

**EXTRA!  
EXTRA!**

CONNECTIVITY SOFTWARE

**S3G GRAPHICS OPTION  
USER'S MANUAL**

**Attachmate**

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**EXTRA!**  
**S3G GRAPHICS OPTION**

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**USER'S MANUAL**  
**RELEASE 1.2**

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# Introduction to EXTRA! S3G Graphics Option

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## Introduction

The *S3G Graphics Option* is a powerful software program that brings the capabilities of an IBM mainframe-graphics terminal to your PC or PS/2 through full 3270 terminal emulation. Once at the PC, these host-generated images can be personalized with *PC Paintbrush/FRIEZE* for use in proposals and presentations. Modifying host-generated graphics on your PC will become easier, faster, and usually less expensive than modifying them with a mainframe graphics application.

When you are finished modifying the image, be it a three-dimensional pie chart, landscape grid or detailed CAD drawing, you can store it on your diskette for later use or print it on your PC printer. *S3G Graphics* brings you all the power of a host graphics program, without special graphics hardware.

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## Program Features

- *S3G Graphics* is an easy software upgrade to *EXTRA! Connectivity Software*, allowing you to access host graphics through coax, modem links or local area networks.
- *S3G Graphics* runs on standard IBM-PC/XT/ATs, PS/2 (Models 30,50,60, & 80), and compatibles.
- *S3G Graphics* emulates the following graphic terminals: IBM 3270-PC with Programmed Symbols Adapters; IBM 3279 S3G; and IBM 3278 Models 2 or 3 (#3620, #5790).
- *S3G Graphics* runs up to four mainframe sessions at the same time, with any combination of text or graphic sessions.

- *S3G Graphics* supports both the IBM Color Jet printer and PC Matrix Printers.
- *S3G Graphics* doesn't require any special hardware since it will run on Enhanced Graphics Adapters (EGA), Video Graphics Array (VGA) systems, and Color Graphics Adapters (CGA). Attachmate's simple configuration program lets you match the resolution of the mainframe to the graphic adapter in your PC.
- *S3G Graphics* and *EXTRA!* are both completely IBM compatible, so you can run the software on either Attachmate's adapters or your existing IBM coax, SDLC and LAN adapters.

# Preface

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## Introduction

This manual explains how to install, customize, and use the *S3G Graphics Option* with *EXTRA! Connectivity Software*. *S3G Graphics* will bring high-resolution, mainframe-generated images to your PC, which then can be modified and printed.

To best use the *S3G Graphics User's Manual*, you should be familiar with *EXTRA!* and how it operates. You also should be familiar with your IBM or IBM-compatible personal computer and its Disk Operating System (DOS). In addition, you should be familiar with the IBM 3270 graphics terminal that *S3G Graphics* is emulating, and the mainframe-graphics program that generated the host image. For a list of supplemental reading sources, turn to Appendix A.

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## How To Use This Manual

The *S3G Graphics User's Manual* features these chapters:

- Chapter 1 - "Installation" provides hardware and software requirements for *S3G Graphics*, then provides step-by-step instructions for installing *S3G Graphics* on both fixed and floppy disk systems.
- Chapter 2 - "Customization" explains how to customize *S3G Graphics* within the *EXTRA!* Customization Manager, how to select the options within the Customization Manager that pertain to *S3G Graphics*, and how to save the customization changes that you have made.

- Chapter 3 - "Using S3G Graphics" shows you how to start *S3G Graphics*, and how to use *S3G Graphics*' Screen Capture feature to store images to disk. It also introduces you to the *PC Paintbrush/FRIEZE* interface which can be used to locally capture, edit, and output a mainframe-generated image.
- Chapter 4 - "Problem Determination" lists solutions for problems that may occur while using *S3G Graphics*.
- Appendix A - "Supplemental Reading" provides a list of publications that can help you learn more about programmed symbol graphics and 3270 Graphics Terminals.
- Appendix B - "Screen Capture Specifications" lists the specifications that must be met prior to using *PC Paintbrush/FRIEZE* and other Screen Capture utilities.
- Index - The index provides a reference point for finding specific subjects in this manual.

In addition to this manual, you may refer to the "Information Utility Files" for information on installation, compatibility, system limitations and trouble-shooting. These INFO files are provided on your *S3G Graphics Option* diskette, and can be accessed by typing INFO after the DOS prompt. See the *EXTRA! User's Manual*, Appendix B, for more details about these files.

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## Manual Conventions

In general, keystrokes on the Standard PC Keyboard and the Enhanced IBM PC keyboard are presented in **bold type** throughout this manual.

Workstation Control Functions, however, are printed in *italicized type*.

The following lists the most commonly-used commands for *S3G Graphics*. For a complete list of *S3G Graphics* commands, see Chapter 3, "Using S3G Graphics." The *EXTRA!* User's Manual, keyboard templates and reference card also provide additional information.

<u>3270 Function</u>	<u>PC Keyboard</u>	<u>122-Key Keyboard</u>
Start Screen Capture	<b>Ctrl/Alt S C</b>	<i>WsCtrl/PF17</i>
Capture a S3G Graphic	<b>Print*</b>	<i>PF17</i>
End Screen Capture	<b>Ctrl/Alt S C E</b>	<i>PF19</i>
Toggle Between Graphics and Text Mode	<b>Ctrl/Alt G</b>	<i>PF20</i>
Quit <i>EXTRA!</i>	<b>Ctrl/Alt K</b>	<i>PF16</i>

\* To capture a graphic image using an IBM Enhanced PC Keyboard or compatible, press **Alt/Scroll Lock** instead of the **Print** key.

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## Before Getting Started

Before you can begin using *S3G Graphics*, you must first install the software and customize it to match your workstation. These processes are explained in Chapters 1 and 2.





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# Installation

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## Introduction

Before you can use *S3G Graphics* to emulate a 3270 terminal, the software must be installed and configured for your unique workstation environment. This chapter explains the following:

- The hardware and software that is required before you can install *S3G Graphics*.
- How to install *S3G Graphics* onto your hard disk.
- How to make backup copies of your *S3G Graphics* software on both fixed (hard) and floppy disk systems.

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## Hardware and Software Requirements

The *S3G Graphics Option* is a software product for all IBM PCs, XTs, ATs, PS/2s (models 30, 50, 60 & 80) and compatible personal computers.

*S3G Graphics* cannot run without *EXTRA! Connectivity Software*, therefore it is subject to the same hardware and software requirements as *EXTRA!* The hardware and software requirements for *EXTRA!* are covered in the first chapter of the *EXTRA!* User's Manual.

## Supported Adapters

In addition to *EXTRA!*'s hardware and software requirements, *S3G Graphics* supports the following display adapters:

- EGA - IBM Enhanced Graphics Adapter - 640 x 350 with 16 colors. (You will need at least 128K of adapter memory.)
- VGA - IBM PS/2 Video Graphic Array Adapter (or compatible) - 640 x 480 with 16 colors. This adapter is used as a 640 x 350 EGA with 16 colors.
- IBM CGA - IBM Color Graphics Adapter - 640 x 200 with two colors.
- AT&T CGA - Color Graphics Adapter - 640 x 400 with 2 colors.
- DEB - AT&T Display Enhancement Board - 640 x 400 with 16 colors.

## PC Memory Requirements

In addition to the memory that is required to run *EXTRA! Connectivity Software*, your PC must also meet the the following memory requirements\* prior to running *S3G Graphics*:

NUMBER OF GRAPHIC SESSIONS	PC MEMORY
1	83K
2	138K
3	193K
4	248K

\* These PC Memory Requirements do not include the memory that is needed to run Attachmate's *EXTRA! Connectivity Software*.

## Host Communications Requirements

*S3G Graphics* will communicate with the host computer through a variety of coax and local area network adapters. The supported adapters are covered in Chapter 1 of the *EXTRA! User's Manual*.

*S3G Graphics* must be configured for Distributed Function Terminal (DFT) mode in order to operate. *EXTRA!* cannot receive host graphics data in Control Unit Terminal (CUT) mode, which means your controller must support and be configured for DFT. Your controller also must have the Structured Field and Attribute Processing options of Configuration Support C or D. See your host communications manual or personnel for assistance.

*S3G Graphics Option* emulates the following graphic terminals:

- IBM 3279 Model S3G
- IBM 3270-PC with Programmed Symbols Adapter
- IBM 3278 Model 2 or 3 with features:
  - #3620 - Character Set Extension
  - #5790 - Programmed Symbols

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## Installing the S3G Graphics Option

This section explains how to install the *S3G Graphics* software on a fixed (hard) disk system and a floppy disk system. The *S3G Graphics* software is supplied on a 5.25 or a 3.5 inch diskette, which is labeled:

### S3G GRAPHICS OPTION

The following instructions assume that you have already installed *EXTRA! Connectivity Software*. If *EXTRA!* has not been installed, turn to the first chapter of the *EXTRA! User's Manual*.



## Installing S3G Graphics on a Fixed Disk System

1. Insert the *S3G Graphics* diskette into your "A" drive. If you are using the 3.5 inch diskette, make sure that the write-protect window is closed. (The 5.25 inch diskette is already write protected.)
2. Activate the hard disk subdirectory where your *EXTRA!* files are stored. To activate your *EXTRA!* subdirectory, type the following after the DOS prompt:

```
cd\xxxx [ENTER]
```

where **xxxx** is the name of the subdirectory that contains your *EXTRA!* files.

3. Use the following DOS "COPY" command to copy the contents of the *S3G Graphics* diskette into the same subdirectory that contains *EXTRA!*

```
copy a:*.* [ENTER]
```

4. After the diskette has been copied, file the original in a safe place. It will be your backup copy.

The *S3G Graphics* software is now installed on your hard disk. But before you can use the software, *S3G Graphics* must be customized to suit your unique workstation environment. Turn to Chapter 2, "Customization," for instructions.

## Installing S3G Graphics on a Floppy Disk System

1. Obtain a blank, formatted diskette.
2. The *S3G Graphics* diskette (5.25 inch) is write protected. If you are using the 3.5 inch diskette, make sure that the write-protect window is closed.
3. Load your Disk Operating System. After the DOS prompt appears, remove the DOS diskette from the source drive and replace it with the *S3G Graphics* diskette.
4. Place the blank diskette into Drive B (the destination drive) and type:

```
copy a:*. * b: [ENTER]
```

6. After the *S3G Graphics* diskette has been copied to the disk in Drive B, remove the two diskettes and label the copy "*S3G Graphics Option Working Copy*." File the original diskette in a safe place as a backup diskette.

You now have an original and a working copy of your *S3G Graphics* software. But before you can use the software, *S3G Graphics* must be customized to suit your unique workstation environment. Turn to Chapter 2, "Customization," for instructions.



# Customization

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## Introduction

Before you can use *S3G Graphics*, it first must be tailored so that it fits into *EXTRA!*'s specific operating environment. If you have not already installed both the *EXTRA!* and *S3G Graphics* software, follow the instructions provided in the "Setting Up" chapter of the *EXTRA!* User's Manual and the "Installation" chapter of the *S3G Graphics Option* user's manual.

You will use the *EXTRA!* Customization Manager to configure your *S3G Graphics* software. The Customization Manager, a component of your *EXTRA!* software package, will provide *EXTRA!* with the following information:

- The type of connection used to access the host.
- The Display Adapter Type used by your PC.
- The number of host sessions using *S3G Graphics* (up to four).
- The programmed symbol cell size used by your host application.
- The model number of the 3270 screen that *S3G Graphics* is emulating.

This chapter explains how to customize *S3G Graphics* within the *EXTRA!* Customization Manager, how to select the options which pertain to *S3G Graphics*, and how to save the customization changes that you have made.

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## How to Use the EXTRA! Customization Manager

You can make selections from the screens within the *EXTRA!* Customization Manager by following these conventions:

### Making a Selection From a Menu

- If your keyboard features function keys, simply press the Function Key that corresponds to your menu selection. For example, to select (F1), press the F1 key.

-OR-

- Use the Up Arrow or Down Arrow keys to position the cursor on your selection, then press **Enter**.

### Moving From Screen to Screen

Whenever you make a selection, by either using the function keys or the arrow keys, you will advance to that screen's sub-menu. To return from a sub-menu to the main Selection Menu, continue pressing the Esc key at each sub-menu until you reach the main menu.

### Verifying Your Selection

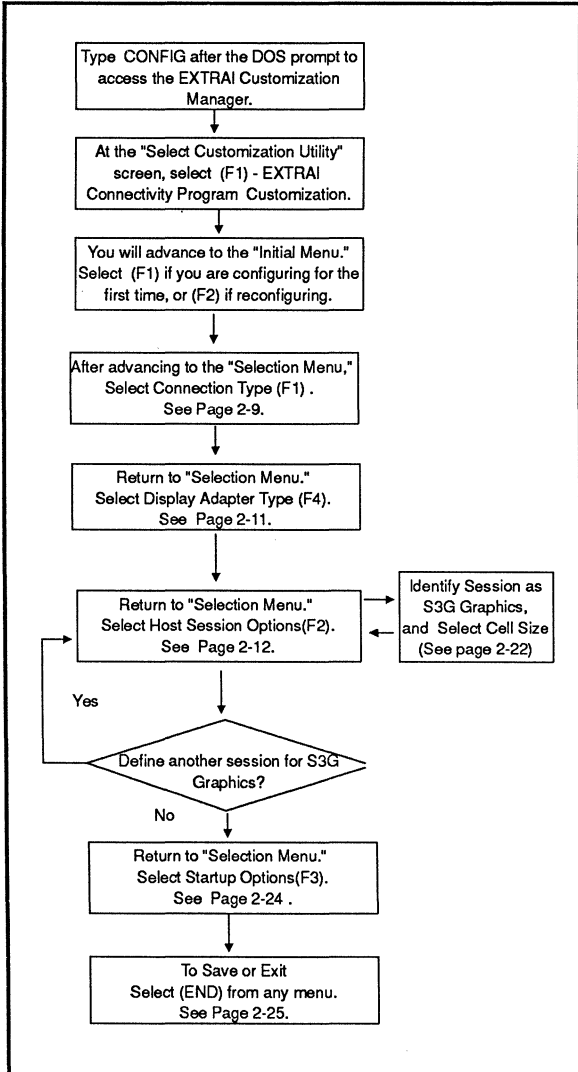
You can verify your menu selections through the two status lines that appear at the top of each menu. The lines, located just below the copyright symbol, list your most recent customization selections. For example, if you select Coax as your Connection, the word "Coax" will immediately appear on the Status Line after "Connection." For a more detailed example, refer to the screen example on page 2-9.

## **Saving Your Changes and Exiting the EXTRA! Customization Manager**

After you have customized *S3G Graphics* to your satisfaction, press the **End** key. This key will advance you to the Exit menu where you can either save your changes and exit the customization utility, or exit without saving the configuration.

# S3G Graphics Customization Flowchart

The flowchart below provides an overview of the steps you will take while customizing the *S3G Graphics* software. For more detailed instructions, refer to the pages following this flowchart. You now are ready to begin customization.



---

# Starting the EXTRA! Customization Manager

## Fixed Disk System

1. Activate the hard disk subdirectory where your *EXTRA!* files are stored. To activate your *EXTRA!* subdirectory, type the following after the DOS prompt:

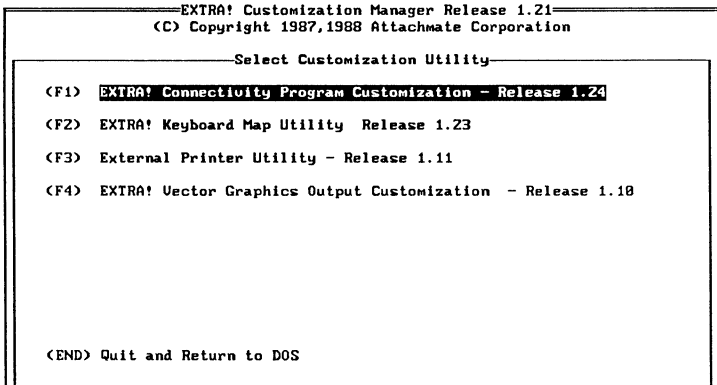
```
cd\xxxx [ENTER]
```

where **xxxx** is the name of the subdirectory that contains your *EXTRA!* files.

2. When the subdirectory's DOS prompt appears, type the following command after the prompt:

```
config [ENTER]
```

3. The Select Customization Utility screen will appear, as shown below.



Select with FUNCTION key or use cursor keys and press Enter



## Floppy Disk System

1. Insert the working copy of your *EXTRA!* Utility Diskette into either disk drive, then activate the drive so that the letter identifying the disk drive (A or B) matches the DOS prompt.
2. At the DOS prompt, type:

**config** [ENTER]

3. The Select Customization Utility screen will appear, as shown on the preceding page. If you are using 5.25 inch diskettes when you make a selection from the Customization Manager Screen, you will be asked to load the *EXTRA!* Program Diskette. Load the *EXTRA!* Program Diskette into the "active" drive and press any key to continue.

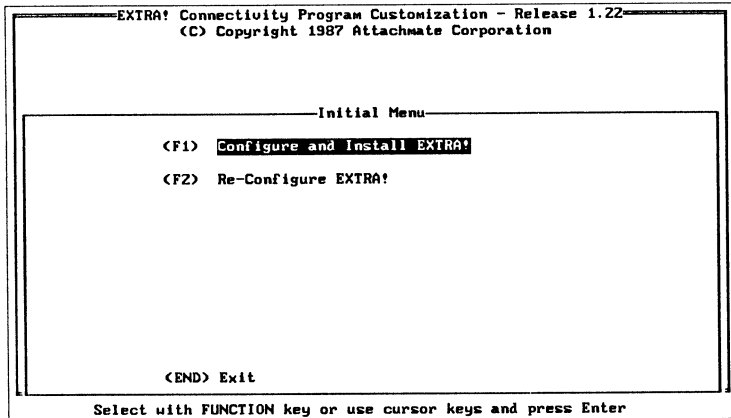
**A SPECIAL NOTE:** With the 5.25 inch diskettes, once you have finished customizing the program and are attempting to save the configuration, you will be prompted to re-insert either your system disk\* or the working copy of your *EXTRA!* Utility Diskette. Re-Insert the diskette into your disk drive, then press any key to continue. You will save the new configuration to this diskette.

\* For more information about system disks, refer to the first chapter of the *EXTRA!* User's Manual.

---

## The Initial Menu

Once the *EXTRA!* Customization Manager screen appears, press **F1** to begin the customization process of *S3G Graphics*. This selection will advance you to the Initial Menu. This menu asks whether this is the first time you are configuring and installing *EXTRA!* or whether you are reconfiguring *EXTRA!*



**(F1) Configure and Install EXTRA!** Press **F1** if you are configuring *EXTRA!* for the first time. After selecting **F1**, the following prompt will appear: "Have all *EXTRA!* Release Disks been manually copied to a Fixed (hard) Disk, and are you configuring from that Fixed Disk directory? (Y/N)"

After selecting either **Y** or **N**, *EXTRA!* will ask: "Is the Destination a Fixed Disk Drive? (Y or N)".

If you type **Y** for Yes, the following prompt will appear: "Enter Destination Drive and Path: C:\EXTRA". Press **Enter** if you want the required *EXTRA!* files to be copied to the hard disk in the \EXTRA subdirectory at the end of customization. If you wish to store *EXTRA!* in another hard-disk subdirectory, specify the path name and press **Enter**.

If you type **N** for No, you will be prompted: **"Does Your System Have Two Floppy Drives? (Y or N):"** Typing **Y** after this prompt produces the following: **"Enter Destination Drive and Path: A:\"**. Enter the letter of the drive you wish *EXTRA!* to copy to at the end of the customization.

Press **Enter** to advance to the Selection Menu shown on the next page.

**(F2) Re-Configure EXTRA:** Select **F2** if you have already customized *EXTRA!* and wish to reconfigure it. After selecting **F2**, the following prompt will appear: **"Have all EXTRA! Release Disks been manually copied to a Fixed (hard) Disk, and are you configuring from that Fixed Disk directory? (Y/N)"**

After selecting either **Y** or **N**, *EXTRA!* will ask: **"Is the Destination a Fixed Disk Drive? (Y or N)"**.

If you type **Y** for Yes, the following prompt will appear: **"Enter Destination Drive and Path: C:\EXTRA"**. Press **Enter** if you want the required *EXTRA!* files to be copied to the hard disk in the *\EXTRA* subdirectory at the end of customization. If you wish to store *EXTRA!* in another hard-disk subdirectory, specify the path name and press **Enter**.

If you type **N** for No, you will be prompted: **"Does Your System Have Two Floppy Drives? (Y or N):"** Typing **Y** after this prompt produces the following: **"Enter Destination Drive and Path: A:\"**. Enter the letter of the drive you wish *EXTRA!* to copy to at the end of the customization.

Press **Enter** to advance to the Selection Menu shown on the next page.

**Note:** For more detailed information about installing *EXTRA!*, refer to the "Setting Up *EXTRA!*" chapter of the *EXTRA!* User's Manual.

---

## The Selection Menu

After making your selections from the Initial Menu, you will advance to the Customization Manager's main Selection Menu as shown below:

```
-----EXTRA! Connectivity Program Customization - Release 1.22-----
                    (C) Copyright 1988 Attachmate Corporation

Connection: COAX - DFT  Adapter: IBM PS/2      WS Control:  CTRL-ALT
Keyboard:  ATM STANDARD Language: ENGLISH US  Display:   EGA     API:  NO

                    -----Selection Menu-----

      <F1>  Select Connection Type
      <F2>  Select Host Session Options
      <F3>  Select Startup and Other Options
      <F4>  Select Display Adapter Type
      <F5>  Select Keyboard Mapping
      <F6>  Select National Language
      <F7>  Select 3278 Color Mapping
      <END> Save or Exit

Select with FUNCTION key or use cursor keys and press Enter
```

The instructions below provide detailed information on how to customize your *S3G Graphics* software. It is assumed that both *EXTRA!* and *S3G Graphics* are installed, and that you have read the previous sections of this chapter. Before proceeding, make certain that you are at the Selection Menu of the *EXTRA!* Customization Manager (above).

### Selecting Connection Type

In order for your PC to emulate a terminal, your PC must be connected to the host via a SDLC adapter, a LAN, or a Coax adapter in Distributed Function Terminal (DFT) mode. If your PC is connected to the host via a SDLC adapter or a LAN, refer to the "Setting Up *EXTRA!*" chapter of the *EXTRA!* User's Manual for instructions on configuring your connection.

If you are using a Coax adapter, check the status lines at the top of your screen to see if your software is already configured for DFT mode. DFT places more intelligence in the PC and allows you to run several *S3G Graphics* sessions. If it is not yet configured for DFT, follow the steps below, otherwise move on to the next section, "Selecting Display Adapter Type."

1. From the main Selection Menu, press the **F1** key, "Select Connection Type."
2. At the Select Connection Type Menu, select one of the following: **F1** - Coax Connection, **F2** - LAN Connection, or **F3** - SDLC Connection.

If you select **F2** - LAN Connection, or **F3** - SDLC Connection, refer to the "Setting Up *EXTRA!*" chapter of the *EXTRA!* User's Manual for instructions on configuring your connection.

If you select **F1** - Coax Connection, you will advance to the Select Coax Connection Menu. Selecting options **F1** through **F3** from this menu will produce the prompt: "Is the Connection to the 3X74 controller CUT or DFT (C or D):" Type **D** for DFT and press **Enter** to advance to the Select DFT Options Menu.

3. To run *S3G Graphics*, select either of these Host Protocol options which appear on the Select DFT Options Menu.

**(F1) SNA Host Protocol:** Default. Select if the 3X74 connection to the mainframe uses SNA protocol.

**(F2) Non-SNA Host Protocol:** Select if the 3X74 connection to the mainframe uses a binary synchronous (bisync) link or pre-SNA channel protocol.

4. Continue pressing the **Esc** key until you return to the main Selection Menu.

## Selecting the Display Adapter Type

*S3G Graphics* supports a wide range of graphics adapters, including IBM EGA, IBM PS/2 VGA (used in EGA), IBM Color Graphics Adapter, AT&T's Color Graphics Adapter, and AT&T's Display Enhancement Board. To configure *S3G Graphics* for any of these boards, follow these steps:

1. From the main Selection Menu, select **F4**, "Display Adapter Type."
2. This selection will advance you to the Select Display Adapter Type menu. Select the type of graphics adapter that is installed in your PC or PS/2:

**(F1) EGA - IBM Enhanced Graphics Adapter:** Default. Select for IBM and compatible EGA adapters for PC/XT/AT.

**(F2) VGA - IBM Video Graphics Array:** Select for PS/2 models 50, 60 and 80.

**(F3) CGA - IBM Color Graphics Adapter:** Standard adapter found on most PC/XT/ATs, PS/2s, and compatibles.

**(F4) DEB - AT&T Display Enhancement Board:** Optional high-resolution adapter for use with AT&T machines.

**(F5) AT&T Color Graphics Adapter:** Standard graphics adapter for AT&T machines.

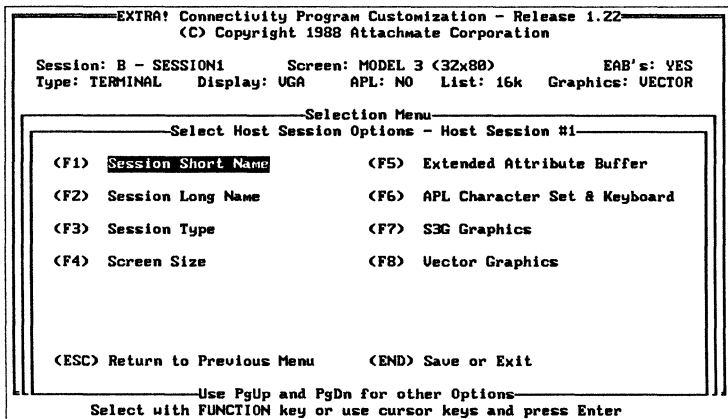
**(F6) Other:** Select for monochrome display adapters. This option does not support graphics.

3. After selecting a graphics adapter, you will return to the main Selection Menu.

## Selecting Host Session Options

Through the Host Session Option menu, you can identify the host sessions that will display *S3G Graphics*. Follow the steps below to define each of the four available host sessions:

1. From the main Selection Menu, select **F2** - Select Host Session Options.
2. You will be asked to: "Select Host Session (1 through 4)." Enter the number of the session that needs defining, such as 1. You then will advance to the Select Host Session Options menu shown below.



3. Proceed through each of the options below:

**(F1) Session Short Name:** Press this key if you want your host session window to have a different one-character name. After the prompt, type in the session's name. Defaults are B through E.

**(F2) Session Long Name:** Press this key if you prefer to give your host session window an eight-character name that is different from its current name. After the prompt, type in the session's eight-character name. This name will appear at the top of your screen. The defaults are SESSION1 thru SESSION4.

**(F3) Session Type:** Press this key to define the session as a display terminal. After the prompt, select a **T** for a terminal session, then press **Enter**. (The **P** represents printer session, which is not applicable.) Default is **T** for Terminal.

**(F4) Screen Size:** Press this key to specify the screen size of the 3270 terminal that *S3G Graphics* emulates. *S3G Graphics* will only support Model 2 (24x80) and Model 3 (32x80) screen sizes. If you choose any other screen size, you will receive an error message.

**(F5) Extended Attribute Buffer (EAB):** Select this key to enable EABs. EABs allow your PC to support highlighting, reverse images, blinking and seven colors. After pressing (F5), type **Y** in response to the prompt.

**(F6) APL Character Set & Keyboard:** Select this option to access APL capabilities. For more information on APL Keyboards and Character Sets, refer to your *EXTRA! User's Manual*.

**(F7) S3G Graphics:** Select this key to identify the host session as a *S3G Graphics* session. After selecting **F7**, the following prompt will appear: "Enable S3G Program Symbol Graphics Option for this Session (Y or N)?" Type **Y** and press **Enter**

**Note:** If you receive a message that the option is not available with the adapter in CUT mode, see "Selecting Connection Type" on page 2-9.

Pressing **Enter** will advance you to the Select Graphics Option Menu. From this menu, you can select the Cell Size of your *S3G Graphics* screen. Selecting the Cell Size is covered in the following section.



**(F8) Vector Graphics:** You can skip this option since it is not applicable to *S3G Graphics Option*. The *S3G Graphics Option* and *EXTRA! Vector Graphics* cannot be selected simultaneously.

4. After you have selected the Cell Size (see "Selecting the Cell Size" on page 2-22), press **Esc** until you return to the main Selection Menu, then repeat Steps 1-3 for each session that you want to define for *S3G Graphics*.

---

## About Cell Sizes, Pels and Resolution

This section briefly explains how graphic data is presented on your display and explains how to choose a cell size for a *S3G Graphics* session. This section should be read prior to selecting a cell size since it will help you select the correct cell size.

The 3270 display is divided into units called cells. These cells are composed of units called pixels or pels. The following section explains pixels, cells and resolution and then tells you how to select a cell size that meet your needs.

### Character or Symbol Cells

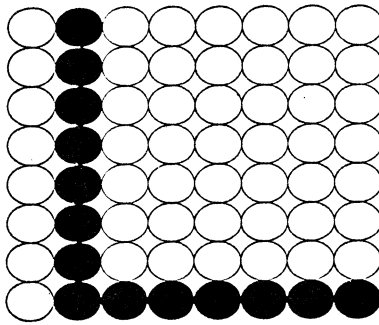
A Character or Symbol Cell can be defined as a rectangular space that contains the character or symbol that appears on your screen.

The size of the character cell is specified in pels, (for example, 9x16), and the position of the cell on the screen is designated by row and column coordinates. For example, a Model 3 3279 terminal is 80 character cells wide by 32 characters cells in length. The size and position of these cells are fixed.

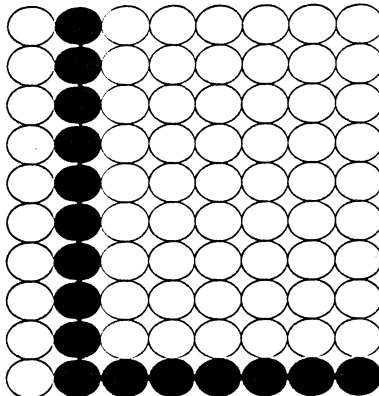
## Pels

Each character or symbol cell is composed of units called pixels or pels, which stands for picture elements. The size of the cell depends on the number of pels within the cell, with the larger cell size having more pels. The examples below demonstrate how pels are used to represent graphic data in a character or symbol cell. Example 2-1 shows a character cell that is 8 pels wide by 8 pels long. Example 2-2 shows a larger character cell that is 8 pels wide by 10 pels long.

**Example 2-1. 8x8 Cell Size**



**Example 2-2. 8x10 Cell Size**

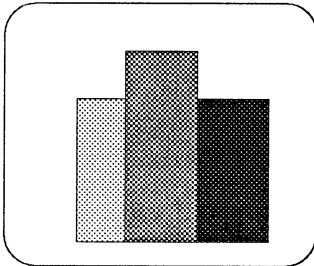


## Resolution

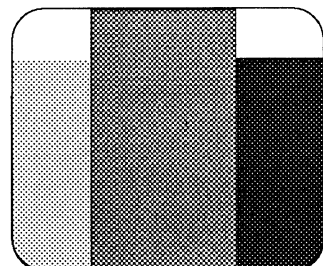
Resolution is determined by the number of pels that a screen contains. The larger the cell size, the more pels it will contain. And more pels means higher resolution and an enhanced graphic image. There is, however, a drawback to higher resolution: If the number of pels is greater than the resolution of the display screen, you may have to pan and scroll to view the entire image. The examples below demonstrate how a graphic image may appear on a display screen.

Example 2-3 represents a graphic image with the smallest cell size selected. The entire image fits on the screen, but the resolution is reduced due to the size of the image. Example 2-4 displays the same image with the largest cell size selected. The resolution is improved, but panning and scrolling is required to view the entire image. Somewhere between these two extremes is the optimum cell size. The optimum cell size can be defined as the cell size which provides the best resolution without panning and scrolling.

**Example 2-3. 8x10**



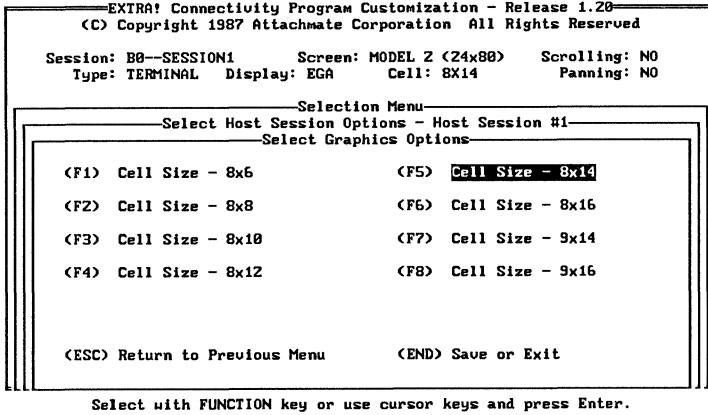
**Example 2-4. 9x16**



**Note:** The following section will help you determine the "optimum cell size" for your image. However, since some host graphic programs cannot adapt to different cell sizes, selecting the "optimum cell size" may trigger an error message from the host. If this occurs, either refer to your host application's documentation for the correct cell size or try selecting *S3G Graphics'* default 8x10 cell size. With this cell size, you can view your graphic image as it would appear on a 3279 S3G (model 3) terminal with an EGA adapter, without having to pan and scroll with your cursor keys.

## Determining Optimum Cell Size

If you wish to select a cell size other than the default 8x10 cell size, you can use the status area of the Select Graphics Option Menu to determine whether the selected cell size will result in panning and scrolling. The Select Graphics Option Menu is shown below.



When selecting the cell size, use the top two lines of the menu to determine if you will have to pan and scroll with your cursor keys in order to view your graphic image.

For example, assume you have an EGA Graphics Adapter and that your session is configured for a Model 2 - (24x80) screen. If you select a 9x16 cell size, you will need to pan and scroll in order to view the image in its entirety. That is, the Panning and Scrolling Parameters will both display "YES".

Now assume that you select (F5) - 8x14. This choice is the optimum cell size since it results in the highest resolution without panning and scrolling. The Panning and Scrolling Parameters in this case will both display "NO". If you choose the next largest cell size, (F6) - 8x16, you will notice that scrolling is required to view the entire image.

The chart below shows the recommended optimum cell size for each supported display adapter.

### **Recommended Adapter Cell Size Chart**

<b>Adapter</b>	<b>Model</b>	<b>Screen Size</b>	<b>Cell Size</b>
IBM	Model 2	24x80	8x8
CGA	Model 3	32x80	8x6
IBM	Model 2	24x80	8x14
EGA	Model 3	32x80	8x10
IBM	Model 2	24x80	8x14
VGA	Model 3	32x80	8x10
AT&T	Model 2	24x80	8x14
DEB	Model 3	32x80	8x10
AT&T	Model 2	24x80	8x14
CGA	Model 3	32x80	8x10

## Resolution Matching

Host graphic applications convert graphic data to Programmed Symbols before transmitting them to the 3270 terminal display. Programmed Symbols are character sets used by the host to construct graphic images. Each Programmed Symbol is the same size as the normal character cell used for displaying data in text mode.

Since character cell sizes vary among 3270 terminals, most 3270 host graphics applications will support a variety of cell sizes. The *S3G Graphics* program takes advantage of this capability by providing you with the option of changing cell sizes, and thus the resolution of the display.

The PC Display Resolution Table lists the resolution of the PC Graphics Display Adapters supported by the *S3G Graphics* program.

### PC Display Resolution Table

<b>Adapter</b>	<b>Resolution in Pels</b>
IBM Color Graphics Adapter	640 X 200
IBM Extended Graphics Adapter	640 X 350
IBM Video Graphic Array *	640 X 480
AT&T Color Graphics Adapter	640 X 400
AT&T Display Enhancement Board	640 X 400

\* The IBM Video Graphics Array has a resolution of 640 X 480. *S3G Graphics*, however, supports the EGA resolution of 640 X 350.

---

**3270 Display Resolution Table**

<b>Character Cell Size</b>	<b>Model 2 Display (80 X 25)</b>	<b>Model 3 Display (80 X 32)</b>
8 X 6	640 X 150	640 X 198
8 X 8	640 X 200	640 X 264
8 X 10	640 X 250	640 X 330
8 X 12	640 X 300	640 X 396
8 X 16	640 X 400	640 X 528
8 X 14	640 X 350	640 X 462
9 X 14*	720 X 350	720 X 462
9 X 16+	720 X 400	720 X 528

\* IBM 3270-PC Cell Size

+ IBM 3279 S3G Cell Size

By using the PC and 3270 Display Resolution Tables, you can match the resolution on your PC with that of a 3270 terminal. To determine the optimum resolution or picture elements on the display, multiply the display size (for example 80 X 32 for Model 3) by the cell size.

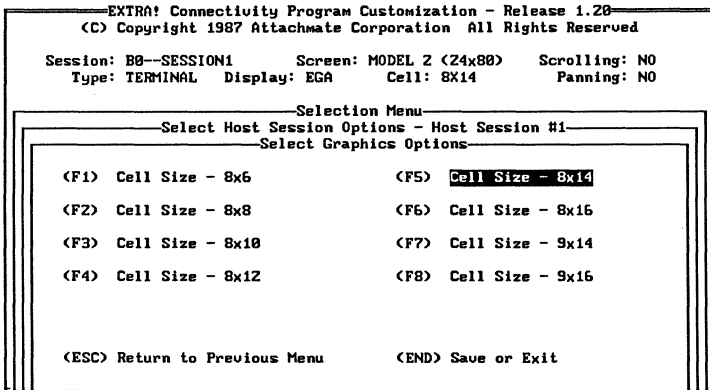
For example, if you wish to emulate a 3279 S3G (model 3) terminal with an IBM EGA adapter, choose the default 8 X 10 character size which will result in a display resolution of 640 X 330 pels. This closely matches the EGA 640 x 350 resolution as shown in the PC Display Resolution Table.



## Selecting The Cell Size

After reading the previous section and determining the Optimum Cell Size for your *S3G Graphics* session, you can select your cell size by following the steps below. It is assumed that you are at the Select Host Session Options menu as shown on page 2-12.

1. From the Select Host Session Option menu, select **F7 - S3G Graphics**.
2. After selecting **F7**, the following prompt will appear: "Enable S3G Program Symbol Graphics Option for this Session (Y or N)?" Type **Y** and press **Enter**.
3. You will advance to the Select Graphics Options menu shown below:



Select with FUNCTION key or use cursor keys and press Enter.

From this menu, you can select the appropriate cell size for your *S3G Graphics* screen, then press **Enter**:

**(F1) Cell Size 8x6:** Select when using a standard color graphics adapter (CGA resolution=640x200) to display 3270 S3G images.

**(F2) Cell Size 8x8:** Select when using a standard color graphics adapter (CGA resolution=640x200) to display 3270 Model 2 images.

**(F3) Cell Size 8x10:** Default. Select when using an Enhanced Graphics Adapter (EGA resolution=640x350) to display 3270 S3G images.

**(F4) Cell Size 8x12:** Select when using an AT&T Display Enhance-enhancement Board (DEB resolution=640x400) to display 3270 S3G images.

**(F5) Cell Size 8x14:** Select when using an Enhanced Graphics Adapter (EGA resolution=640x350) to display 3270 Model 2 images.

**(F6) Cell Size 8x16:** Select when using an AT&T Display Enhance-enhancement Board (DEB resolution=640x400) to display 3270 Model 2 images.

**(F7) Cell Size 9x14:** 3270-PC cell size. Use with mainframe applications that specifically require 3270-PC resolution.

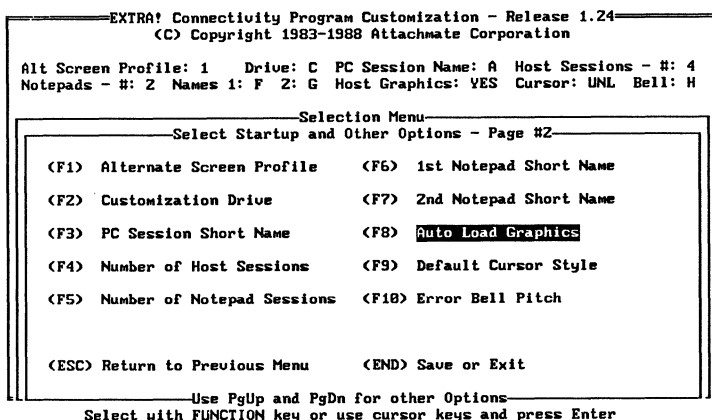
**(F8) Cell Size 9x16:** Standard S3G cell size. Select this option when the mainframe application cannot alter cell sizes or when you wish to view an image at its highest resolution.

4. After selecting a cell size, press **Esc** twice to return to the main Selection Menu.

## Selecting Startup and Other Options

If you would like *S3G Graphics Option* to automatically load with *EXTRA!*, follow the steps below:

1. From the main Selection Menu, select **F3** - Select Startup and Other Options.
2. **F3** will advance you to the Select Startup and Other Options menu. Press the **PgDn** key to advance to page 2 of the Select Startup and Other Options menu shown below:



Select the "Auto Load Graphics" option. You will be asked, "Automatically load Host Graphics (Y or N)?" Type **Y** and press **Enter** if you want *S3G Graphics* to automatically load with *EXTRA!*

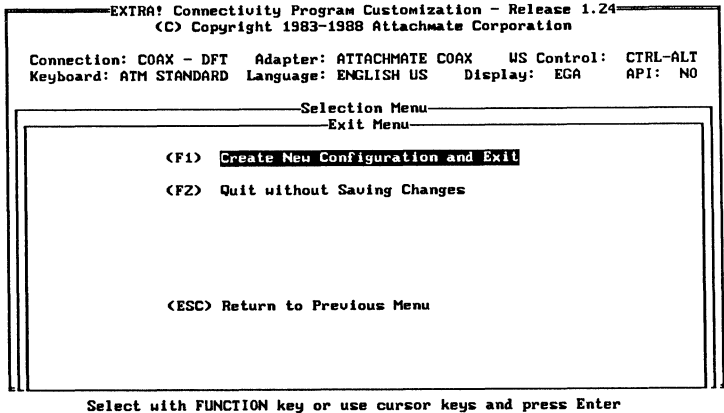
If you are using a floppy disk system, type **N** in response to the prompt, "Automatically load Host Graphics (Y or N)?" and press **Enter**. To load *S3G Graphics* manually, first load *EXTRA!* then use the DOS command line to invoke *S3G Graphics*. Refer to Chapter 3, "Using *S3G Graphics*" for more details on loading *S3G Graphics* from the DOS command line.

3. Press the **Esc** key until you return to the main Selection Menu.

---

## Saving your Customization and Exiting

1. To save your customization changes, press **End** from any menu to advance to the Exit Menu shown below:



2. At the Exit Menu, press **F1** - "Create New Configuration and Exit" if you want to save the customization changes. After selecting **F1**, you will return to the DOS prompt.

-OR-

At the Exit Menu, press **F2** - "Quit without Saving Changes" if you want to exit without saving your customization changes. After selecting **F2**, you will return to the DOS prompt.



# Using S3G Graphics

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## Introduction

This chapter tells you how to start *S3G Graphics* and how to perform the following tasks:

- Capturing a host-generated image to disk using S3G's Screen Capture feature.
- Printing a host-generated image at your local printer using S3G's print utility.
- Using the *PC Paintbrush-FRIEZE* interface to capture and edit a host-generated image on your PC, which can be printed on your local printer.

---

## Starting the S3G Graphics Option

Before you can use the *S3G Graphics Option*, your PC must meet the hardware and software requirements that are discussed in Chapter 1, "Installation." If you have not yet installed and customized *S3G Graphics*, return to Chapters 1 and 2 before continuing with this chapter.

The following instructions explain how to start the *EXTRA!* program, and how to access *S3G Graphics* from within *EXTRA!*

## Starting with a Hard Disk System

1. Activate the hard disk subdirectory where your *EXTRA!* and *S3G Graphics* files are stored. To activate your *EXTRA!* subdirectory, type the following after the DOS prompt:

```
cd\xxxx [ENTER]
```

where **xxxx** is the name of the subdirectory that contains your *EXTRA!* and *S3G Graphics* software.

2. At the subdirectory's DOS prompt, type:

```
extra [ENTER]
```

3. If you chose during customization to have *S3G Graphics* load automatically with *EXTRA!*, you can jump to a *S3G Graphics* host session window by pressing **Ctrl/Alt J B**, where **B** represents the short name of a session defined for *S3G Graphics*.\*

- OR -

If you did not choose to have *S3G Graphics* load automatically with *EXTRA!*, you can load *S3G Graphics* from the DOS prompt of a PC window by typing the following after the prompt:

```
G3270 [ENTER]
```

To jump to a *S3G Graphics* host session, press **Ctrl/Alt J B**, where **B** represents the short name of a session defined for *S3G Graphics*.\*

4. To access a host image from your active host window, follow the instructions provided in the user's manual that accompanied your mainframe graphics software.
- \* For more details on host sessions, refer to Chapter 1 of the *EXTRA!* User's Manual or refer to the *EXTRA!* Reference Card.

## Starting with a Floppy Disk System

1. Place your DOS diskette into drive A then reboot (**Ctrl/Alt/Del**) the system so that the DOS prompt appears.
2. Once DOS is loaded, remove the DOS diskette from Drive A and place the *EXTRA!* Program diskette into either Drive A or B. Make that drive the active drive by typing its letter and a colon (A: or B:) after the DOS prompt, and pressing **Enter**. For example, to make A the active drive, type the following after the DOS prompt:

**a :** [ENTER]

3. To load *EXTRA!*, type the following after the DOS prompt:

**extra** [ENTER]

4. After *EXTRA!* has loaded, remove the *EXTRA!* Program diskette and insert the *S3G Graphics Option* diskette. To load *S3G Graphics*, type the following after the DOS prompt in the PC window.

**G3270** [ENTER]

To jump to a host session window, press **Ctrl/Alt J B**, where **B** represents the short name of a session window defined for *S3G Graphics*.\*

5. To access a host image from your active host window, follow the instructions provided in the user's manual that accompanied your mainframe graphics software.
- \* For more details on host sessions, refer to Chapter 2 of the *EXTRA!* User's Manual or refer to the *EXTRA!* Reference Card.



---

## Text and Graphics Mode

While a host session can operate in either text or graphics mode, a S3G Graphics image will be visible only if the session is in graphics mode. The following subsections describe the difference between these two modes.

### Graphics Mode

When *S3G Graphics* is loaded, the host sessions will initially operate in graphics mode, allowing you to view the image. If you should switch the session to text mode, the session must be returned to graphics mode through the following key strokes:

**Ctrl/Alt G** or *WsCtrl PF20*

These same key strokes will return you to text mode. Each time **Ctrl/Alt G** or *WsCtrl PF20* is pressed, you will toggle or switch between graphics and text mode.

### Text Mode

When a host window session is in text mode, it may respond quicker than a graphics-mode session since it won't be "drawing" any graphic images. If the session contains both text and a S3G graphic image, the graphic image will not be visible. You must be in graphics mode to view the image.

## **Jumping Between Graphics and Text Windows**

When you jump to or activate a window that is configured for graphics, and that window was previously in graphics mode, the window will automatically enlarge to the full size of your PC screen. When you jump from this window to a text window (PC, Notepad, or Host), the graphics window will return to text mode and its original size. Jumping back to the original graphics window will reactivate full screen graphics mode.

For example, if you jump from a text session in window E to an active graphics session in window B, window B will enlarge to fill the full screen. When you jump from window B to another window, window B will return to text mode and its original size. Jumping back again to window B will return window B to full-screen graphics mode.

If you receive an error message stating that the host session window is not configured for graphics, press **Esc** to continue. To configure a session for graphics, see Chapter 2, "Customization."

---

## S3G Graphics Option Commands

Below is a list of *S3G Graphics*' most commonly used commands:

<u>3270 Function</u>	<u>PC Keyboard</u>	<u>122-Key Keyboard</u>
Start Screen Capture	<b>Ctrl/Alt S C</b>	<i>WsCtrl/PF17</i>
Capture a S3G Graphic	<b>Print*</b>	<i>PF17</i>
End Screen Capture	<b>Ctrl/Alt S C E</b>	<i>PF19</i>
Toggle Between Graphics and Text Mode	<b>Ctrl/Alt G</b>	<i>PF20</i>
Jump to Next Window	<b>Ctrl/Alt Spacebar</b>	<i>Jump</i>
Jump to a Specific Window	<b>Ctrl/Alt J [A-Z]**</b>	<i>WsCtrl [A-Z]</i>
Toggle Base Color Switch	<b>Ctrl/Alt BC</b>	<i>WsCtrl PF21</i>
Toggle Cursor and OIA On and Off	<b>Ctrl/Alt CO</b>	
Change Graphics Cursor Shape	<b>Ctrl/Alt CC</b>	
Toggle Case Switch	<b>Ctrl/Alt CA</b>	<i>WsCtrl Alt/PF24</i>
Quit <i>EXTRA!</i>	<b>Ctrl/Alt K</b>	<i>PF16</i>

\* To capture a graphic using an IBM Enhanced PC Keyboard or compatible, press **Alt/Scroll Lock** instead of the **Print** key.

\*\* A-Z represents the window's short name

## About Workstation Control Functions

All of *EXTRA!*'s workstation control functions are available while a session is in graphics mode. When you select any of these functions, however, your graphic image will temporarily disappear. This occurs because the workstation menu appears in text mode, causing the image to be invisible. You will automatically return to graphics mode as soon as the function is completed.

For more information on these commands, see "Manual Conventions" in the Preface of this manual, your *EXTRA!* Reference Card, or Chapter 1 of the *EXTRA!* user's manual.

---

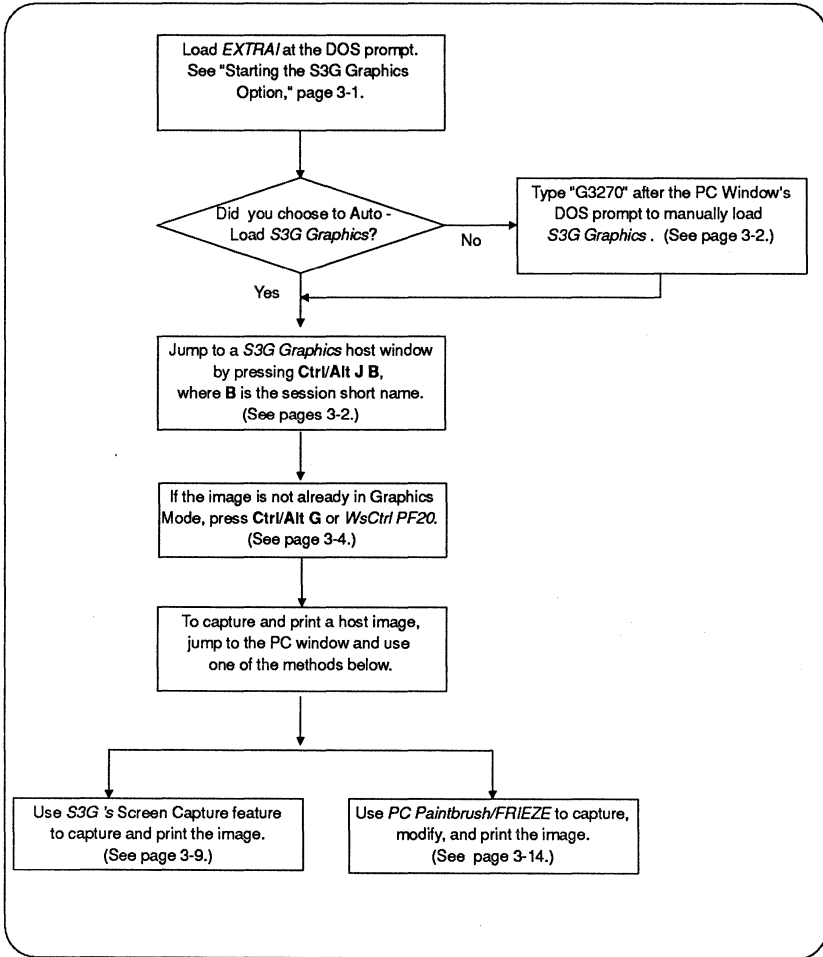
## Capturing and Printing S3G Graphic Images

*S3G Graphics Option* provides two methods of capturing and printing mainframe-generated images:

- *The S3G Graphics' Screen Capture Feature:* This method lets you capture your S3G image to disk and print it locally using the *S3G Graphics Print Utility*. The print out will display the full graphic image, regardless of what appears on the screen.
- *PC Paintbrush-FRIEZE:* This method lets you capture, then edit an image before printing. First, you load *FRIEZE* which is used to capture an image in a format that is compatible with *PC Paintbrush*. Then use *PC Paintbrush* to edit, display, and print the image locally.

## Getting Started With Screen Capture

The flowchart below provides an overview of the steps that you will take when capturing a host image. Note that the end of the flowchart provides two separate methods for capturing an image.

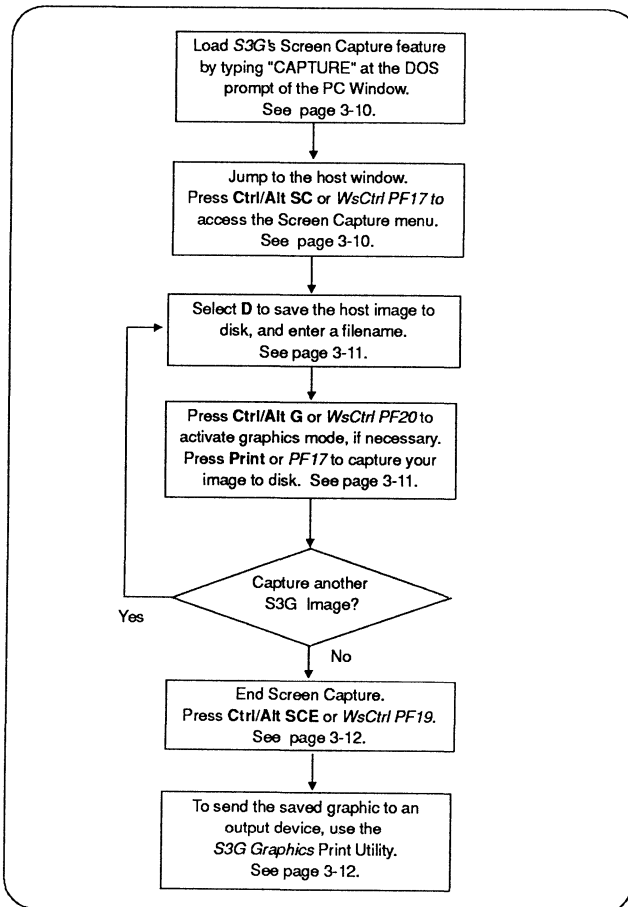


## Using S3G Graphics Screen Capture Feature

*S3G Graphics* uses its Screen Capture feature to capture host-generated graphics to disk. This means that the entire graphic image will be saved to disk, not just the image that appears on the PC screen.

**Note:** If you use this method to save and print an image, you cannot edit or modify it on your PC. If you would like to edit or modify the image locally, see "Screen Capture with PC Paintbrush/FRIEZE."

The flowchart below outlines the steps you should follow when using *S3G Graphics*' Screen Capture feature:



## Before You Begin

These instructions are written for the following scenario: You have installed and started *S3G Graphics Option*. You have accessed your mainframe's graphic software (i.e. GDDM, SAS Graph, etc.) and you now have the image on your screen that you wish to capture and/or print.

1. Jump to the PC window (if you are not already there). Load *Screen Capture* by typing the following after the DOS prompt:

**capture [ENTER]**

**Note:** *Screen Capture* only needs to be loaded once. It will remain resident until *EXTRA!* is removed from the PC.

2. Jump to the host window that contains the image you wish to capture. To access the Screen Capture menu, as shown below, press the following keys:

**Ctrl/Alt SC or WSCtrl PF17**

```
Screen Capture
-----
+ Capture Screen Data to:
P1 ..... PC Printer LPT1
D ..... PC Disk
E ..... End Screen Capture
ENTER (device selection)
```

3. The Screen Capture menu offers the following options:

**(P1)** Selecting this option is not recommended. Printing via this option may take longer than saving the graphic to disk and printing via the *S3G Graphics* Print Utility.

**(D)** Type **D** to save the image to disk. This option is covered in more detail below.

**(E)** Type **E** if you wish to end the screen capture process.

4. Select **D** from the above menu. You will be prompted to enter a filename. Specify the disk drive (if other than the default) and enter the filename, without an extension. For example, to save a graphic image to your default drive under the filename, IMAGE, simply type "IMAGE" after the prompt and press **Enter**. The Screen Capture menu will then disappear. See "About Filenames" for more information about filename extensions.
5. Press **Ctrl/Alt G** or *WsCtrl PF20* to activate graphics mode. Now press the **Print** key or your keyboard's equivalent to the **Print\*** key. As the screen is being captured, you will hear audio feedback:

1 beep = Graphics Capture Successful

2 beeps = Non-critical Disk Error

3 beeps = Critical Disk Error (disk drive may not be ready)

4 beeps = Disk is Full

**Note:** If more than one beep sounds, the image has not been captured.

- \* To capture a graphic using an IBM Enhanced PC Keyboard or compatible, press **Alt/Scroll Lock** instead of the **Print** key.



6. After you hear the beep, you can follow either of these two options:

Jump to another host window, then capture another image by placing the window into graphics mode and pressing **Print**. The filename extension increments each time you press **Print**. For example if your filename is **IMAGE**, the first captured graphic would be **IMAGE.G01** and the second graphic would be **IMAGE.G02**.

-OR-

End the screen capture process through these steps: Press **Ctrl/Alt SC** to recall the Screen Capture menu, then type **E** to end Screen Capture and close the file.

---

## Displaying and Printing a Captured Graphic

After you have captured an image using the *S3G Graphics* Screen Capture feature, you must use the *S3G Graphics* Print Utility to display or print the captured image. The steps below explain how to use this utility.

1. Jump to the PC window and type at the DOS prompt:

```
printg [ENTER]
```

2. The Print Utility will ask you for the filename of the graphic image you wish to display or print. Type the filename, with the extension, as shown in the example below:

```
IMAGE.G01 [ENTER]
```

3. The following prompt then will appear:

**Do you want to see the data on the CRT? [Y/N]**

If you would like to view your image prior to printing, type **Y** and press **Enter**. You then will be asked to identify your display adapter type. Select a display adapter and press **Enter** (If you have a VGA card, choose Option 2).

If you do not want to view your image prior to printing, type **N** and press **Enter**. You will be prompted to enter a code that identifies your printer. Enter the appropriate code and press **Enter** to begin printing.

4. If you selected **Y** in Step 3, your image will appear on the screen. After viewing, press **Q** to advance to the prompt: **Do you want to print out data? [Y/N]**.

Type **N** and press **Enter** if you do not want to print the image and would like to return to the DOS prompt of the PC window.

-OR-

Type **Y** and press **Enter** if you do want to print the image. The following prompt will then appear:

**The following graphics printers are supported.**

**1. IBM Color Jetprinter (IBM 3852 Model 2)**

**2. IBM Graphics Printer**

**Enter the code for your printer:**

5. Enter **1** or **2**, depending on your printer type and press **Enter**. Select **2** if you have an IBM compatible printer.
6. The Print Utility will display a "Begin Printing" message as it prints. When the image is finished, you will see a "done" message and you will return to the DOS prompt.

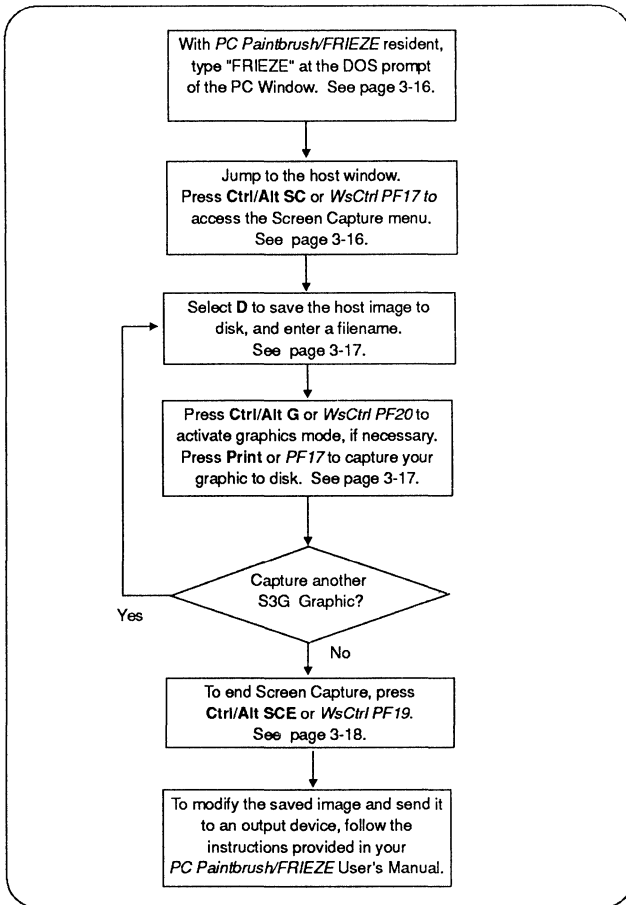
---

## Screen Capture with PC Paintbrush/FRIEZE

*S3G Graphics Option* provides a graphics interface which lets you store graphic images to disk in a format that is compatible with ZSoft's *PC Paintbrush/FRIEZE* program. After an image has been stored, it can be customized and printed locally using *PC Paintbrush*.

Before you can capture an image, you must load *Paintbrush/FRIEZE*. This software should already be installed on your PC. If *PC Paintbrush* has not been installed, refer to your *PC Paintbrush/FRIEZE* User's Manual for installation instructions.

The flowchart on the following page shows the steps that are necessary to capture and print a host image with *FRIEZE*.



## Before You Begin

These instructions are written for the following scenario: You have installed both *PC Paintbrush/FRIEZE* and *S3G Graphics*, and *S3G Graphics* is running. You have accessed your mainframe's graphic software (i.e. GDDM, SAS Graph, etc.) and you now have the image on your screen that you wish to capture and/or print.

1. Jump to the PC window (if you are not already there). To load *PC Paintbrush/FRIEZE*, activate the hard disk subdirectory where your *PC Paintbrush/FRIEZE* software is stored. To activate this subdirectory, type the following after the DOS prompt:

**cd\xxxx [ENTER]**

where **xxxx** is the name of the subdirectory that contains your *PC Paintbrush/FRIEZE* software.

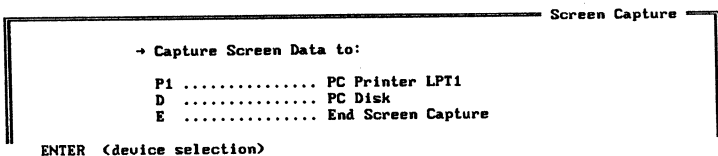
2. When the subdirectory's DOS prompt appears, type the following command after the prompt:

**frieze [ENTER]**

**Note:** The command you type to invoke *FRIEZE* depends on the version that you are using. If you are using a later version of ZSoft's *PC Paintbrush-FRIEZE* (7.0 or higher), refer to Appendix B, "Screen Capture Specifications."

3. Jump to the host window that contains the host image you wish to capture. To access the Screen Capture menu, as shown below, press the following keys:

**Ctrl/Alt SC or WScrl PF17**



4. The Screen Capture menu offers the following options:

(P1) Selecting this option is not recommended. Printing via this option may take longer than saving the graphic image to disk and printing via the *PC Paintbrush/FRIEZE* print utility.

(D) Type **D** to save the image as a .PCX file, which is compatible with *PC Paintbrush*, then press **Enter**. This option is covered in more detail below.

(E) Type **E** if you wish to end the screen capture process.

5. Select **D** from the above menu. You will be prompted to enter a filename. Specify the disk drive (if other than the default) and enter the filename, without an extension. The filename automatically receives a .PCX extension which is compatible with *PC Paintbrush*. See "About Filenames" below for more information. After entering your filename, the Screen Capture menu will disappear.

6. If not already in graphics mode, press **Ctrl/Alt G** or *WsCtrl PF20*. Now press the **Print** key or your keyboard's equivalent to the **Print\*** key.

If you hear one or more beeps while the image is being captured, it indicates that the image was not successfully captured. Please count the number of beeps that occur since this information can be helpful to *ZSoft's* Technical Support. The most common capture errors are listed below:

2 beeps = DOS Conflict Problem

4 beeps = Bad Printer Cable

**Note:** If more than one beep sounds, the image has not been captured.

- \* To capture a graphic using an IBM Enhanced PC Keyboard or compatible, press **Alt/Scroll Lock** instead of the **Print** key.

7. After you successfully capture the image, you can follow either of these two options:

Jump to another host window and capture another S3G graphic image by placing the window into graphics mode, if necessary, and pressing **Print**.

-OR-

End the screen capture process through these steps: Press **Ctrl/Alt SC** to recall the Screen Capture menu, then type **E** to end *Screen Capture* and close the file.

## Editing and Printing Graphic Images with PC Paintbrush

Once you have captured a host-generated image with the *FRIEZE* interface, you can locally edit and print the image. For instructions on using *PC Paintbrush*, refer to your *PC Paintbrush/FRIEZE* User's Manual.

---

## About Filenames

Each time you capture an image to disk, *S3G Graphics* creates a file with the filename you specified at the Screen Capture menu. The filename extension varies, depending on the screen capture method used. If you captured the image using *S3G Graphics*' Screen Capture feature, your filename will have an extension such as G01, G02 etc. If you captured the image using *FRIEZE*, your filename will have a .PCX extension.

## S3G Graphics Screen Capture Filename Extensions

In order for your file to be recognized by the *S3G Graphics* Print Utility, it must end with an extension such as .G01, .G02 etc. For example, if you selected "IMAGE" as your filename, the first time you press **Print** it will automatically be stored under the filename:

**IMAGE.G01**

The file extension will continue to increment with each screen capture that you request. For example, pressing **Print** again creates the file:

**IMAGE.G02**

If you capture a window image when it's in text mode, the text is added to the original disk file that you specified when you set up *S3G Graphics* Screen Capture feature. This text file closes only when you terminate the screen capture process.

## PC Paintbrush/FRIEZE Filename Extensions

When you capture an image using *FRIEZE*, your filename automatically receives a .PCX extension, which allows the file to be edited by *PC Paintbrush*. If you captured your graphic image using *S3G Graphics*' Screen Capture feature, you will not be able to edit the image with *PC Paintbrush* until you recapture the image using the *FRIEZE* interface. This occurs because *PC Paintbrush* will only load files in .PCX format.





# Problem Determination

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## Introduction

This trouble-shooting chapter will help you solve some problems that may come up while using *S3G Graphics Option*. It also explains possible causes of the problem.

If questions should come up that are not answered in this chapter or elsewhere in the manual, please call Attachmate's Technical Support department at (206) 644-4010, or 1-800-888-1187 (Outside Washington).

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## Potential Problems

### **Problem: Text is Incorrectly Displayed on the Screen.**

#### **Cause:**

The logical unit (LU) is configured for the wrong terminal model number.

#### **Solution:**

Your logical unit must be reconfigured as a Model 2 or 3.

### **Problem: Captured Image Cannot be Edited.**

#### **Cause:**

You have captured your S3G image using *S3G Graphics'* Screen Capture feature, instead of using the *PC Paintbrush/FRIEZE* method. The *PC Paintbrush/FRIEZE* method allows you to edit an image after the capture.

#### **Solution:**

Capture the S3G image using *PC Paintbrush/FRIEZE*. After using *PC Paintbrush/FRIEZE*, you can edit and modify the image, and the text within that image. Refer to Chapter 3, "Using S3G Graphics," for more information on *PC Paintbrush/FRIEZE*.

### **Problem: Reason Code #1 Appears while Using GDDM.**

While you are using the Graphical Data Display Manager (GDDM), you may receive the following error message:

```
ADM 0275 W GRAPHICS CANNOT BE SHOWN. REASON CODE:01
```

**Cause:**

The LU on the host end is not configured for graphics.

**Solution:**

You will need to reconfigure the LU for Extended Data Stream (EDS).

### **Problem: Reason Code #3 Appears while Using GDDM.**

While using GDDM, you also may receive this error message:

```
ADM 0275 W GRAPHICS CANNOT BE SHOWN. REASON CODE:03
```

**Cause:**

You have either not configured your *EXTRA! Connectivity Software* for *S3G Graphics* or *S3G Graphics* has not been loaded.

**Solution:**

You must reconfigure *EXTRA!* for *S3G Graphics* and load the *S3G Graphics* software. Refer to Chapter 2, "Customization," for instructions.

Refer to the IBM publication "GDDM Messages" (Publication #SC 33-0150-1) for additional GDDM error messages.

### **Problem: Program Malfunctions with SAS Graph**

**Cause:**

You may be using SAS Graph without a Graphical Data Display Manager (GDDM) driver.

**Solutions:**

Contact the SAS Institute to find out which GDDM driver should be used.

If you do not have a GDDM driver, select a 9x16 cell size and pan and scroll using the arrow keys to see the entire host image.

**Problem: Graph Comes Up as Garbled Symbols**

When a host image is displayed on your PC as an outline filled with miscellaneous symbols, your display is in text mode when it should be in graphics mode.

**Cause:**

The host computer sends the image as a set of programmed symbols. Before the image can be received on your PC screen, it must be translated from symbols to graphics, so your PC must be in graphics mode.

**Solution:**

Switch from text mode to graphics mode by pressing **Ctrl/Alt G**.

**Problem: Only Part of Host Image Appears on PC Screen**

**Cause:**

If you would like the entire host image to appear on your PC screen, but only one corner or area of the image is visible, you may have selected a cell size which is too large.

**Solution:**

Select a smaller cell size in the Customization utility.

## **Problem: Wrong Colors or Characters Are Displayed**

### **Cause:**

If your screen shows abnormal display characteristics, you may have selected an invalid cell size. An abnormal display may also appear if your Enhanced Graphics Adapter (EGA) does not have enough memory to support *S3G Graphics Option*.

### **Solution:**

During customization (Chapter 2), select a larger cell size.

If the error message continues to appear, check to make sure that your enhanced graphics adapter has at least 128K of memory. This is the minimum amount of memory required for *S3G Graphics Option*.

## **Problem: Unable to Use ZSoft's PC Paintbrush/FRIEZE 7.0 or Higher for Screen Capture**

### **Cause:**

The syntax of the FRIEZE command line is incorrect.

### **Solution:**

Refer to Appendix B, "Screen Capture Specifications," for instructions on how to change the FRIEZE BIOS flag parameter.

## **Problem: "PROG 957" Error Message Appears When Trying to Invoke Graphics**

### **Cause:**

The host cell size that was selected at sysgen time is not compatible with the S3G cell size that you selected for your PC.

### **Solution:**

If the host cell size was configured for 8 X n, with n representing the vertical size of the cell, you must reconfigure the cell size for 9 X n. If the host cell size was configured for 9 X n, reconfigure the cell size for 8 X n.

**Problem: AT&T 6300 Won't Run Graphics with DEB Card**

**Cause:**

The display system has been incorrectly installed.

**Solution:**

Install jumpers on pins number 4, 5, and 6 of the DEB card. The monitor must be plugged into the DEB card, which is attached to the normal display card.



# Appendix A

## Supplemental Reading

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The following publications can help you learn more about graphics, 3270 emulation, and your personal computer:

- EXTRA! Connectivity Software User's Manual, Attachmate Publication #999-00395.
- PC Paintbrush User's Guide, A ZSoft Corporation Publication.
- Microsoft Paintbrush User's Guide, Microsoft Publication #990973030-600-R01-0986
- GDDM Messages, IBM Publication #SC 33-0150-1.
- GDDM Image Symbol Editor, IBM Publication #SC 33-0329-0.
- IBM 3270 Personal Computer Control Program Guide, IBM Publication #SA 23-0221.
- IBM 3270-Information Display System Data Stream Programmer's Reference, IBM Publication #GA 23-0059.
- IBM 3270 Information Display System 3274 Control Unit Description and Programmer's Guide, IBM Publication #GA 23-0061.
- IBM 3270 Information Display System: Color and Programmed Symbols, IBM Publication #GA 33-3056.



- 3278 Display Station Operator's Guide, IBM Publication #GA 27-2890.
- IBM PC Guide to Operations, IBM Publication #6025000.
- DOS 3.2 Disk Operating System Reference, IBM Publication #6139256.
- DOS 3.3 Disk Operating System Reference, IBM Publication #80 x 0667.

# Appendix B

## Screen Capture Specifications

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### Frieze Version 7.0 or Later

To load *FRIEZE* Version 7.0 or later with *S3G Graphics*, you will need to alter the *FRIEZE* command line and create a separate batch file for loading *FRIEZE*. Follow the instructions below:

1. Pull up your hard disk subdirectory that contains the *PC Paintbrush/FRIEZE* software. If working off a floppy disk system, make sure *PC Paintbrush/FRIEZE* is loaded.
2. At the subdirectory's DOS prompt type:

```
TYPE PAINT.BAT [ENTER]
```

3. Your screen will display, among other things, a *FRIEZE* command line similar to the example shown below.

```
FRIEZE IBMJET P1 0 1EGA 640 350 4
```

4. Write down the parameters of the *FRIEZE* command line and change the BIOS flag parameter (the parameter in **bold**) from **0** to **1**. Now create a batch file called "FREZE.BAT" which contains the parameters you copied. Make sure the BIOS Flag Parameter is set to **1** as shown in the example below.

```
FRIEZE IBMJET P1 1 1EGA 640 350 4
```

5. You can now load *FRIEZE* from within *EXTRA!*, by typing "FREZE", instead of "FRIEZE".

---

## Other Screen Capture Specifications

*S3G Graphics'* Screen Capture feature will support any custom Screen Capture utility if the program conforms to the following specifications:

- The program must install itself as an Interrupt 16 (10 hex) function, then exit and remain resident; it must replace the original interrupt S3G with a pointer to its Screen Capture process. When the program receives a Program Interrupt 16, it must pass all functions except function 75(4B hex) to the original interrupt S3G (Video I/O).
- Interrupt 16 function 75 is the Screen Capture function, and it will have the following registers set:

AH = 75(4B hex)

CL = 02

AL = 02

ES:BX = Pointer to string containing file specification, terminating in 00 hex.

- The utility must return all registers intact.

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