

USING
THE HALF-LENGTH MULTI-VIDEO BOARD

Part Number 5026-D

Kaypro Journal

KAYPRO (™) is a registered trademark of the Kaypro Corporation, 533 Solana Beach, CA 92075.

IBM is a registered trademark of International Business Machine, Inc.

Copyright May 1986 Kaypro Corporation All Rights Reserved.

READ ME FIRST

The Half-Length Multi-Video Board that comes in the KAYPRO PC is set up in the factory for the *color emulation mode*.

Read this document carefully. It will explain these changes, and tell you how to use this new board.

Half-Length Multi-Video Board

The KAYPRO PC Half-Length Multi-Video Board has powerful and complex video characteristics. It is one of the systems that allows you to use either color or monochrome monitors, or to make one emulate the other.

The Kaypro Color Monitor

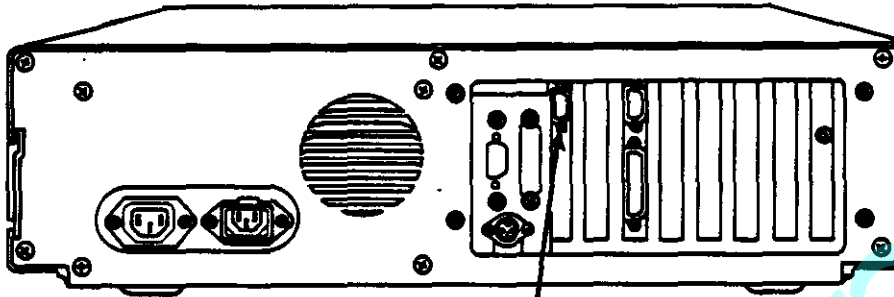
The Kaypro Color Monitor is an RGB color monitor that has been designed and selected to work with all Kaypro computers. If you have purchased one of these monitors, it should serve you in a trouble-free manner. Read the booklet that came with it for full particulars on its capabilities. If you have any trouble with your color monitor, consult with your dealer.

The Kaypro Monochrome Monitor

The Kaypro Monochrome Monitor is a *green* video monitor, and it is functionally identical to the IBM Monochrome Monitor. It displays high resolution text in twenty-five rows and eighty columns. Normally the monitor cannot display any color graphics--the graphics used in most of today's popular software. But the half-length video board has the capability of *emulating* color graphics on your monochrome monitor by presenting them in varying shades of green.

THE HALF-LENGTH MULTI-VIDEO CARD

All of the video circuitry in the KAYPRO PC is found on the half-length video board. Its full name is the Kaypro Half-Length Multi-Video Board. Normally, the only part of this board that you will see is the video connector on the rear panel of the computer. It is a female DB-9 connector. *Female* means it has receptors instead pins. *DB-9* means it uses nine pins.



Video Connector

The video board in the KAYPRO PC computers is now being shipped from the factory set for the *color emulation* mode. If you are using a monitor other than the Kaypro Monochrome Monitor, you may need to reset the board. Check with your dealer before you do this. He or she may have already reset the video board for your monitor.

There is no single standard for using video with microcomputers. One system may use only monochrome monitors, while another uses only color, and some may use both types--while still others have the capability to make one emulate the other. This varying use of video in microcomputers is responsible for confusing many new computer users.

This Kaypro Half-Length Multi-Video board has the video characteristics of:

1. the IBM Color/Graphics Adapter
2. the IBM Monochrome/Printer Adapter
3. the Plantronics ColorPlus Adapter
4. plus its own special Color Graphics Emulation Mode.

The Kaypro Half-Length Multi-Video Board imitates these other boards by functioning in one of three modes:

1. Emulation mode
2. Monochrome mode
3. Color Graphics Mode

Each of those modes is described in detail on the following pages.

Emulation Mode

The half-length video board has the ability to *emulate* high resolution color graphics on your *monochrome monitor*. It does this by processing the color signals generated by the software, and sending them to the monitor in varying shades of green or amber (depending on your monitor). Thus it will run all IBM Color/Graphics software, without modification.

In the emulation mode, the Kaypro Half-Length Multi-Video will function *exactly like the IBM Color Graphics adapter*. Because of this, you should configure your software for the IBM Color/Graphics Adapter.

For example: When you are setting up the Lotus 123 (Release 2) *spread sheet program* you must run the *Lotus Install* program. At that time, you should **choose** *The IBM Color Board*.

- No special software is required to use the Emulation mode. Emulation mode will display the *high resolution monochrome character set*--letters and numbers--and will also do full screen graphics.

Monochrome Mode

The *monochrome mode* displays the high resolution *monochrome character set* on a monochrome monitor. The Kaypro video board will function *exactly like an IBM Monochrome/Printer Adapter*--excluding the printer capability. Onscreen text will be clear.

- Graphics software written for the IBM Color/Graphics Adapter will not run under this mode. Nor will it run on the IBM Monochrome Board.

Color/Graphics Mode

In this mode, the Kaypro video board will run all IBM Color/Graphics programs as well as graphics software designed for use with the Plantronics ColorPlus Adapter.

With an RGB, or composite color monitor, the Kaypro Half-Length Multi-Video board will function *exactly like an IBM Color Graphics adapter*. You will have medium or high resolution color graphics with the RGB monitor and low resolution color graphics with the composite monitor.

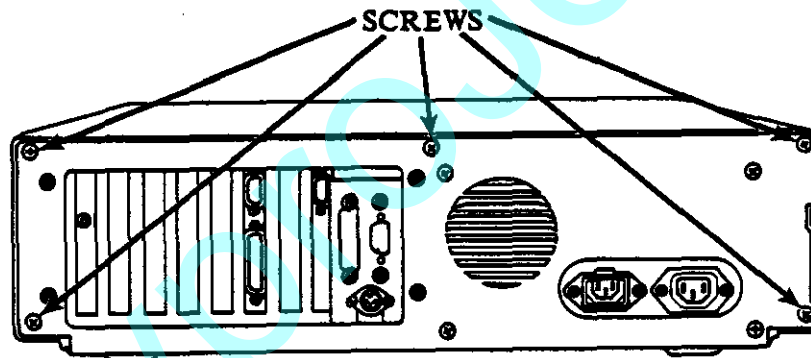
Switch Settings

To use a monitor other than the Kaypro Monochrome Monitor, you may need to change the *DIP* switches on the half-length video board. This will match the board to the kind of monitor you are using. The *DIP* switches determine the video signal the board will send automatically when the computer is turned on.

Removing the Cover

To access the *DIP* switches on this circuit board, you must first remove the computer cover.

1. For a work surface, you need a solid table that gives you easy access to both the front and rear panels of the computer. You will need a #2 phillips screwdriver. Have a small dish or cup ready to hold the screws you will take out of the back panel.
2. Turn off the computer and unplug it from the power outlet.
3. Disconnect monitor and remove it.
4. Disconnect all cables connected to the computer.
5. Place the computer on the work surface.
6. Remove the five screws that hold the rear panel in place.



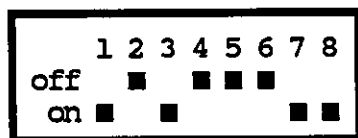
7. Standing in front of the computer, carefully slide the cover toward you. There is a flat cable lying just under the cover. This is the disk drives interface cable. Make sure that you do not snag this cable with the screw retainer tab which protrudes from the bottom center of the cover. Slide the cover forward until it will slide no further. Then push it back approximately 1/2 inch, pivot the front end upward, and lift the cover away from the chassis. Put the cover aside until you need it again.

CAUTION: To avoid damaging the computer's internal circuitry you must dissipate any static electric charge that you might have. Do this by touching any grounded metal surface: a metal lamp stand or a metal door frame will serve.

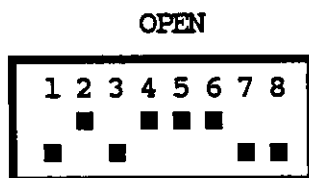
Changing the Video Switch Settings

The Half-Length Multi-Video Board is five inches long and is located directly behind the metal drive housing.

The DIP switch block on the Kaypro Half-Length Multi-Video Board is located on the top edge of the board, near the juncture of the board and the slot cover. The block will look something like this:



Or it will look like this:



These two switch blocks function exactly the same. They are simply labeled differently. When reading the diagram below, remember:

OPEN = OFF

CLOSED = ON

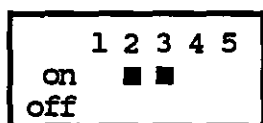
Change the switch settings according to the chart below:

monitor	switch settings							
	1	2	3	4	5	6	7	8
Monochrome	ON	OFF	ON	OFF	OFF	OFF	ON	ON
Color(CGA)	OFF	ON	OFF	OFF	ON	OFF	ON	ON
Composite*	OFF	ON	OFF	ON	ON	OFF	ON	ON
Composite**	OFF	ON	OFF	ON	OFF	OFF	ON	ON
Emulation	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
	* Color ** Monochrome							

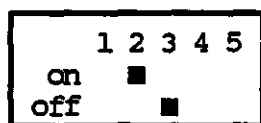
Changing Processor Board Switches

The KAYPRO PC microprocessor board is the full-length board on the leftmost side of the bus board from the disk drives. If you have changed the *DIP* switch settings on the video board, then you must change the *DIP* switch settings on the processor board.

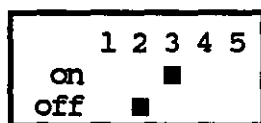
On the upper left corner of the processor board, there is a 5-position *DIP* switch. Its position on the board will be labeled SW1. Below are representations of this switch showing the four different ways to configure the processor board for video.



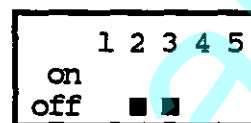
No video
board



40x25 color
video board



80x25 color
video board



80x25 mono-
chrome board

Running and Using Vswitch

To toggle back and forth between the monochrome mode and the color emulation mode you must use Kaypro's utility program *VSWITCH.COM*.

VSWITCH.COM is a video mode switching program. The KAYPRO PC Half-Length Multi-Video Board can make your monochrome monitor emulate color graphics by displaying varying shades of green or amber. This makes your monitor function effectively as two monitors in one.

VSWITCH is a resident memory program. Once you run *VSWITCH.COM*, it is held waiting in Random Access Memory until you command it from the keyboard.

If you have a KAYPRO computer with a hard drive installed from the factory, *VSWITCH.COM* will be automatically loaded every time you boot up your computer. This is done by the *AUTOEXEC.BAT* file installed on your system disk. If you do not wish *VSWITCH.COM* to autoload in this way, you must modify your *AUTOEXEC.BAT* file.

If you do not have a factory-installed hard drive system, then you must load this program from a floppy disk to use it. To use *VSWITCH*, make sure the file *VSWITCH.COM* is on the floppy disk you are working with. If it is not, you can copy it from your DOS floppy disk. You may also install this program with your *autoexec.bat* file. At the system prompt:

Type: *VSWITCH.COM*
Press the ENTER key.

The program *VSWITCH.COM* will run, you will see a display of its version number and the system prompt will return.

TO SWITCH TO MONOCHROME MODE:

Hold down the CTRL and ALT keys, then press the *greater than* (>) key.

TO SWITCH TO COLOR EMULATION MODE:

Hold down the CTRL and ALT keys, then press the *less than* (<) key.

NOTE: *VSWITCH* is a resident memory program. Once it has been run, it will *wait* in memory for you to use it. But all resident memory programs are erased when the computer is reset or rebooted. Then the resident memory program will have to be reloaded. If you want *VSWITCH* to load automatically on any boot disk, then add the command to the autoexec.bat file on that boot disk.