run position. Press Control-C. Keep the joystick in the centered position while the Reset/Run selector switch is being moved to the Run position.

If you select a window size that is larger than the screen size you are using, cursor motion would always be proportional to stick position. If however, you select a window size that is smaller than your screen size, cursor motion would be proportional to stick position within a window which is smaller than the screen. When the cursor reaches the window edge, the window is moved in that direction. In the absolute mode, the cursor returns to the approximate center of the mouse window when the joystick is released to center. This would also be the center of the screen if the window size and screen size are the same, but could be different if the window and screen sizes are different.

#### **Rate Mode Selection**

**NOTE:** To change modes, you must always: (1) Toggle the RUN/RESET switch to RESET and back to RUN; (2) Press Control-C. This is only necessary if you change modes after the computer is powered up.

To select the Rate mode, move the Absolute/Rate mode selector switch, switch number 1, to the Rate position (see Table 1). Move the Reset/Run selector switch to the Reset position, and then back to the Run position. Press Control-C. Keep the joystick handle in its centered position while the switch position is being changed.

In the rate mode, the cursor position will move at a rate that is proportional to the amount of deflection of the joystick. The cursor will also move in the direction of deflection of the joystick handle. When the handle is returned to its center position, motion of the cursor will stop.

The maximum speed of cursor motion can be set at the time the rate mode is selected or at any other time. One of six maximum rates can be selected for the rate mode. Select the desired maximum rates with the three Window/Rate selector switches, switches number 2, 3, and 4. Then toggle the Reset/Run mode selector switch to the Reset and then back to the Run position. Press Control-C. Keep the joystick in the centered position while the Reset/Run selector switch is being moved to the Run position.

#### **Trouble Shooting**

1. Center the joystick using the electrical centering procedure.
2. Check to see that the connectors are securely connected.
3. Be sure the Reset/Run selector switch is in the Run position.
4. Use the MIRAGE with software with which you have previously used a mouse.
5. Be sure that all devices you wish to connect to the desktop bus are connected before the computer power is turned on.
6. If you change modes while the computer's power is on, press Control-C to clear the Apple desktop bus.
7. If the above suggestions fail to clear up the problem, turn the power to the computer off and restart the computer after about a ten second delay, and retry your software.

#### **Pushbutton Function**

When using the MIRAGE, all buttons function as the mouse button.

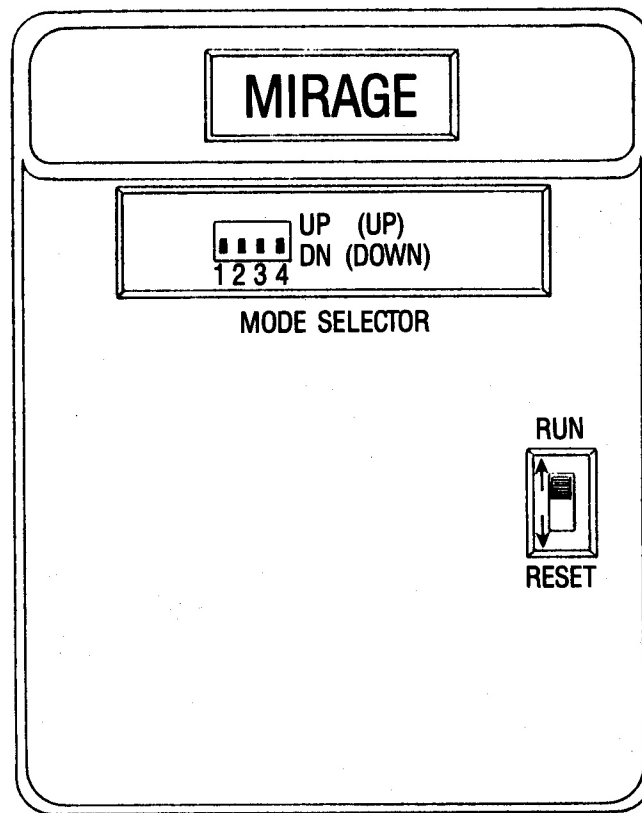


Figure 1

**TABLE 1  
MODE SWITCH SETTINGS**

MODE	SWITCHES			
	1	2	3	4
RATE OUTPUT (FAST)	UP	DOWN	DOWN	DOWN
RATE OUTPUT (MED. FAST)	UP	DOWN	DOWN	UP
RATE OUTPUT (MEDIUM)	UP	DOWN	UP	DOWN
RATE OUTPUT (MED. SLOW)	UP	DOWN	UP	UP
RATE OUTPUT (SLOW)	UP	UP	DOWN	DOWN
RATE OUTPUT (VERY SLOW)	UP	UP	DOWN	UP
ABSOLUTE (Apple IIgs 320 x 200)	DOWN	DOWN	DOWN	DOWN
ABSOLUTE (MAC SE 512 x 342)	DOWN	DOWN	DOWN	UP
ABSOLUTE (Apple IIgs 640 x 200)	DOWN	DOWN	UP	DOWN
ABSOLUTE (MAC II)	DOWN	DOWN	UP	UP
ABSOLUTE (128 x 128)	DOWN	UP	DOWN	DOWN

**SPECIFICATIONS**

SUPPLY VOLTAGE: +5 VOLTS  $\pm$  10%

CURRENT: 100 MA

OPERATING MODES: ABSOLUTE

RATE (selectable speeds)

CONNECTOR PIN ASSIGNMENTS (9-Pin female connector)		DESKTOP BUS MOUSE CONNECTOR PINOUT	
PIN #	FUNCTION	PIN NO.	SIGNAL NAME
1	BUTTON 2	1	DATA
2	+ 5 VOLTS	2	N.C.
3	SYSTEM GROUND	3	POWER (V +)
4	NONE	4	RETURN
5	X-AXIS		
6	NONE		
7	BUTTON 1		
8	Y-AXIS		
9	NONE		

Apple IIc, IIe, IIgs, and Macintosh are trademarks of Apple Computer, Inc.

**RADIO AND TELEVISION INTERFERENCE**

This equipment generates and uses radio frequency energy. If it is not installed and used properly, it may cause interference to radio and television reception.

This equipment has been tested and complies with the limits for a Class B computing device in accordance with the specifications of Subpart J, Part 15 of FCC regulations. These regulations are designed to provide reasonable protection against interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If you suspect this device is causing unreasonable interference, remove it from the computer system in order to isolate the problem.

The user is encouraged to try to reduce the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet, so the computer and receiver are on different branch circuits.

The user may find the following book prepared by the Federal Communications Commission helpful: *HOW TO IDENTIFY AND RESOLVE RADIO-TV INTERFERENCE PROBLEMS*. This booklet is available from the US Government Printing Office, Washington, DC 20402, stock number 004-000-003454.

## **CH PRODUCTS ONE YEAR WARRANTY**

CH Products MIRAGE is warranted to the original purchaser to be free from defects in materials and workmanship for a period of one year from the date of purchase. During the warranty period CH Products will, at its option, repair or replace, at no charge, any component which is determined to be defective.

The liability under this warranty is limited to the repair of and/or replacement of the defect or defective part at our factory and does not include shipping expenses.

To obtain warranty services, send the MIRAGE, postage prepaid, with a check for \$4.00 to cover shipping and handling, together with a dated proof of purchase to:

**CH Products**  
Customer Service  
1225 Stone Drive  
San Marcos, CA 92069

The warranty does not apply if, in the opinion of CH Products, the MIRAGE has been damaged by accident, abuse, improper usage, or as a result of service or modification by other than CH Products.

"NO OTHER WARRANTIES ARE EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. CH PRODUCTS IS NOT RESPONSIBLE FOR CONSEQUENTIAL DAMAGES." Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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