

1.0 INTRODUCTION

The < Micro EGA > is a high-resolution, advanced graphics adapter designed for the IBM PC, PC/XT and PC/AT series of computers, and is fully compatible with the IBM Enhanced Graphics Adapter (EGA).

The < Micro EGA > also includes hardware to be fully compatible with the IBM Color Graphics Adapter (CGA), IBM Monochrome Display Adapter (MDA) and Hercules Graphics Card (HGC).

Features

- EGA hardware and software compatible
- CGA hardware and software compatible
- MDA hardware and software compatible
- HERCULES Hardware and Software compatible
- Built-in automode switch logic
- All video modes are software-switchable and supported on EGA-type monitors
- 4-plane bit mapped graphics capability
- Soft scrolls, pans and windows through a 1-Meg pel memory
- Supports 256K bytes of memory
- Light pen interface

2.0 COMPUTER AND MONITOR COMPATIBILITY

2.1 Computer System

2.1.1 System Requirements

The < Micro EGA > can be placed in any open expansion slot of the IBM PC, PC/XT, PC/AT or other micro-computer that is 100% IBM PC-compatible. The only exception is slot #8 for the IBM PC. Refer to the IBM PC Guide to Operations before using slot #8.

2.1.2 System Verification (BIOS ROM)

Check your system! If you have an IBM PC manufactured prior to April 1983, you may not be able to properly boot up and operate the < Micro EGA >. If so, you need to update your system before you install the < Micro EGA >. Check with your dealer for details on how to do this.

If you own a PC-compatible system, check with your dealer. Make sure your system is compatible with the IBM EGA.

2.2 Monitors

Only ONE video adapter capable of displaying color images can be installed in your system bus at one time. NEVER install more than one CGA, EGA and/or < Micro EGA > at the same time.

Monochrome adapters may be used in your PC with the < Micro EGA >. However, this prevents the < Micro EGA > from being used in any monochrome mode.

Following are the monitors compatible with your < Micro EGA >; for those monitors not listed by brand name and model, it is suggested that you check the compatibility specifications chart below before selecting your monitor:

2.2.1 Monochrome Monitors

- a) IBM monochrome monitor
- b) Compatible IBM monochrome monitor
(See Compatibility Specifications Chart below)

2.2.2 Color Monitors

- a) IBM color monitor
- b) Compatible IBM color monitor
(See Compatibility Specifications Chart below)

2.2.3 Enhanced Color Monitors

- a) IBM enhanced color monitor
- b) Compatible IBM enhanced color monitor
(See Compatibility Specifications Chart below)

2.2.4 Variable Frequency Monitors

- a) Magnavox Multimode
- b) Mitsubishi AUM 1371A
- c) NEC MultiSync
- d) Sony Multiscan
- e) Taxan 770
- f) other variable frequency monitors
(See Compatibility Specifications Chart below)

COMPATIBILITY SPECIFICATIONS CHART

	Monochrome Display (TTL)	Color Display (RGB)	Enhanced Color Display (ECD)	Variable Frequency Display (ECD Hi Res)
Horizontal Scan Rate	18.432KHz	15.750KHz	21.850KHz	15.5-35KHz
Vertical Scan Rate	50Hz	60Hz	60Hz	50-70Hz
Video Band Width	16.275MHz	14.318MHz	16.257MHz	30MHz or higher
Maximum Resolution	720x350	640x200	640x350	800x600

3.0 INSTALLATION

To install the < Micro EGA >, follow the steps below:

Step 1: Removing the cover

- Make sure your machine is turned off and unplugged.
- Turn off power to any external equipment, such as your monitor, printer, keyboard, etc.
- Disconnect all cables attached to the rear of your PC.
- Unscrew the cover; there should be five mounting screws holding it in place.
- Carefully slide the cover forward until it comes off. (See Figure 1)

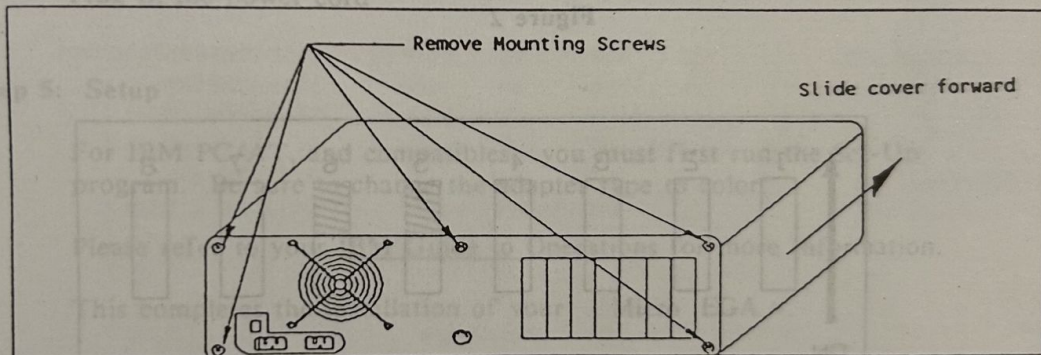


Figure 1

Step 2: Configuring the computer

- For PC and PC/XT users: Set switches 5 and 6 on your Switch Block 1 to ON. (See Figures 2 and 3)
- For PC/AT users: Push the Color/Monochrome Switch toward the rear of your machine. (See Figure 4)

CAUTION:
DO NOT CHANGE ANY OTHER SWITCHES!

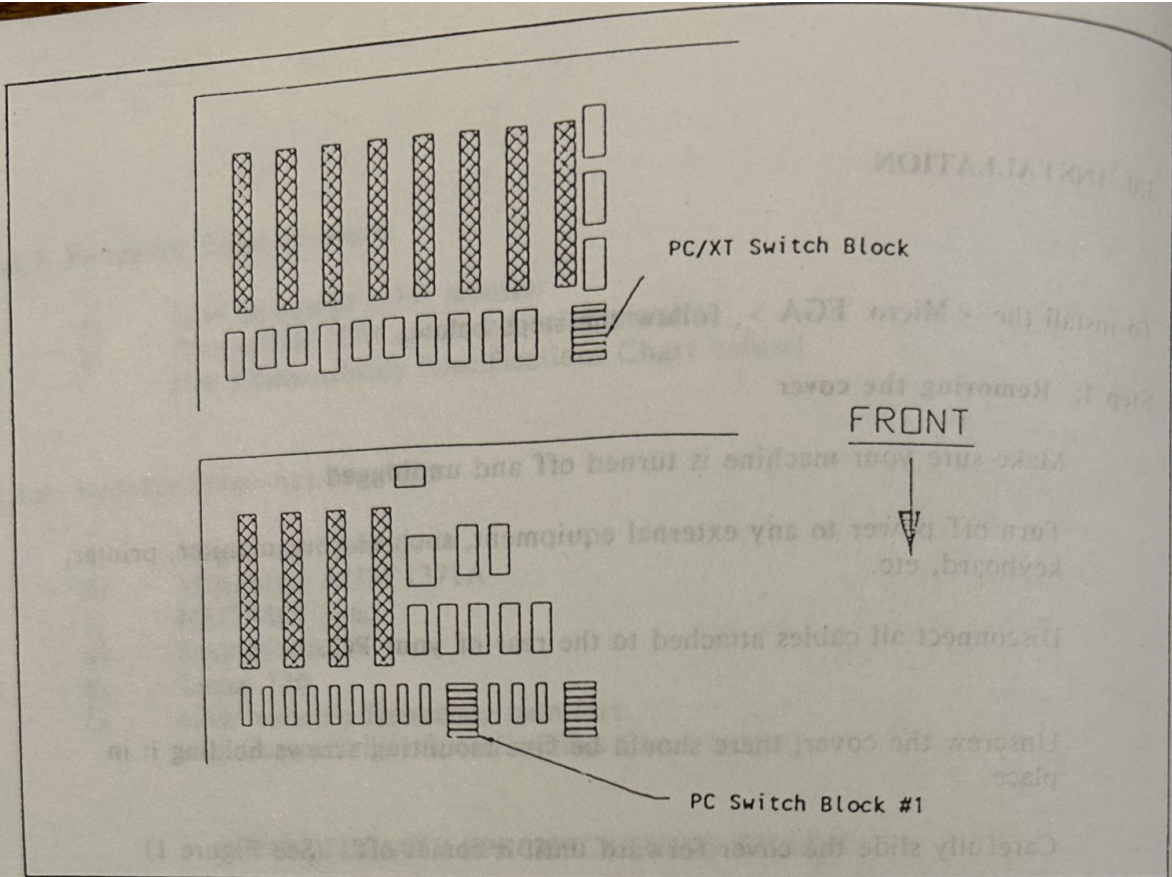


Figure 2

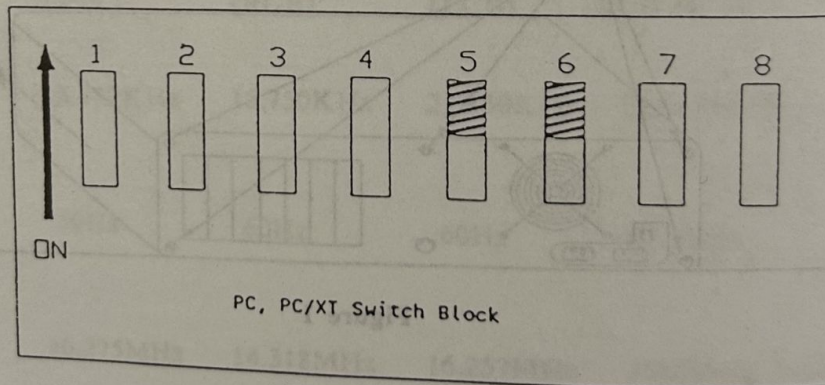


Figure 3

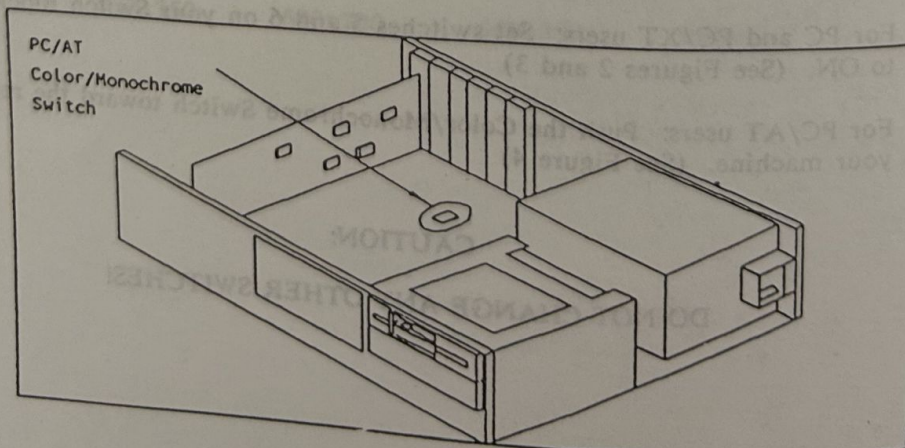


Figure 4

Step 3: Installing the < Micro EGA >

- Set SW1, P1 and P3 according to the tables below. (See Figure 5 for location of SW1, P1 and P3)
- Firmly press the < Micro EGA > into the selected expansion slot
- If you have a light pen, install it on connector P2, according to the manufacturer's instructions

- NOTE:**
1. Pin 2, on the connector, may need to be cut before connecting some light pens
 2. Light pens will not work on monochrome monitors due to their high persistence phosphors

Step 4: Replacing the cover

- Slide the cover back on
- Tighten the mounting screws
- Replace all cables and cords
- Plug in the power cord

Step 5: Setup

- For IBM PC/AT, and compatibles, you must first run the Set-Up program. Be sure to change the adapter type to color.
- Please refer to your IBM Guide to Operations for more information.

This completes the installation of your < Micro EGA >.

3.1 SW1 Switch Settings

Single Monitor Systems

Monitor	Switch/Setting			
	1	2	3	4
RGB 40 x 25	on	off	off	on
RGB 80 x 25	off	off	off	on
ECD Hi Resolution	off	on	on	off
ECD Low Resolution	on	on	on	off
Monochrome	off	off	on	off

Two Monitor Systems (Primary monitor attached to < Micro EGA >)

Primary Monitor	Switch/Setting				Secondary Monitor
	1	2	3	4	
ECD Hi Resolution	off	on	on	off	xx Monochrome
ECD Low Resolution	on	on	on	off	Monochrome
RGB 80 x 25	off	off	off	on	Monochrome
RGB 40 x 25	on	off	off	on	Monochrome
Monochrome	off	off	on	off	RGB 80 x 25
Monochrome	on	off	on	off	RGB 40 x 25

Two Monitor Systems (Secondary monitor attached to < Micro EGA >)

Primary Monitor	Switch/Setting				Secondary Monitor
	1	2	3	4	
RGB 80 x 25	off	on	off	on	Monochrome
RGB 40 x 25	on	on	off	on	Monochrome
Monochrome	off	off	on	on	ECD Hi Resolution
Monochrome	on	off	on	on	ECD Low Resolution
Monochrome	off	on	on	on	RGB 80 x 25
Monochrome	on	on	on	on	RGB 40 x 80

NOTE:

UP is OFF, DOWN is ON
xx - indicates factory settings

Power On Mode	Monitor Type	Switch/Setting	
		5	6
EGA	All xx	on	on
MDA/HERC	ECD/Monochrome	off	on
CGA	ECD/RGB	on	off
		Switch/Setting	
		7	8
Reserved for future use	xx	off	off

NOTE: xx - indicates factory settings

3.2 Jumper Settings

Jumper		Setting Environment	
P1	1 & 2	On	xx ECD monitor attached
P1	2 & 3	On	RGB or mono monitor attached
P3	1 & 2	On	xx Normal operation
P3	2 & 3	On	Select port 2XX
P3	4 & 5	On	xx When NOT using Automode
P3	5 & 6	On	When using Automode
P3	7 & 8	On	When using Slot 8 in an IBM PC
P3	8 & 9	On	xx When NOT using Slot 8
P3	10 & 11	On	When using Automode
P3	11 & 12	On	xx When NOT using Automode

NOTE: xx - indicates factory settings

3.3 < Micro EGA > Jumpers, Switch and Connectors

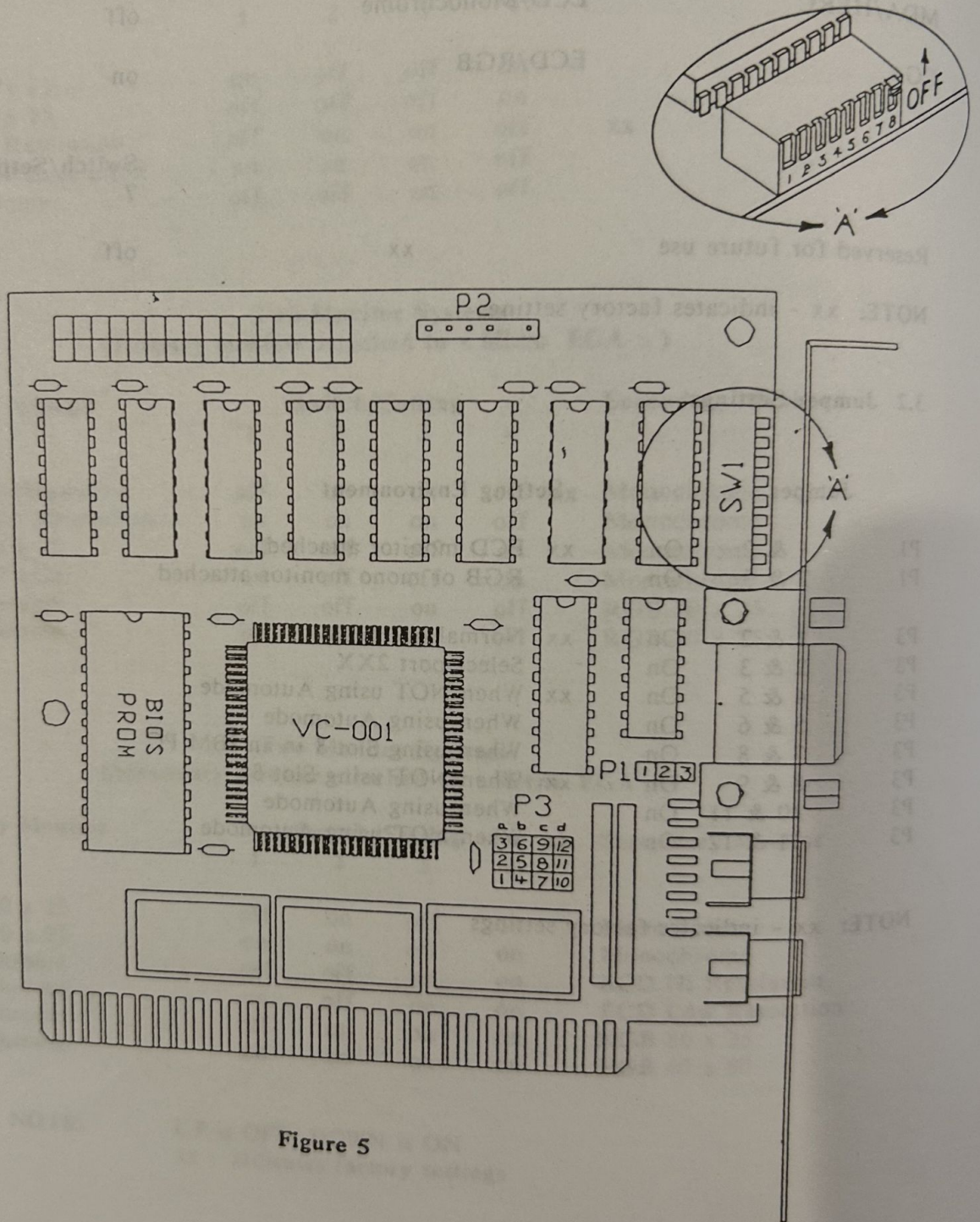


Figure 5

3.4 Trouble Shooting

3.4.1 Common Problems

Listed below are common areas often missed when first installing a new board; if you run into problems:

- Make sure the **SWITCH** on the IBM PC/AT is pushed to the rear of the computer before installing your board.
- Make sure the **SWITCH BLOCK** on the IBM PC and IBM PC/XT have been properly set before installing your **< Micro EGA >**.
- Double-check **SW1** on your **< Micro EGA >**. Make sure all the switches are in the correct positions.
- Double-check that the jumpers on **P1** and **P3** are covering the correct pins.
- Check that only **ONE** color adapter board is installed.

WARNING

Improper installation or configuration of the **< Micro EGA >** may result in:

- Inconsistent operation
- Damage to the **< Micro EGA >**
- Damage to the personal computer

3.4.2 Illegal **< Micro EGA >** configuration:

- Illegal switch configurations are indicated by two beeps; EGA is assumed to be the default mode.

3.4.3 Illegal conditions:

- **CGA MODE:** **< Micro EGA >** requires color display, not Monochrome.
- **MDA MODE:** **< Micro EGA >** requires Enhanced Color Display, or MDA/HERCULES Board detected.

4.0 OPERATION MODES

4.1 Overview

The following tables show the video modes and resolutions available with your <Micro EGA >:

4.2 EGA Mode:

Mode	Type	Colors	Format	Font Size	Max. Pgs.	Vert. Freq.	Resolution
0, 1	text	16/64	40x25	8x8	8	60 Hz	320x200
0, 1	text	16/64	40x25	8x14	8	60 Hz	320x350
2, 3	text	16/64	80x25	8x8	8	60 Hz	640x200
2, 3	text	16/64	80x25	8x14	8	60 Hz	640x350
4, 5	text	4/64	40x25	8x8	1	60 Hz	320x200
6	graphics	2/64	80x25	8x8	1	60 Hz	640x200
7	text	--	80x25	9x14	8	60 Hz	720x350
D	graphics	16/64	40x25	8x8	8	60 Hz	320x200
E	graphics	16/64	80x25	8x8	4	60 Hz	640x200
F	graphics	--	80x25	8x14	2	60 Hz	640x350
10	graphics	16/64	80x25	8x14	2	60 Hz	640x350

NOTE: All modes (except 7 and F) require an ECD or variable frequency monitor. Modes 7 and F require a TTL monochrome monitor.

4.3 CGA Mode:

Mode	Type	Colors	Format	Font Size	Max. Pgs.	Vert. Freq.	Resolution
0, 1	text	16/64	40x25	8x8	8	60 Hz	320x200
2, 3	text	16/64	80x25	8x8	8	60 Hz	640x200
4, 5	graphics	4/64	40x25	8x8	1	60 Hz	320x200
6	graphics	2/64	80x25	8x8	1	60 Hz	640x200

NOTE: When in CGA mode, a composite color, RGB or variable frequency monitor is required.

4.4 MDA Mode:

Mode	Type	Colors	Format	Font Size	Max. Pgs.	Vert. Freq.	Res
7	text	--	80x25	9x14	8	50 Hz	720x350

NOTE: To use HERCULES graphics, you must first be in mode 7, then follow instructions in HERCULES Manual.

4.5 EGA High Resolution Mode:

Mode	Type	Colors	Format	Clock		Resolution
				Freq.	Monitor	
10	graphics	16/64	80x40	24 MHz	ECD Hi Res	640x480
10	graphics	16/64	96x46	24 MHz	ECD Hi Res	752x420
10	graphics	16/64	100x42	34 MHz	ECD Hi Res	800x600
10	graphics	16/64	120x38	24 MHz	ECD	960x350
2, 3	text	16/64	120x38	24 MHz	ECD	960x350
10	graphics	16/64	132x43	24 MHz	ECD Hi Res	1056x350
2, 3	text	16/64	132x43	34 MHz	ECD Hi Res	1056x350

5.0 SYSTEM SOFTWARE

The following program utilities are on the diskette that comes with your <Micro EGA > ; they can be run from the utility diskette or copied to another directory:

5.1 Mode-Switching Utilities

5.1.1 Overview

Six utilities change operations mode as follows:

EGA.COM Changes the <Micro EGA > operating mode to EGA mode 3.

MDA.COM Changes the <Micro EGA > operating mode to MDA or HERCULES.

CGA.COM Changes the <Micro EGA > operating mode to CGA mode 3.

SWITCH.EXE Menu driven operation of the above utilities. Note that SWITCH requires that EGA, CGA, MDA be on the same directory.

VCGC.COM Sets the <Micro EGA > for HERCULES graphics operations after running MDA.

AUTOMODE Changes the <Micro EGA > from EGA mode to CGA mode.

5.1.2 Basic Mode Switching - Operation

To change the video mode from the system prompt or in a batch file, type EGA, CGA or MDA, as desired.

5.1.3 SWITCH - Operation

To operate Switch, follow the steps below:

1. At the system prompt type any one of the following:

Type: **SWITCH** - lets Switch determine the appropriate display

Type: **SWITCH V** - view all the Display options

Type: **SWITCH E** - use the Enhanced Color Display options

Type: **SWITCH R** - use the RGB Display options

Type: **SWITCH M** - use the Monochrome Display options

2. The Switch Logo appears on the screen.

Press any key (other than ESC) to continue to the next screen.

3. If Switch cannot determine your display type(s), the program displays the **Select Monitor Menu** for you to select the monitor that is active on your system. If Switch can determine your display type(s), the program immediately moves to Step 5.

Use the arrow keys to highlight your option and the return key to select your option; or, simply press the first letter of your option (example: press R for RGB).

Press the escape key (Esc) to exit Switch without making any changes to the video environment.

WARNING

Switch may perform with unpredictable results if you request an option not available for your system (for example, if you request Monochrome Display when no Monochrome Display is available).

4. Switch displays the mode selection menu. Use the left and right arrow keys to select the Display Adapter Standard you want to use. Use the up and down arrow keys to locate, and the Return key to select, the video mode that you want your system to be in upon leaving Switch.

5.1.4 VCGC.EXE

5.1.4.1 Overview

Some application programs, particularly older versions, require a utility to setup the graphic environment before they will operate properly in HERCULES mode. VCGC provides this function for your < **Micro EGA** > and functions similarly to the HGC program supplied with HERCULES Graphics Adapters. If your application software does not run properly in HERCULES mode, run VCGC immediately before the application.

VCGC.EXE allows three configurations: FULL, HALF and DIAG.

FULL-is the normal operation configuration for HERCULES Graphics mode and is required by Lotus 1-2-3 Version 1A. FULL allows unrestricted access to the 64K of MDA memory. Never use FULL if an IBM color card is in your system.

HALF-allows an IBM color card to be in the system at the same time you are in MDA mode. HALF limits access to the first 32K of memory.

DIAG-limits access to the first 4k of MDA memory; this allows text only, without any graphics.

5.1.4.2 Operation

Insert your < **Micro EGA** > utility diskette and:

Type: **VCGC FULL** then press **ENTER** for FULL

Type: **VCGC HALF** then press **ENTER** for HALF

Type: **VCGC DIAG** then press **ENTER** for DIAG

No Parameters:

If VCGC is run without a valid command line parameters, it displays a list of valid parameters and does not modify the HERCULES environment.

VCGC in non-MDA mode:

Running VCGC while in a non-MDA mode will reset any HERCULES Graphic Adapter or compatible.

5.1.5 AUTOMODE

5.1.5.1 Overview

Automode controls auto mode switching from EGA mode to CGA mode. Many CGA-only games can be started in EGA mode by using Automode.

5.1.5.2 System Requirements

- Jumper P3 must be set for Automode
- Can only be run in EGA mode

5.1.5.3 Operation

Type: **AUTOMODE** then press **ENTER**

- Each time automode is run it automatically switches between Enabled and Disabled.

To make sure that Automode is always Enabled:

Type: **AUTOMODE E** then press **ENTER**

To make sure that Automode is always Disabled:

Type: **AUTOMODE D** then press **ENTER**

NOTE: The mode switching programs MDA, CGA and EGA will Disable AUTOMODE automatically.

5.2 Resolution Switching Utilities

5.2.1 Overview

The RUN family of programs facilitates higher resolution operation of many applications that can be configured for additional rows and columns. There are two styles of operations:

- Set environment for the execution of a program
- Set environment to continue until EXIT

5.2.2 System Requirements

- ECD monitor for RUN38 and RUN43
- Variable frequency monitor for RUN120 and RUN132

Program Name	Columns x Rows
RUN38	80 x 38
RUN43	80 x 43
RUN120	120 x 38
RUN132	132 x 43

5.2.3 Operation

Type: `RUN### <program name> <program parameters>`

e.g. `RUN120 ED readme.doc`

e.g. `RUN120 DIR`

e.g. `RUN120 (sets mode - use "EXIT" to return to previous mode)`

NOTE: Default for EGA, CGA and MDA is 80 x 25

`###` is either 38, 43, 120, or 132

To have DOS recognize extra columns or, be sure that ANSI.SYS is not included in your CONFIG.SYS file.

5.3 REBOOT Utility

5.3.1 Overview

The BOOTCGA program allows you to boot the system into CGA mode without having to change any switch settings.

5.3.2 Operation

At the system prompt:

Type: **BOOTCGA** then press **ENTER**

The program will display a message and wait for you to prepare the system for a reboot. (For example, to allow you to put a CGA game diskette in Drive A) Press **ESCAPE** to terminate without rebooting or changing the video mode; any other key will continue the reboot.

5.4 DIP

5.4.1 Overview

The DIP utility provides a configuration-testing environment for the VC-101 dip switch settings. DIP operates in any valid EGA, CGA or MDA video mode where the VC-101 is the active display adapter.

5.4.2 Operation

To operate the DIP utility, follow the steps below:

1. At the system prompt type any one of the following:
 - DIP displays settings for 1 display adapter with 1 monitor
 - DIP 1 displays settings for 1 display adapter with 1 monitor
 - DIP 2 displays settings for 2 display adapters with the VC-101 as the primary display adapter
 - DIP 2 P displays settings for 2 display adapters with the VC-101 as the primary display adapter
 - DIP 2 S displays settings for 2 display adapters with the VC-101 as the secondary display adapter
 - DIP (any option other than those above) displays usage of DIP command line switches.
2. The DIP Logo appears on the screen. Press any key to continue to the next screen.
3. All possible switch settings for your display environment are displayed with the current setting highlighted. If the current setting is not valid for selected display environment, the setting appears in an "error box" below the valid settings.
4. To view changes in the settings, flip the dip switches on your VC-101 to the desired settings and then press any key (other than ESC) to view the updated settings.
5. When you are satisfied with the desired settings, press ESC to exit the DIP program. If your settings have changed from the startup settings, DIP will display a message recommended to reboot your computer from power off.

5.5 HELP

5.5.1 Overview

The HELP utility provides easy access and organization of standard ASCII README files in a menu-driven environment. HELP operates in any valid EGA, CGA or MDA video mode.

5.5.2 Operation

To operate the HELP utility, follow the steps below:

1. At the system prompt type any one of the following:

HELP Uses line wrap only in 40 column modes.

HELP N Uses line wrap only in 40 column modes.

HELP W Uses word wrap in all modes.

2. The HELP Logo appears on the screen. Press any key to continue to the next screen.

3. If the file named HELP.INF is on the current directory, HELP will display the main menu of options. Use the arrow keys to highlight your option and the return key to select your option; or, simply press the first letter of your option. If your option is not valid for the present configuration of HELP, an error message is displayed and the menu is once again presented.

4. HELP provides for 3 types of options:

SUBMENU Presents a new selection of menu options which include:

- (a) Any of 3 option types.
- (b) RETURN to previous menu.
- (c) QUIT the HELP session.

DISPLAY Allows viewing standard ASCII README files and presents the user with a SUBMENU for viewing with the following options:

- (a) SCROLL up or down in viewing the document.
- (b) RETURN to the previous menu.
- (c) PRINT the document to the standard printer (if a printer is on-line).
- (d) SHELL access to the DOS command line. Type "Exit" to return to HELP.
- (e) RUN an existing file with the same filename as the README file but with a ".BAT", ".COM" or ".EXE" extension. This file must exist on the current subdirectory of the specified/default drive.
- (f) QUIT the HELP session.

RUN Executes a file with a ".BAT", ".COM" or ".EXE" extension. This file must exist on the current subdirectory of the specified/default drive.

To create ".INF" files, use a standard ASCII text editor to create files in the following format:

1. The first ".INF" file must be named "HELP.INF". All subsequent ".INF" files on the same directory must have the ".INF" extension. The initial ".INF" files on lower subdirectories must be named "HELP.INF".
2. Each line in the ".INF" text file represents one menu option in the following format:
 - (a) The first word is the name of a file which has a maximum of 12 characters followed by either a blank space(s) or tab(s) and can be any one of the following:
 - An ".INF" file that represents another submenu on the same directory.
 - A valid child subdirectory name that contains another "HELP.INF" file.
 - An executable file on the current drive and directory with either a ".BAT", ".COM" or ".EXE" extension.
 - A standard ASCII README file for viewing.
 - (b) The second word is the name of the menu option which will be in the menu box. It can be a maximum of 24 characters and followed by either a blank space(s) or tab(s).
 - (c) Following the second word and its trailing blank space(s) or tab(s) is the menu description line, which can be a maximum of 40 characters.
 - (d) The entire line including all blanks and tabs must be a maximum of 80 characters. Any characters beyond 80 will be ignored.
3. Each ".INF" file can contain a maximum number of rows equal to the total number of displayable rows less 6 (i.e. if there are 25 display rows then ".INF" files will display a maximum of 19 options).

If there are more than 19 options, then HELP will only display in modes that have sufficient displayable rows. It is recommended that 19 options be the maximum number of options in any single ".INF" file and that a submenu ".INF" file be created to accommodate additional options.
4. HELP automatically adds the "RETURN" option to return to the previous menu as the second to last option if the current menu is a submenu.
5. HELP automatically adds the "QUIT" option to all ".INF" files as the last option.

To be inserted into section 5.2.1:

In addition to the RUN programs themselves, the TTL132 utility is included in this family due to the similar nature of its function, as described below.

To be inserted into section 5.2.2:

- TTL monitor
- 27.265 MHz oscillator on feature connector
- No CGA color card present in system
- < Micro EGA > must be installed as a single monitor system (see 3.0 INSTALLATION)
- System must be in EGA Monochrome Mode 7

To be inserted into section 5.2.3:

Type: TTL132 <program name> <program paramters>

e.g. TTL132 ED readme.doc

e.g. TTL132 DIR

e.g. TTL132 (sets mode - use "EXIT" to return to previous mode)

WARNING

Programs run from within this environment that directly read or write to hardware or use video modes other than modes 2 or 3 may have unpredictable results.

6.0 ENHANCED RESOLUTION WITH YOUR < Micro EGA >

6.1 Overview

This section is a guide to installing and setting up applications to support higher resolutions when using your < Micro EGA > along with specific software applications. The programs and files to support the enhanced resolutions are on the utility diskette that comes with the < Micro EGA >.

In order to take full advantage of these features, you **MUST** have a variable frequency monitor. Standard EGA monitors will not support the high resolutions available with the < Micro EGA >. After proper installation, you can use:

AUTOCAD, Version 2.18 to 2.26

- For using the 640 x 480, 752 x 420 or 800 x 600 high resolution capabilities of your < Micro EGA > with AutoCAD Version 2.18 to 2.26. Extra resolution allows you to see more details in your AutoCAD drawings than previously possible.

EGAPAIN, Version 2005

- For using the 800 x 600, 752 x 410 or 640 x 480 high resolution capabilities of your < Micro EGA > with EGAPaint.

FRAMEWORK II, Version 1.1 or greater

- For using the 80 x 40, 80 x 53, 94 x 46, 100 x 42, 120 x 38, 132 x 38 or 132 x 43 high resolution capabilities of your < Micro EGA > with Framework II.

NOTE: 120 x 38 also runs on both a standard Enhanced Color Display and a variable frequency monitor.

GEM, Version 2.1 or greater

- For using the 640 x 480 or 800 x 600 high resolution capabilities of your < Micro EGA > with GEM.

MICROSOFT WINDOWS, Version 1.0 or greater

- For using the 640 x 480, 752 x 420 or 800 x 600 high resolution capabilities of your < Micro EGA > with Windows.

VENTURA PUBLISHER, Version 1.0 or greater

For using the 640 x 480 or 800 x 600 high resolution capabilities of your < **Micro EGA** > with Ventura Publisher.

WORD PERFECT, Version 4.1 or greater

For using the 80 x 38, 80 x 43, 120 x 38 or 132 x 43 high resolution capabilities of your < **Micro EGA** > with Word Perfect.

WORDSTAR, Version 4.0 or greater

For using the 80 x 38, 80 x 43, 120 x 38 or 132 x 43 high resolution capabilities of your < **Micro EGA** > with WordStar.

IMPORTANT:

IF YOUR SYSTEM DOES NOT HAVE A VARIABLE FREQUENCY MONITOR, OR IF YOU ARE NOT SURE WHAT TYPE OF MONITOR YOU DO HAVE, THEN DO NOT ATTEMPT TO USE HIGH RESOLUTION OR YOU MAY DAMAGE YOUR COLOR MONITOR.

6.2 AUTOCAD DRIVER, Version 2.18 to 2.26

6.2.1 Installation

To install the AutoCAD driver, follow the steps below:

1. Copy the following files from your < Micro EGA > utility diskette to your root directory:

File Name	Graphics Resolution
DSVC6448.COM	640 x 480
DSVC7542.COM	752 x 420
DSVC8060.COM	800 x 600

2. Type the name of the driver you want to use then press ENTER
3. Configure AutoCAD. To do this, type the following after the system prompt:

ACAD then press ENTER

5 to configure AutoCAD then press ENTER

3 to configure Video display the press ENTER

1 for ADI driver

6.2.2 Operation

When you decide which resolution you want to use, type the name of the appropriate driver and then press ENTER to load it. This must be done before running AutoCAD each time you reboot your system. You may want to add the driver to your AUTOEXEC.BAT file.

6.2.3 Controlling Colors

When you load the driver, you can specify different colors with some "switches."

A "switch" is a "/" or "-" followed by a command character and number. Multiple switches can be issued at once, but they must be separated by spaces ". The table below indicates which switch is used for changing each screen item:

Switch	Description
[/b###]	Border
[/c###]	Cursor
[/d###]	Grid Dot
[/x###]	XOR (Dragging)
[/m###]	Mode Line
[/o###]	Coordinate Line
[/s###]	Screen Menu Text
[/h###]	Screen Menu Highlight
[/p###]	Command Prompt Text

A color value in the range of 0 and 255 can be entered with each switch. Colors used are:

Number	Color	Number	Color
0	Black	8	Blinking Black
1	Red	9	Blinking Red
2	Yellow	10	Blinking Yellow
3	Green	11	Blinking Green
4	Cyan	12	Blinking Cyan
5	Blue	13	Blinking Blue
6	Magenta	14	Blinking Magenta
7	White	15	Blinking White

NOTE: For the Grid Dot and Screen Menu Highlight screen items, you should add 128 to the colors listed above.

Examples:

- To change the color of the border to Red, type:
DSVC6448 /b1 and then press **ENTER**
- To change cursor and the XOR colors to blue, type:
DSVC6448 /c5 /x5 and then press **ENTER**
- To change colors from within the AutoCAD drawing editor, use the AutoCAD command **SHELL**.

Once a color scheme has been decided, it is usually more convenient to set the driver up in a batch file with all of the switches set as desired.

6.2.4 Controlling the Blinking Highlight

When the < **Micro EGA** > AutoCAD Driver has been installed, AutoCAD highlights selected items by blinking them between dim and bright. If you have AutoCAD version 2.5 or greater, you can turn the switch from dim to bright highlighting or from bright to dim highlighting by holding down the control button while typing L (known as ^L command).

Also switch between low intensity screen colors and high intensity screen colors by entering ^L.

6.3 EGAPaint, Version 2005

6.3.1 Installation

To install high resolution EGAPaint drivers, follow the steps below:

1. Copy the following files from your < Micro EGA > utility diskette to the directory containing EGAPaint.EXE and EGASLIDE.EXE:

File Name	Graphics Resolution
RIXVIDEO.DSC	All
640x480.CFG	640 x 480
752x410.CFG	752 x 410
800x600.CFG	800 x 600

2. To ensure proper path searches, modify the default configuration for 752x410.CFG, 640x480.CFG and 800x600.CFG by typing:

EGASETUP [752x410, 640x480 or 800x600] then press ENTER

Follow the guidelines described in the EGAPaint manual.

6.3.2 Operation

For proper operation, do the following:

Type: EGAPaint followed by the name of the resolution you want to use, then press ENTER

Example: EGAPaint 752X410

6.3.3 Paint File Conversion

To use EGAPaint in high resolution modes, the standard .SCR files must be translated using XLATE.EXE, which is supplied with EGAPaint. For additional information, refer to the EGAPaint manual for instructions on how to use XLATE.EXE.

6.4 FRAMEWORK II, Version 1.0 or greater

6.4.1 Installation

To install your < **Micro EGA** > Framework II driver, follow the steps below:

1. At the system prompt, change to your Framework II directory and type:
SETUP
2. Select 2 under ALL OTHER USES OF THE SETUP PROGRAM
3. Select 2 under CHANGE CONFIGURATION
4. Select 1 under PRIMARY HARDWARE
5. Select 1 under SCREEN DRIVER
6. Select 7 under SELECT DRIVER; this allows the choice of a specific driver
7. Enter one of the following under NEW SETTING:

Type	Columns x Rows	Graphics Resolution
FW80X40.SC	80 x 40	640 x 480
FW80X53.SC	80 x 53	640 x 480
FW94X46.SC	96 x 46	752 x 420
FW100X42.SC	100 x 42	800 x 600
FW120X38.SC	120 x 38	960 x 350
FW132X38.SC	132 x 38	1056 x 350
FW132X43.SC	132 x 43	1056 x 350

8. Press M to go to the main menu
9. Press 7 to save all changes
10. Place < **Micro EGA** > utility diskette into drive A
11. Select either Floppy or Hard Disk (depending on your system)
12. Exit from SETUP

6.4.2 Operation

Start Framework II as you normally would. To change to a different resolution, repeat the install procedure for that resolution.

NOTE: The 120 x 38 driver works with both a standard ECD monitor and a variable frequency monitor.

6.5 GEM, Version 2.1 or greater

6.5.1 Installation

GEM must already be installed on your PC; be sure to have your GEM disks handy, you will need them. To install your <Micro EGA> GEM driver, follow the steps below:

1. Insert the <Micro EGA> diskette into Drive A
2. At the system prompt type: `SCRNSTAL X` then press ENTER

NOTE: X is the Drive ID where GEM is located. If GEM is on floppies, drive X should contain the "GEM STARTUP" disk.

3. Select the desired resolution for the VC-001 then press ENTER
4. Answer all system prompts
5. Verify all selections

6.5.2 Operation

Start GEM as you normally would. To change resolutions, repeat the steps above for the new resolution.

6.6 MICROSOFT WINDOWS DRIVERS, Version 1.0 or greater

6.6.1 Installation

To install your < **Micro EGA** > Windows drivers, follow the steps below:

1. Select the resolution you want to install. Follow the instructions below using the appropriate file names in place of the "WVC####" for the desired resolution:

Type	Columns x Rows	Graphics Resolution
WVC6448.DRV	80 x 40	640 x 480
WVC6448.GRB		
WVC6448.LGP		
WVC7542.DRV	96 x 46	752 x 420
WVC7542.GRB		
WVC7542.LGO		
WVC8060.DRV	100 x 42	800 x 600
WVC8060.GRB		
WVC8060.LGO		

2. Make copies of your Windows Setup and Build disks. Use only the copies just made.

Return the original Setup and Build disks to Windows package.

3. Delete the CGA.DRV file from the copy of Setup.
4. Copy the WVC####.DRV file from the < **Micro EGA** > utilities disk to the copy of the Setup disk.
5. Copy the WVC####.GRB and WVC####.LGO files from < **Micro EGA** > utilities disk to copy of Build.
6. Place the Setup disk in drive A: and run Setup as described in the Windows manual. Additional drivers are listed in the driver selection area. Choose the resolution that you have installed, either 640 x 480 752 x 420 or 800 x 600.

6.6.2 Operation

Start Windows as you normally would. To change resolutions, repeat the steps above for the new resolution.

6.7 VENTURA PUBLISHER, Version 1.0 or greater

6.7.1 Installation

Ventura Publisher must already be installed on your PC. To install your < **Micro EGA** > Ventura Publisher driver, follow the steps below:

Note: Select Hercules Card during initial Ventura installation.

1. Insert < **Micro EGA** > utility diskette into Drive A
2. At the system prompt, type: **VENTURA** then press **ENTER**
3. Type: **1** then press **ENTER** for version 1.0 or 1.01
 1.1 then press **ENTER** for version 1.1 or greater
4. Select Drive Name then press **ENTER**
5. Select driver; choices are 640 x 480 or 800 x 600
6. Answer all system prompts
6. Verify all selections

6.7.2 Operation

Start Ventura Publisher as you normally would. To change resolutions, repeat the steps above for the new resolution.

6.8 WORD PERFECT, Version 4.1 or greater

6.8.1 Set Up

In addition to the standard 80 x 25 mode, you have four high resolution modes to choose from:

Columns	Rows	Using
80	38	RUN38
80	43	RUN43
120	38	RUN120
132	43	RUN132

NOTE: Word Perfect does not use external drivers for its screen configuration. Instead, Word Perfect automatically installs the desired screen size during the program configuration routine.

To setup Word Perfect, follow the steps below:

NOTE: During the setup procedure, the screen image and cursor location may be distorted. If so, follow instructions and ignore the screen.

1. Type: RUN### WP/S then press ENTER
2. Select: option 3 then press ENTER
3. Type: desired rows (for particular RUN program) then press ENTER
4. Type: desired columns (for particular RUN program) then press ENTER
5. Select: option 0 then press ENTER

Word Perfect is now permanently configured to display the desired number of lines and columns. To change the resolution, repeat the above steps.

6.8.2 Operation

To use Word Perfect:

Type: RUN### WP then press ENTER

NOTE: RUN### is the RUN program that matches the rows and columns that you specified in the setup procedure.

6.9 WORDSTAR

6.9.1 Set Up

You have four high resolution modes to choose from:

Columns	Rows	Using
80	38	RUN38
80	43	RUN43
120	38	RUN120
132	43	RUN132

NOTE: WordStar does not use external drivers for its screen configuration. Instead, Wordstar automatically installs the desired screen size during the program configuration routine.

To setup WordStar, follow the steps below:

1. Type: **WSCHANGE** then press **ENTER**
2. Type: **WS** then press **ENTER**
3. Type: **WS** then press **ENTER**
4. Type: **A** then press **ENTER**
5. Type: **A** then press **ENTER**
6. Type: **C** then press **ENTER**
7. Type: **A** then press **ENTER**
8. Type: desired rows (for particular RUN program) then press **ENTER**
9. Type: **B** then press **ENTER**
10. Type: desired columns (for particular RUN program) then press **ENTER**
11. Type: **X** then press **ENTER**
12. Type: **X** then press **ENTER**
13. Type: **X** then press **ENTER**
14. Type: **X** then press **ENTER**
15. Type: **Y** then press **ENTER**

WordStar is now permanently configured to display the desired number of lines and columns. To change the resolution, repeat the above steps.

6.9.2 Operation

To use WordStar:

Type: **RUN### WS** then press **ENTER**

NOTE: **RUN###** is the RUN program that matches the rows and columns that you specified in the setup procedure.

6.10 LOTUS 1-2-3, Version 2.0 or greater

There are two text drivers and three graphics drivers available. LOTUS allows you to select one driver of each type from the following:

File Name	Columns x Rows	Graphics Resolution
LT120.DRV	120x43	
LT132.DRV	132x43	
LG64x48.DRV		640x480
LG75x42.DRV		752x420
LG80x60.DRV		800x600

6.10.1 Installation

To install your < Micro EGA > LOTUS drivers, follow the steps below:

1. Copy the above drivers from your <OEM Name> utility disk to your LOTUS supplied "Install Library" disk (if you have a diskette-based system), or your LOTUS directory (if you have a hard disk-based system)
2. Run the INSTALL program supplied with LOTUS
- 3.. Select "Advanced Options"
4. Select "Add new drivers to library"
5. You may now select the drivers using the "Modify Current Driver Set" option of INSTALL
6. Don't forget to save your changes after you have selected your new Text and Graphics drivers

6.10.2 Operation

Start LOTUS as you normally would. To change resolutions, follow the instructions in the LOTUS INSTALL program.

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