TIGA GRAPHICS ACCELERATOR

USER MANUAL

TIGA GRAPHICS ACCELERATOR

USER MANUAL

VERSION 1.1
12/01/91

Preface

QUICK INSTALLATION

STEP 1 : Insert the TIGA floppy into drive A, and change to drive A.

STEP 2 : Type SURVEY. If detects a conflict, see chapter 2.2 guide for instructions. If it doesn't, power off PC and install TIGA board into a vacant slot.

STEP 3 : Connect the VGA passthrough cable to your VGA board. Connect your monitor cable to your TIGA board and turn on your PC.

STEP 4 : Insert the TIGA floppy into drive A, and change to drive A.

STEP 5 : Type INSTALL to install TIGA and follow the instruction to setup TIGA environment. Refer to chapter 2.3 - 2.7 for detail description.

How to Use This Manual

This document contains the following chapters:

Chapter 1 Introduction

Provides an overview of the key features for TIGA board

Chapter 2 Getting Started

Identifies hardware and software system reqiurements; provides step-by-step installation procedures

Chapter 3 How to Expand TIGA Board

Tells how to add memory to the TIGA board

Style and Symbol Conventions

This document uses the following conventions.

. Program listings, program examples, interactive displays, filenames, and symbol names are shown in a special font. Some examples use a bold version to identify code, commands, or portions of an example that you enter.

Here is an example of a system prompt and a command that you might enter:

A: tigaset

. CTRL/V, ^V, and CTRL V are syonymous and mean to press the keyboard CTRL (CTRL on some keyboards) and the V keys together.

. <CR>,<RETURN>,<ENTER> are synonymous and mean to press the keyboard ENTER or RETURN keys.

. <SP> are synonymous and mean to press the keyboard **SPACE BAR.**

. <ESC> are synonymous and mean to press the keyboard ESC key.

Information About Warnings

This book contains cautions and warnings. The information in a caution or a warning is provided for your protection. Please read each caution and warning carefully.

> *This is what a warning looks like.*
> *A warning descibes a situation that could potentially cause harm to you.*

Trademarks

Anvil 1000 and *Anvil 5000* are trademarks of Manufacturing Consulting Services,Inc.

AutoCAD Release 10, *AutoShade*, *AutoSketch* are registered trademarks of Autodesk, Inc.

CADKEY 3 V3.5, *CADKEY Render*, *DataCAD Velocity* are trademarks of CADKEY, INC.

DesignCAD 2D and *DesignCAD 3D* are trademarks of American Small Business Computing.

DGIS and *GSS*CGI* are trademarks of Graphic Software Systems, Inc.

Drawbase is trademark of CADworks, Incorporated.

GEM Artline,*GEM Presentation Team*, and *Digital Research Draw Plus* are trademarks of Digital Research, Inc.

Generic CADD is a trademark of Generic Software.

GSPOT I,II, and *III* are trademarks of Pixelab, Inc.

HALO is a trademark of Media Cybernetics, Inc.

HOOPS is a trademark of Ithaca Software.

IBM PC, *IBM PC/AT*, and *IBM PC/XT* are trademarks of International Business Machines.

Intel,*i286*, and *i386* are trademarks of Intel Corp.

MasterCAM is a trademark of CNC Software.

MS-DOS, Presentation Manager, and *Windows 3.0* are trademarks of Microsoft Corp.

Microstation is a trademark of Intergraph Corporation.

MultiSync and *MultiSync Graphics* are trademarks of NEC Home Electronics (U.S.A.) Inc.

OrCAD/SDT III, OrCAD PCB II, and *OrCAD VST* are trademarks of OrCAD L.P.

RoboCAD 2.2 is a trademark of Robo Systems International, Inc.

TIGA is a trademark of Texas Instruments Incorporated.

Ventura Publisher/GEM is a registered trademark of Ventura Software, Inc.

X Window System is a trademark of the Massachusetts Institute of Technology.

Xoftware is a trademark of AGE.

Contents

Figures

Tables

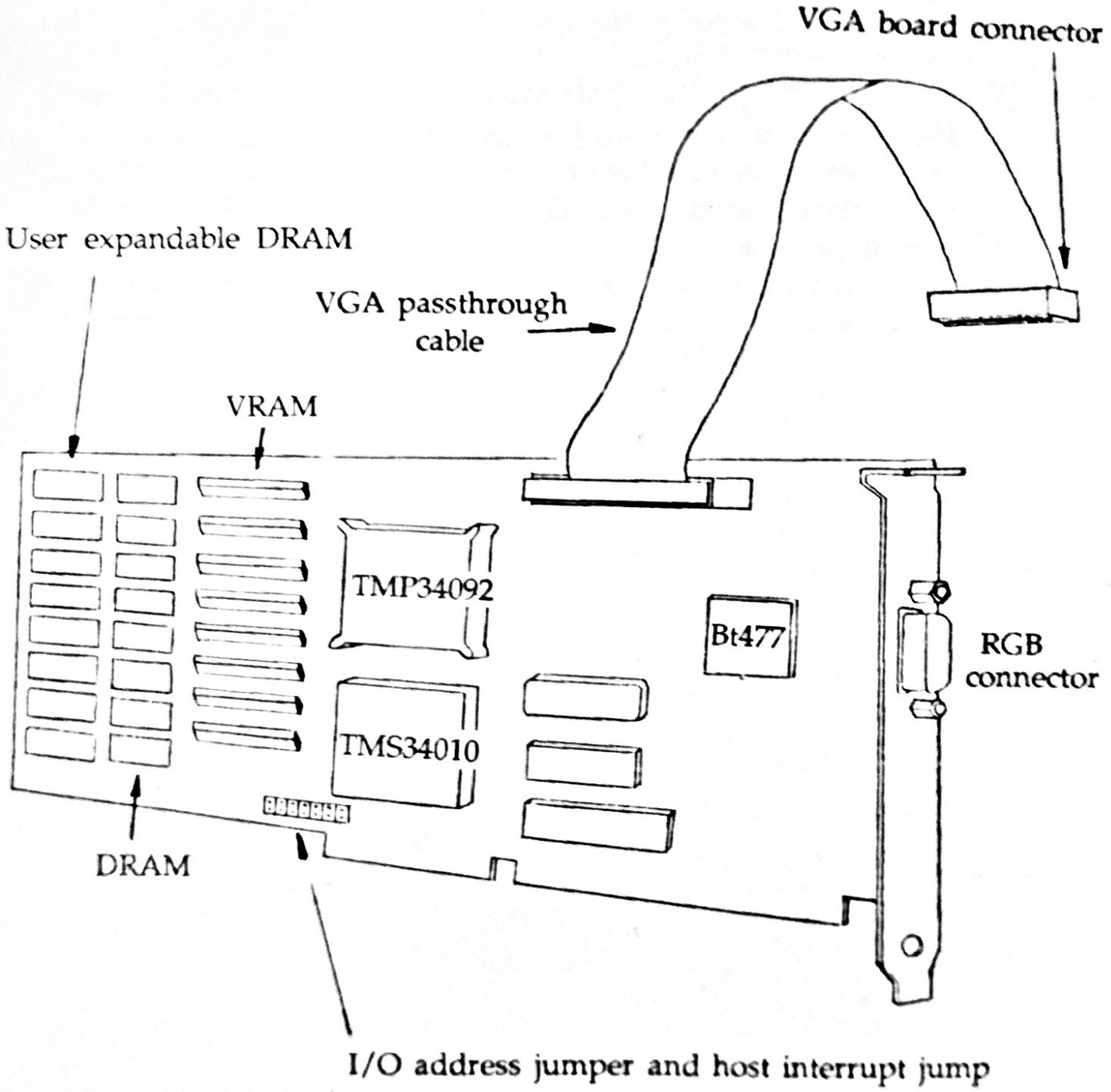
Chapter 1

Introduction

The TIGA board is a high-performance, intelligent video board. Its use of the TMS 34010 and TIGA software interface improves user productivity. And, it is also an intelligent video display board that was developed for industry standard (ISA and EISA) personal computers. It is based upon the Texas Instruments TMS34010 graphics processor and the TIGA software interface.

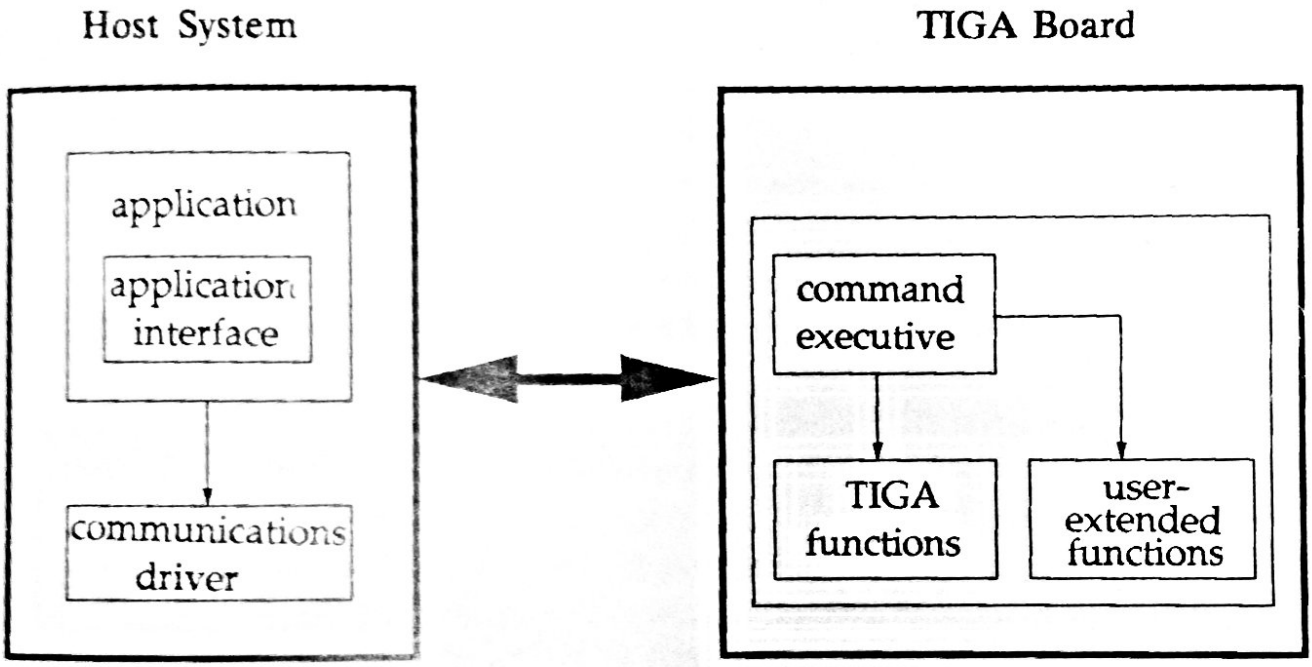
The TIGA and TMS34010 combination improves productivity in windowing environments, such as Microsoft Windows, by offerig better performance and more viewable information than a standard VGA. Because the TIGA board uses a programmable graphics processor, it is also easy to use, maintain, and expand. A single driver supports multiple screen resolutions and colors. Figure 1-1 shows the board layout.

Figure 1-1 TIGA board Layout



The Texas Instruments Graphics Architecture (TIGA) is a software interface standard for the TMS340 family of graphics system processors. Figure 1-2 shows the graphics processing relationship between the TMS340 and host proessors.

Figure 1-2 TMS340 and Host Processor Relationships



The TIGA software interface provides:

- A standard communication protocol between the host processor and the TMS340 microprocessor.
- The ability to devide tasks between the TMS340 processor and the 80x86 host so that the graphics-intensive funtions can run in parallel, thus improving system efficency.
- The ability to customize TIGA to take advantage of any added feature available on the target TMS340-based board.

- The ability to develop portable appications and appication drivers for the diverse range of TMS340-based systems.

- A software investment by being upward compatible with the next-generation graphics processor - the TMS34020 - and its TMS34082 floating-point coprocessor.

Your TIGA board uses the TMS34010 graphics processor, which combines the best features of a general-purpose processor and a graphics controller.

The instruction set for the TMS34010 provides a full complement of general purpose instructions (e.g. jumps and calls) and supports pixel drawing, window, and Boolean operations. The TMS34010 architecture supports a variety of pixel sizes, frame buffer sizes, and screen sizes.

On-chip funtions have been carefully selected so that no funtion ties the TMS34010 to a particular display resolution. This enhances the potability of graphics standards, such as MIT's X, CGI/CGM, PHIGS, and Microsoft's Windows and Presentation Manager.

The TIGA board key features are :

☐A powerful 60 MHz TMS34010 graphics processor.

☐An integrated design using the TMP34092 VGA interface chip

☐Variable display resolutions :
from 640x480 non-interlaced upto 1280x1024 interlaced

☐Multiple Color Depth :
. 256 colors/gray levels
. 16 colors/gray levels
. 4 colors/gray levels
. 2 colors/gray levels

☐ VGA passthrough

☐Compatibility with stardard and high-range multisyncs and dual scan rate monitors.

☐ 1 MByte video RAM (VRAM)

☐1 MByte dynamic RAM (DRAM)
user expandable to 2 MB

☐Supports the TIGA software standard version 2.0 or later

☐ Windows 3.0 driver

☐AutoCAD/386 R10,R11 and AutoShade/AutoSketch driver

☐IBM PC/XT form factor with IBM PC/AT bus connections according to EISA Specification revision 3.11

Chapter 2

Getting Started

2.1 System Requirements

In addition to the items that were shipped with your TIGA board, You will need the items listed in table 2-1.

Table 2-1 Hardware Requirements

Requirement	description
Memory	450 Kbytes of free system memory 2 Mbyte of fixed-disk space
Host PC	An IBM PC/AT, IBM PC/XT, or 100% compatible PC with a hard-disk system and a floppy disk drive
Display	Monochrome or color
Slot	One 8-bit or 16-bit slot (16-bit is recommended)
Graphics card	An EGA or VGA-compatible graphics display card with feature connector.
Operating system	MS-DOS or PC-DOS (version 3.0 or higher)
Miscellaneous materials	A small Phillips or flat-blade screwdriver, depending upon the type of screws used in your PC

2.2 Installing Your TIGA board

2.2.1 Determining Your System Configuration

Accompaning your TIGA board is a diskette. On this diskette are utilities and drivers that you could use to install your TIGA board.

- ☐The first utility is named survey; it checks for conflicts between the TIGA board I/O address and interrupt settings and the other boards that are installed in your PC.

- ☐The second utility is named tigaset. It installs the TIGA software and sets up the TIGA environment.

Some peripheral hardware installed in your PC may conflict with TIGA board bus assignments. To avoid potential problems, do the following to survey your PC environment :

Step 1 : Insert the Diskette into your floppy drive A

Step 2 : Execute the survey program by entering

A:survey <ENTER>

After a short pause, the utility displays a message similar to this :

Ready for TIGA board at I/O Address 290-29F using Interrupt 7.
This is the default setting for I/O address.
This is the default setting for the interrupt.

The default location for the I/O address is 0x290; the default setting for the interrupt is 7.

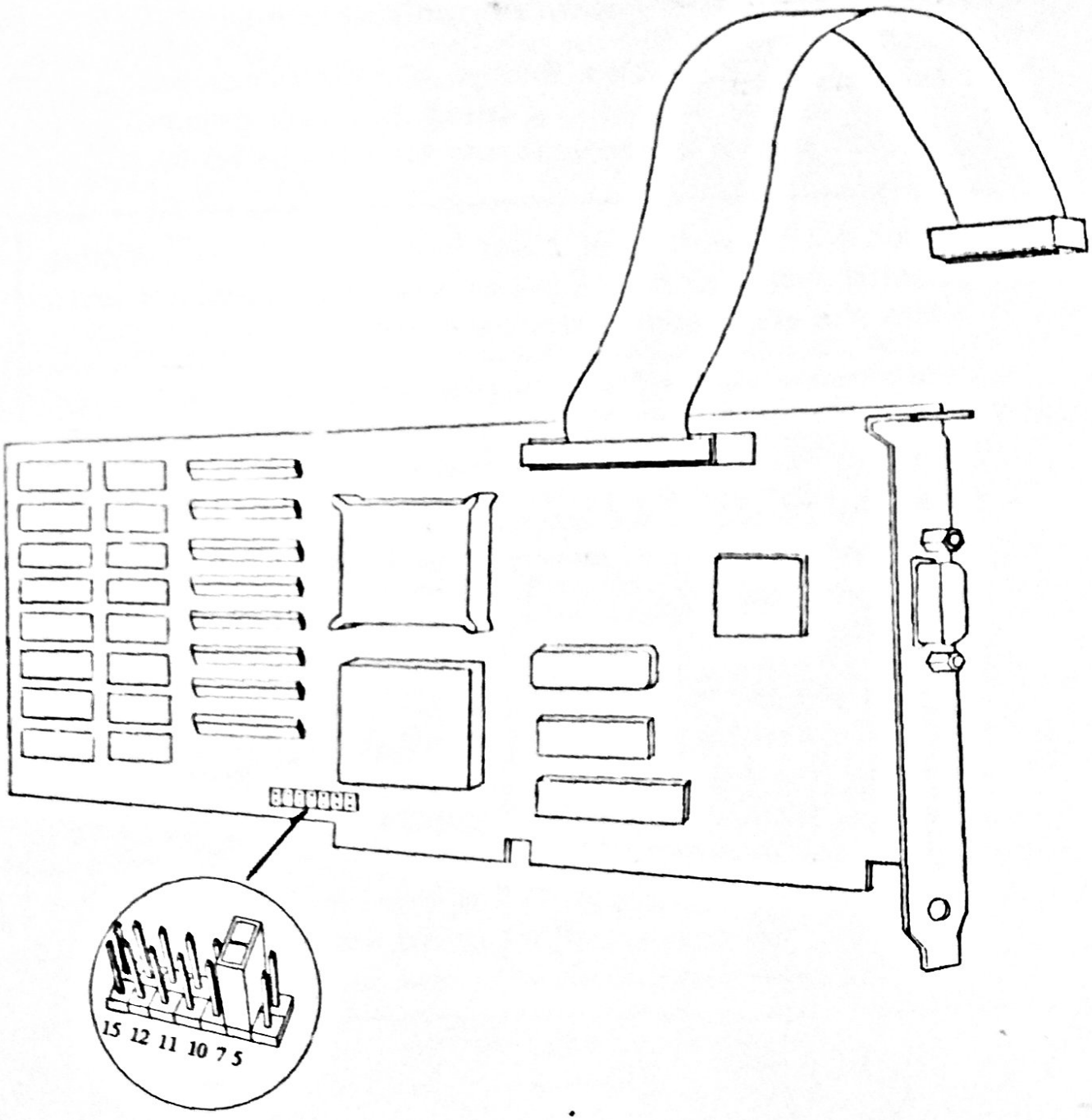
If there is a potential conflict, the message will indicate the steps that you must take to resolve the problem. See next session jumpers setting to reconfigure your board.

2.2.2 Jumpers Setting

> *Do not touch your TIGA board before discharging any static electricity from your body - ground yourself by touching a metal object. You could possibly damage board circuitry.*

Figure 2-1 shows the jumper locations and their respective default settings. In most cases, you can leave the jumpers in the default position.

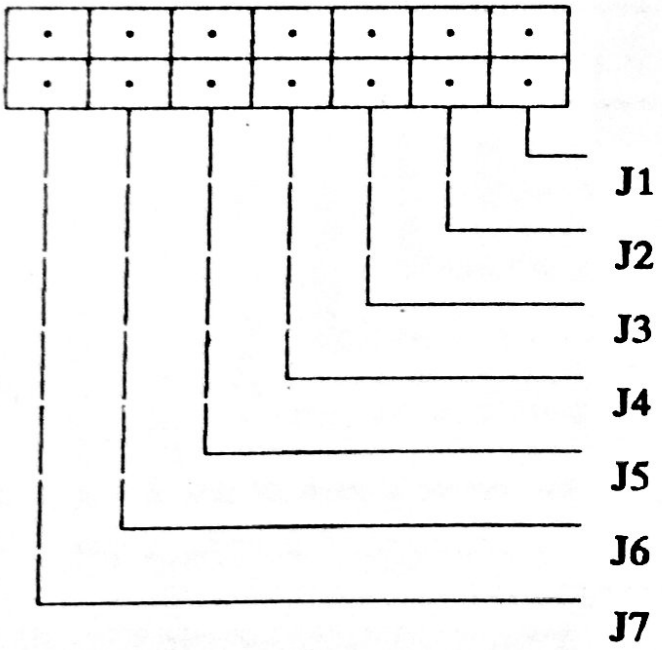
Figure 2-1 I/O Address Space and Host-Interrupt Jumper Locations



Your TIGA board communicates with the host computer by means of 16 I/O address locations and a hardware interrupt. Your TIGA board is factory preconfigured to respond at addresses 290 - 29F and hardware interrupt 7.

If these locations are occupied by another add-in peripheral, such as a local area network (LAN) card, an address conflict occurs because two hardware detects potential conflicts and warns you that relocation is necessary. To resolve this conflict, relocate either your TIGA board or the offending hardware to a new location.

The I/O address and host interrupt can be chaged from the factory preset by movig jumpers (see Figure 2-1). The following shows the jumpers identification :



Setting / Jumper	OPEN	CLOSE
J1	I/O base 290-29F	I/O base 280-28F
J2	×	IRQ 5
J3	×	IRQ 7
J4	×	IRQ 10
J5	×	IRQ 11
J6	×	IRQ 12
J7	×	IRQ 15

Note:

1.The J2-J7 could be set only one at tne same time.

2.If you don't set any Hardware interrupt, the TIGA Configure to IRQ 7 automatically.

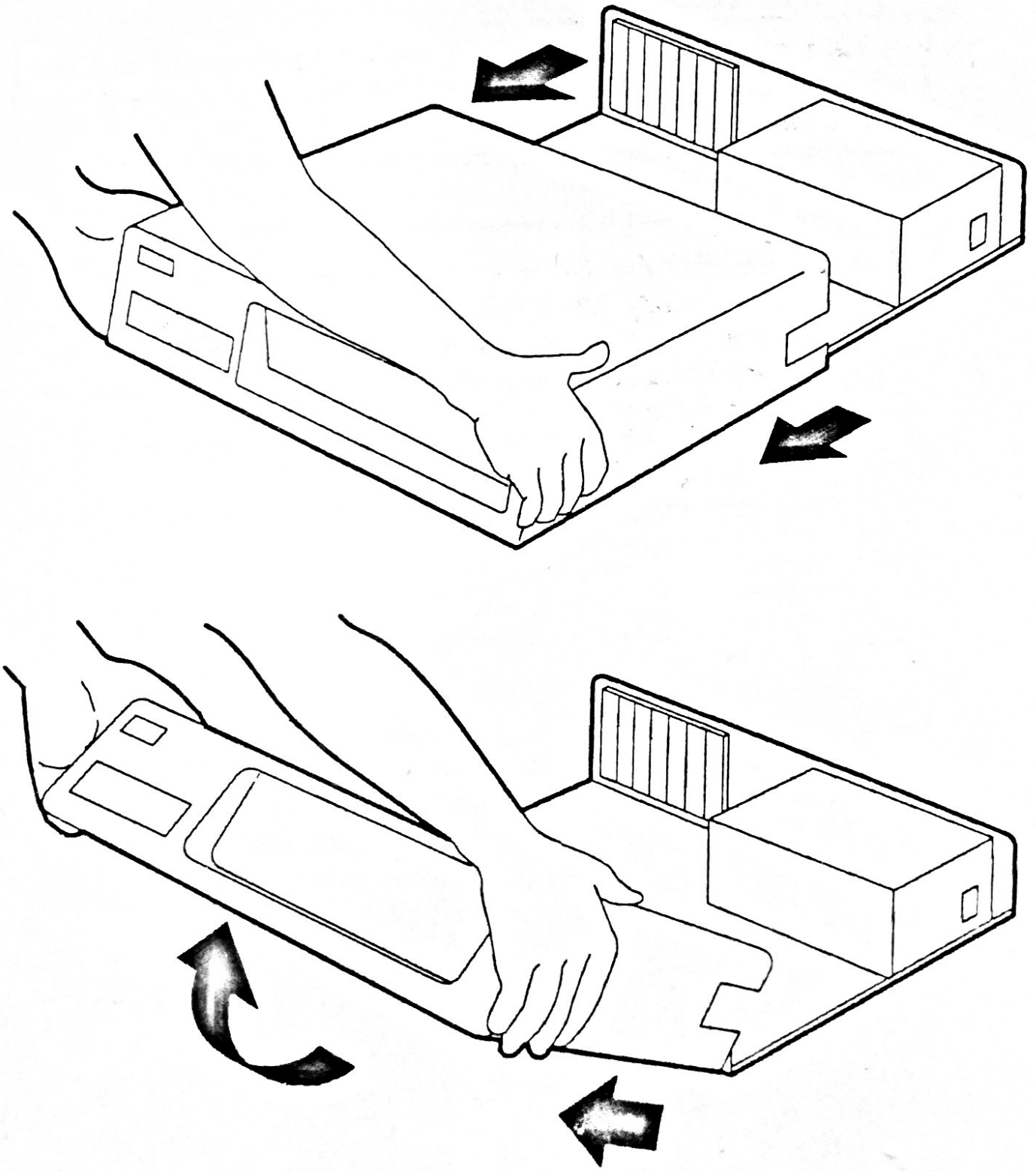
2.2.3 TIGA Board Installation Procedures

To install the TIGA board, do the following:

> *Turn off power to your PC, monitor(s), peripherals, and the target system (if applicable) before removing or replacing any circuit cards or cables.*

Step 1 : Remove the cover from your PC by following the instructions contained in your PC's operator menual. Typically, this entails removing the screws from the back of your PC and sliding the cover off as shown in Figure 2-2.

Figure 2-2 Removig the PC Cover

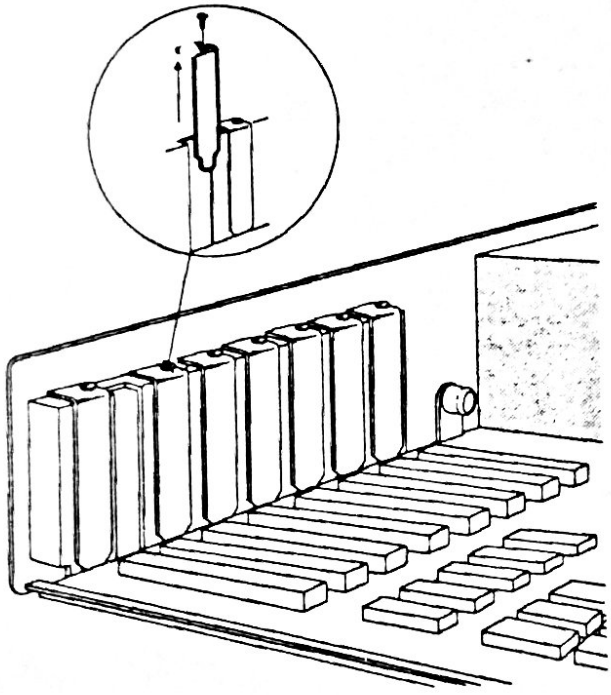


Step 2 : Remove the mounting bracket from an unused 8-bit or 16-bit slot (see Figure 2-3) and save the screw for reinstallation. A 16-bit slot is recommended for the best performance.

☐If you are usig only one display monitor with your system, find an open slot immediately adjacent to your VGA board. You may wat to relocate the VGA board to a different bus slot to accommodate this configuration.

☐If you are using two monitors on your system, one for the TIGA board and the other for a primary display, refer to *Section 2.5, Setting Up a Dual Monitor System.*

Figure 2-3 Removing the PC Mounting Bracket



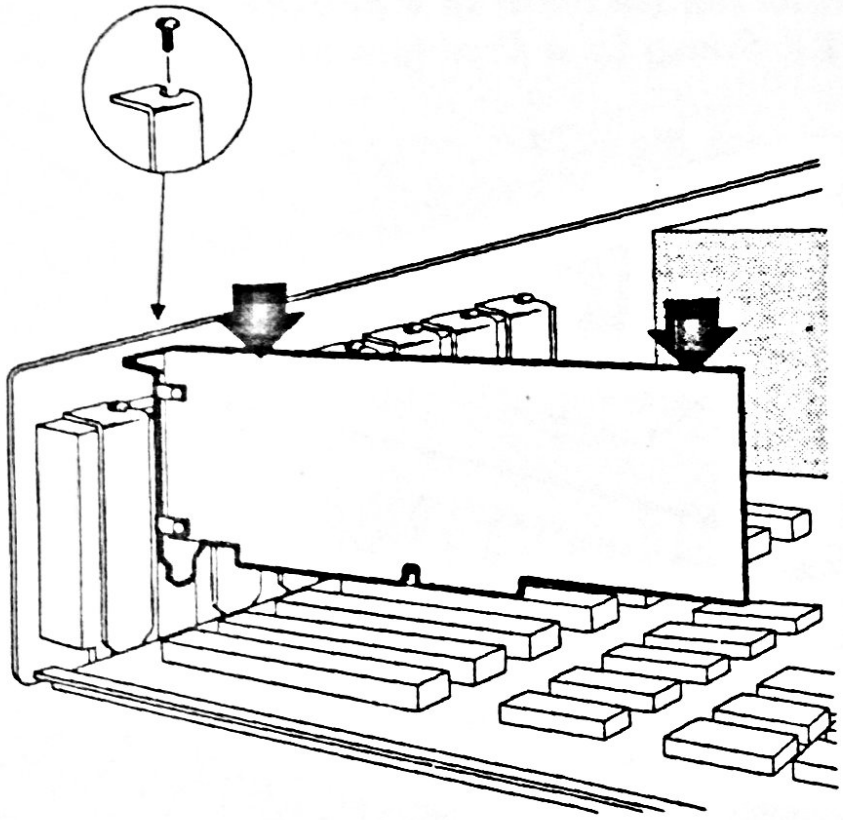
Step 3 : Touch the PC's power supply case (usually a large silver or black box in the rear of the computer case) to discharge any static electricity on your body.

Step 4 : Remove the TIGA board from its protective bag.

Do not touch your TIGA board before discharging any static electricity from your body - ground yourself by touching a metal object. You could possibly damage board circuitry.

Step 5 : Install the TIGA board in the selected slot (see Figure 2-4); press firmly and evenly on the edge of the card so that it seats all the way into the slot conectors.

Figure 2-4 Installing the TIGA Board

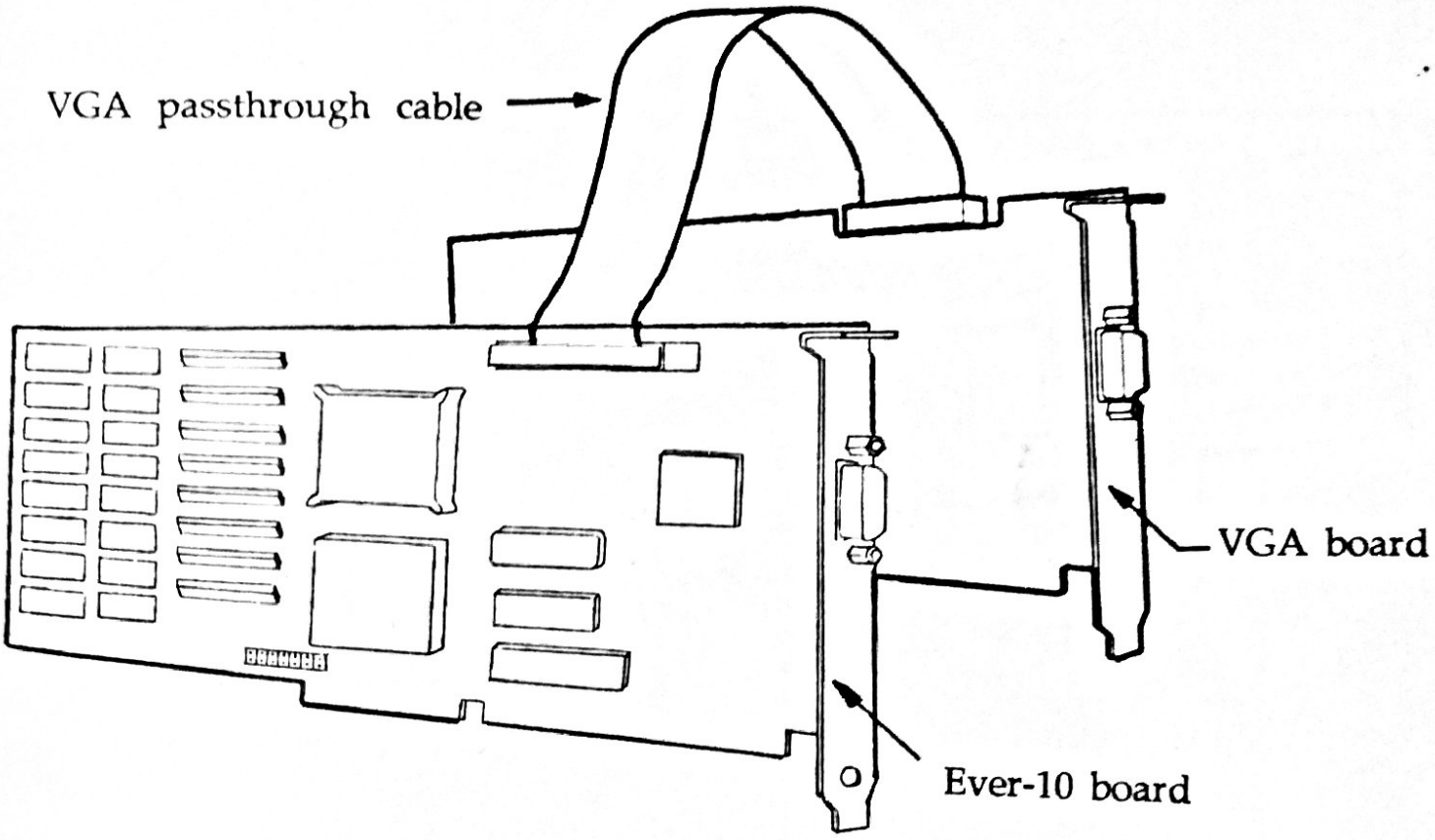


Do not force the TIGA board into slot. Avoid touching any board component while installing the board.

Step 6 : Tighten down the mounting bracket with the screw saved in Step 2.

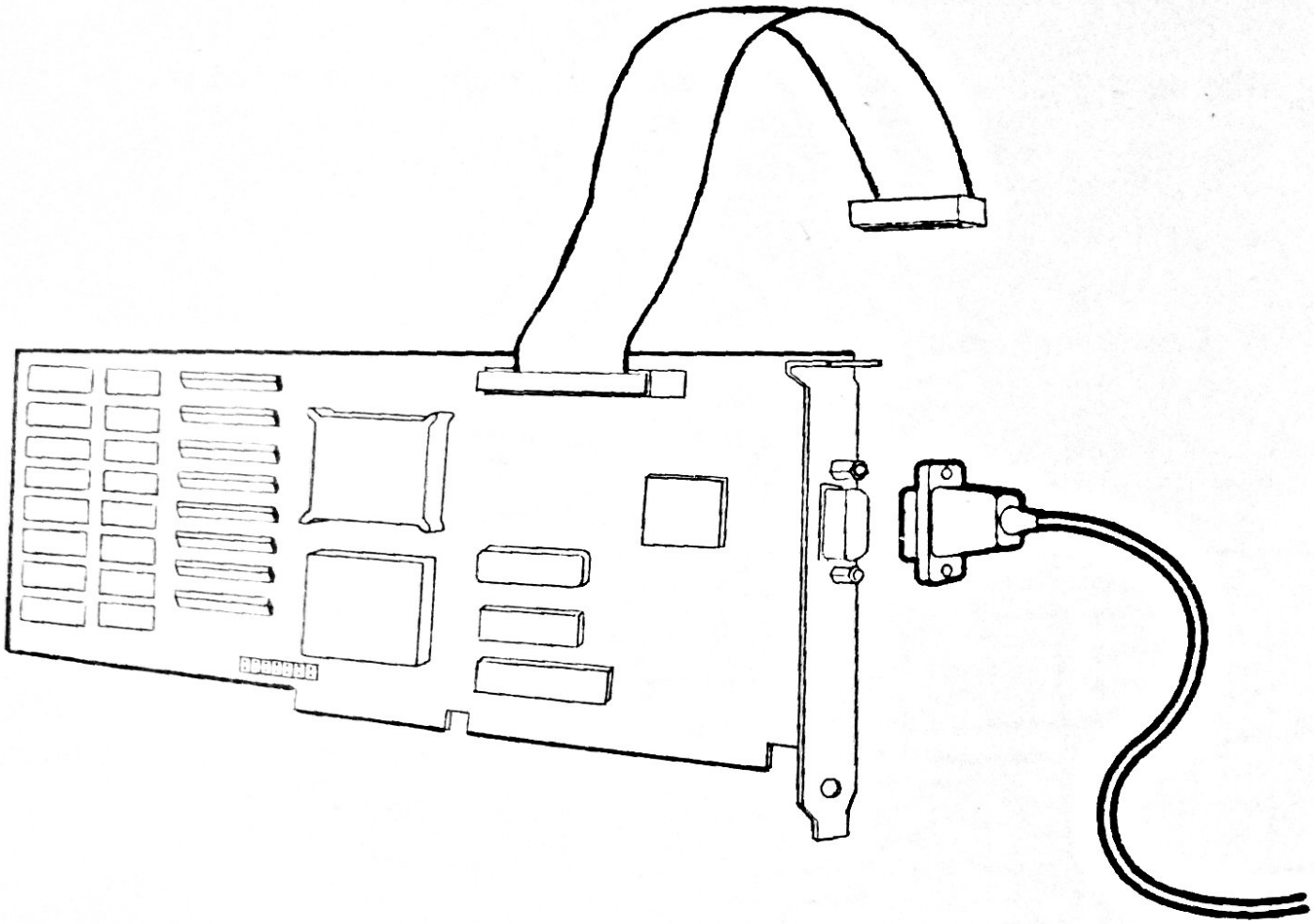
Step 7 : Connect the VGA passthrough cable provided with the TIGA board to your VGA board as shown in Figure 2-5.

Figure 2-5 Connecting the VGA Passthrough Cable



Step 8 : Connect the monitor cable to the 15-pin connector on the side of the TIGA board as shown in Figure 2-6.

Figure 2-6 Connecting the 15-Pin Monitor Cable



Step 9 : Replace the PC cover

Step 10: Write down your monitor's manafacturer and model number in the box below. The tigaset utility may require this information.

Manufacture	Model Number

Step 11: Turn on power to the PC.

2.3 Installing TIGA Software Drivers and Utilities

Your package include one floppy diskette, which contain the TIGA software utilities and drivers. You could go through the following steps :

Step 1 : Insert the Diskette into your floppy drive A.

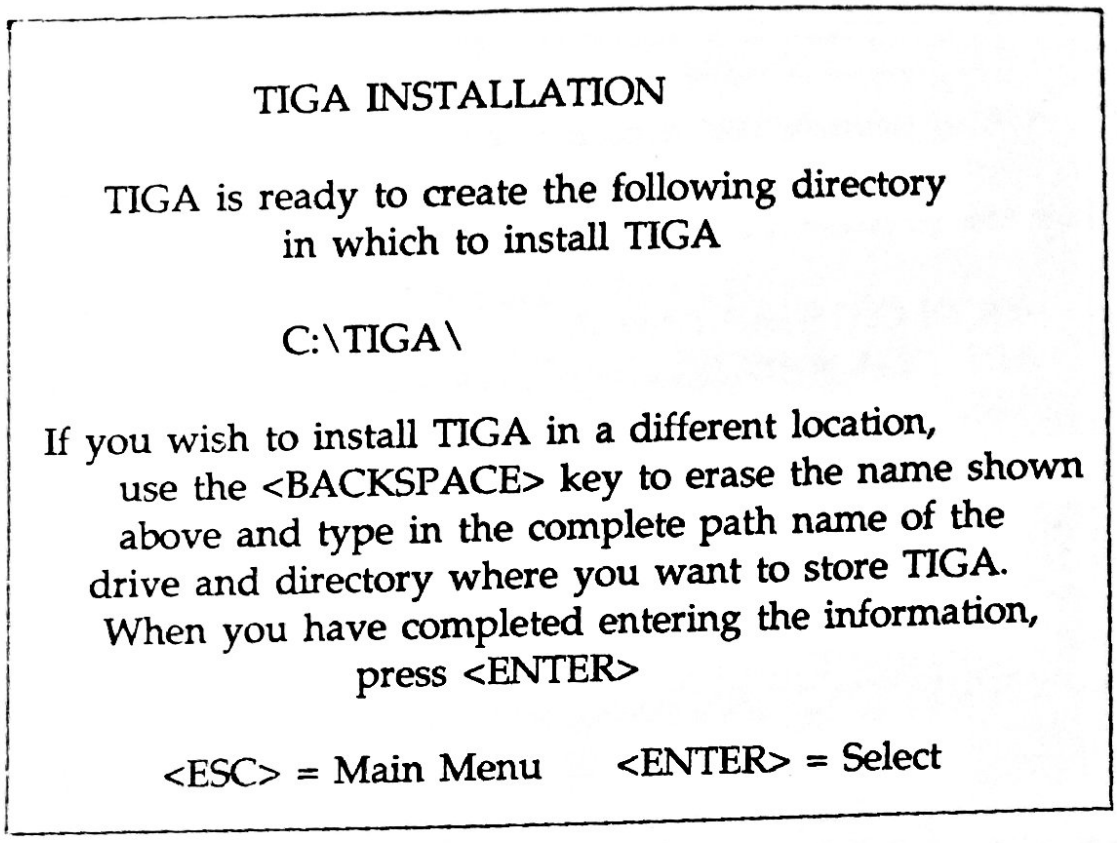
Step 2 : Type A: and press <ENTER>

Step 3 : Type INSTALL C:\TIGA (depended on where's your TIGA software destination harddisk drive and path).

Note :
This step would be taken about 10 seconds, then program become to test your TIGA board, If there is any message during installation, please turn off your PC system ad inspect the installation of TIGA board whether setup correctly.

Step 4 : The screen prompts for a directory where the TIGA software should be installed. The default directory displays as shown in Figure 2-7.

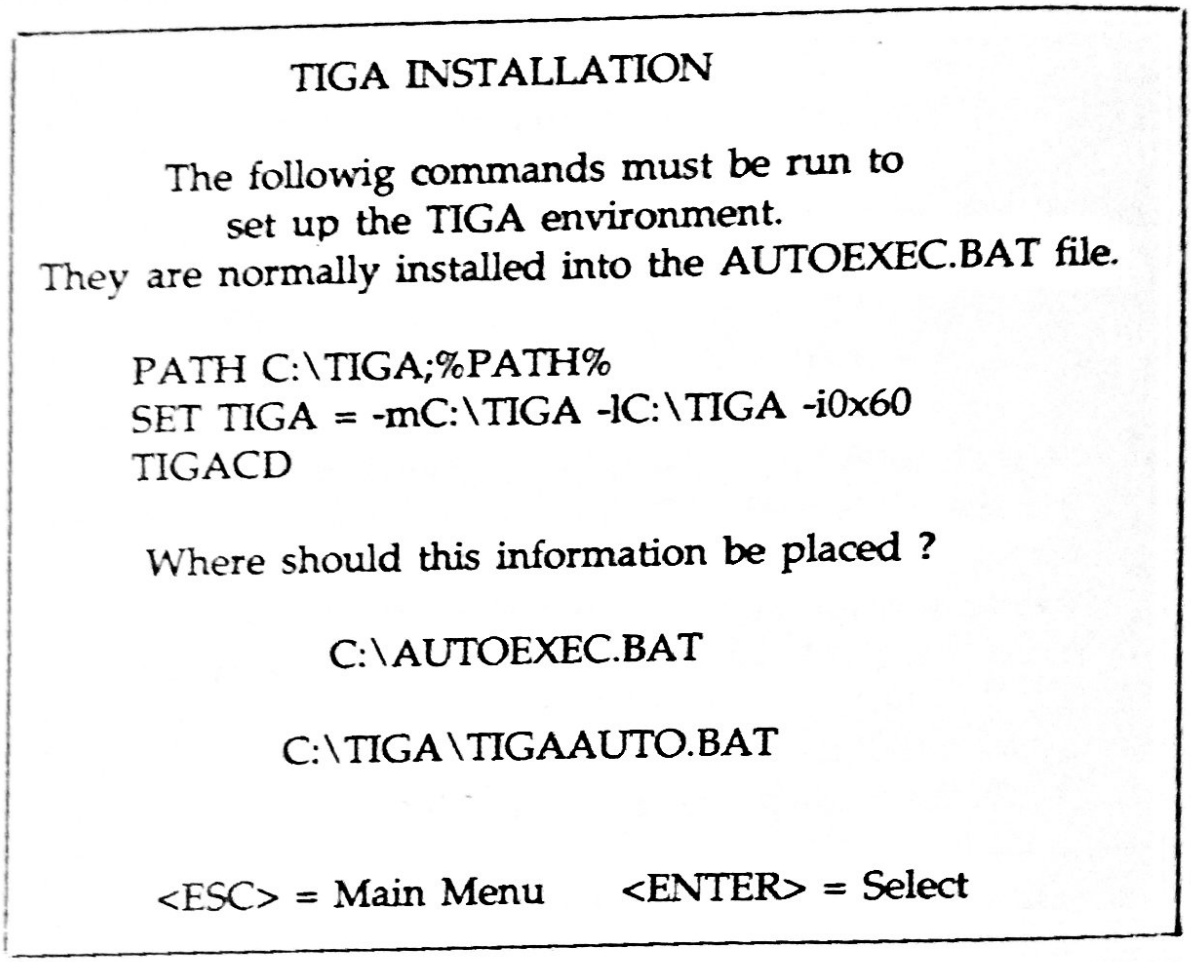
Figure 2-7 TIGA Installation Screen - Default Directory



If you wish to install TIGA in a different location, follow the instructions on the screen to change the destination.

Step 5 : Press <ENTER> if you agree with the default location C:\TIGA. The software or asks for permission to append your AUTOEXEC.BAT file. Figure 2-8 shows your choices.

Figure 2-8 TIGA Installation Screen - TIGA Environment

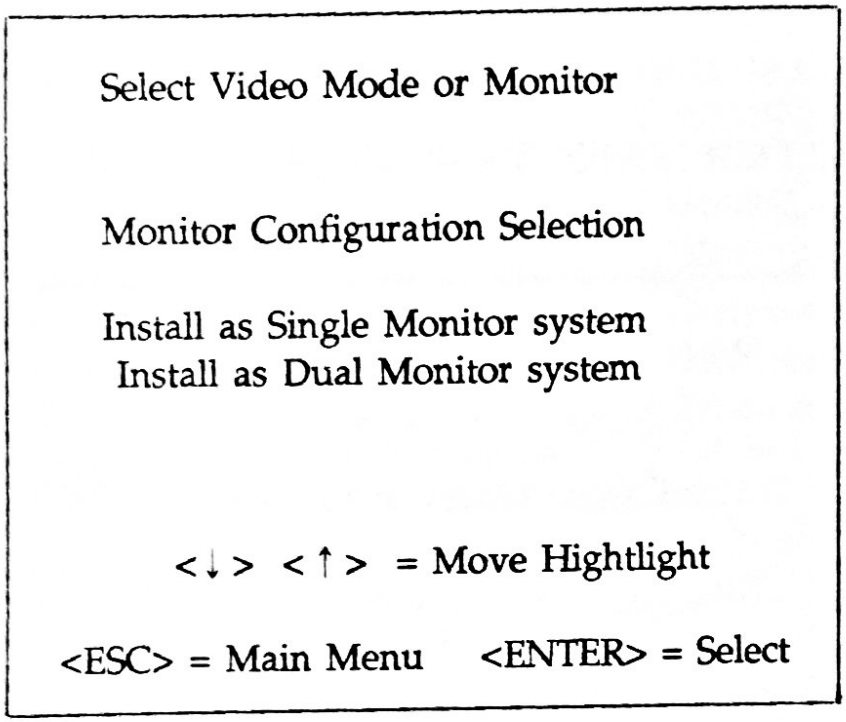


These instructions execute a series of commands to your PC when you power up or reboot your system.

If you decide not to modify your AUTOEXEC.BAT file, program will place these commands into a file called tigaauto.bat, which is located in your TIGA directory. You must maually input these lines into your AUTOEXEC.BAT files after the installation is completed.

Next, program asks whether you are using a single monitor or dual monitor setup (Figure 2-9).

Figure 2-9 TIGA Select Video Mode or Monitor - Monitor Configuration



If you have seperate monitors attached to the VGA and TIGA boards and you want TIGA images to always show on your secondary monitor, select the dual monitor option. Otherwise, choose the single monitor option.

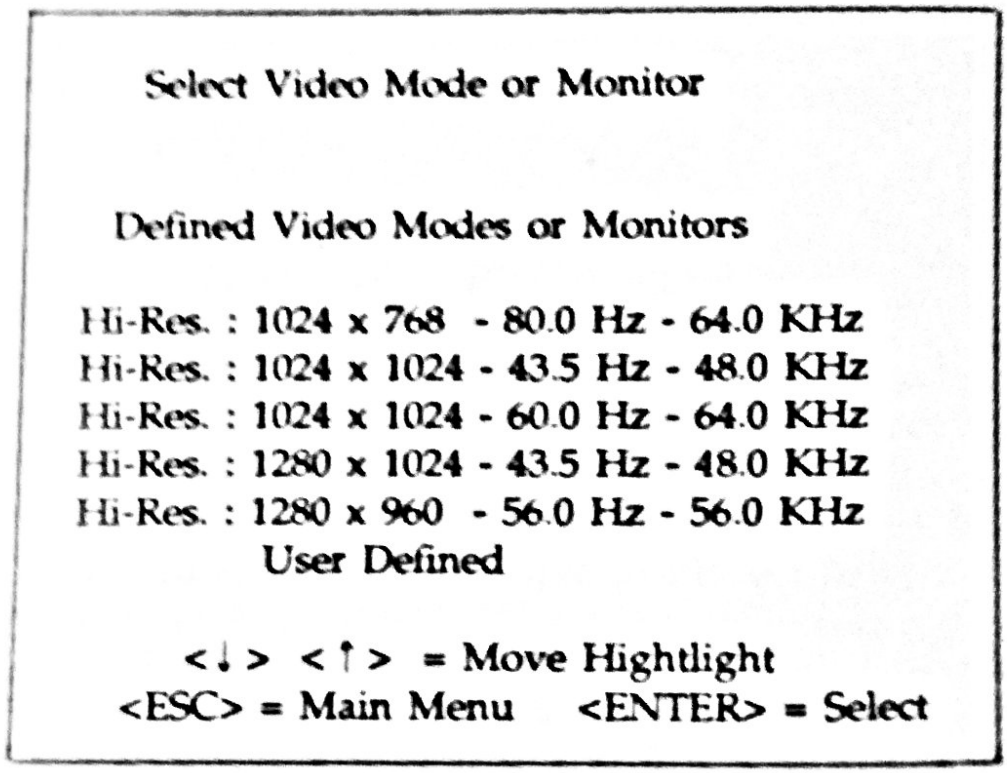
Note:
The VGA passthrough cable must be connected between the VGA and your TIGA board if you are using a single monitor.

Setp 6 : Use the arrow keys and press <ENTER> to select one of the following option :

☐ Install as Single Monitor system - if you have only one monitor.
☐ Install as Dual Monitor system - if you are using seperate monitors attached to the VGA and your TIGA board.

You are presented with a list of monitors (Figure 2-10).

Figure 2-10 TIGA Select Video Mode or Monitor - Monitor Selection



Step 7 : Select the resolution that you are using, press <ENTER> to accept selection (Figure 2-10).

Note :
See Section 2.6, Customizing Monitor Timing, for instructions on how to customize your monitor timing.

Figure 2-11 TIGA Mode Utility

TIGA MODE UTILITY Rev.1.00,(C) 1991 Texas Instruments, Inc.

Available video modes:3. Default mode:1280x1024, 16 Colors, 1 Page

Resolution	Colors	Pages	Psize	Mode
1280 x 1024	16	1	4	Interlaced
1280 x 1024	2	1	1	Interlaced
1280 x 1024	2	2	1	Interlaced

<↓> <↑> = Move Hightlight
<ESC> = Quit Display <ENTER> = Select Mode

Step 8 : Use the arrow keys and press <ENTER> to select what's kind of pixel size, colors, pages you want.

Step 9 : Complete the above procedure. You have installed your TIGA configuration, and return to main menu.

Step 10: You may return to DOS command and reboot your system or execute TIGAAUTO batch file to install TIGA communication driver.

Note:
After you have setup your TIGA enviroment, you would find three subdirectories were created, \DEMOS, \WIN30,\ ACAD, those included the demo programs and windows 3.0, AutoCAD/386 R10, R11 drivers. You may use TIGADEMO.EXE (Located on \ DEMOS Subdirectory) to test whether you have already setup TIGA environment.

2.4 Running TIGA Setup Utilities

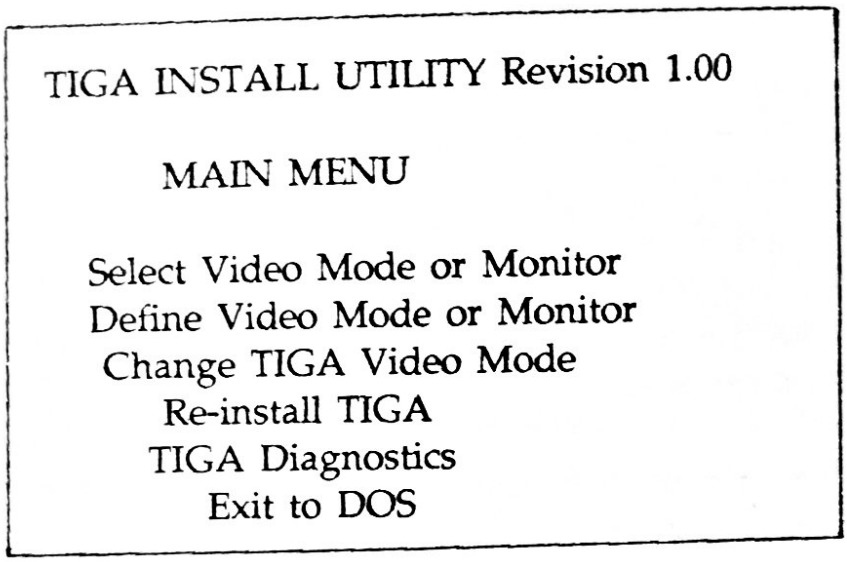
After first installation, you have setup your TIGA board TIGA configuration. If you need to change monitor resolution, define monitor etc. You may use the *TIGASET* utility to do these.

Step 1 : Change directory to your TIGA utility files location.

Step 2 : Enter *TIGASET* and press <ENTER>.

This invokes the tigaset utility. It displays a menu similar to that shown in Figure 2-12.

Figure 2-12 TIGA Installation Screen - Main Menu



Position the cursor using the arrow keys, then press <ENTER> to select the hightlighted option.

Note :
Pressing ESC aborts the screen that you are working in and returns the previous screen.

An explantion of the main menu options follows:

- Select Video Mode or Monitor - presents a list of display resolution modes to select.

- Define Video Mode or Monitor - provides you to modify monitor timing to match different resolution.

- Change TIGA Video mode - provides you to change display pixel size, colors, page size.

- Re-install TIGA - presents a series of instructions and options for installing TIGA software.

□TIGA Diagnostics - provides you with a set of diagnostic tools to help you locate a suspected hardware failure.

□Exit to DOS - exits tigaset and return to DOS.

2.4.1 Select Video Mode or Monitor

Step 1 : Use the arrow keys to Selct Viedo Mode or Monitor and press enter.

Step 2 : Execute Step 6 - Step 9 of Section 2.3 to set up the TIGA environment.

2.4.2 Re-install TIGA

Step 1 : Use the arrow keys to select re-install TIGA.

Step 2 : Execute Step 4 - Step 10 of Section 2.3 to re-install TIGA software.

2.5 Setting Up a Dual Monitor Syetem

You can use a seperate EGA or VGA monitors with your TIGA board; a VGA monitor is preferred. In dual monitor systems, applications interact with DOS on the primary monitor; high-resolution graphics appications run on the secondary monitor.

Do the following to set up your system for dual monitor usage:

Step 1 : Remove the cover from your PC by following the

instructions contained in your PC's operator manual.

Step 2 : Locate an unused 8-bit or 16-bit bus slot.

Step 3 : Install the TIGA board by executing Step 3 - Step 6 of subsection *2.2.3, Installing Your TIGA board.*

If you want VGA passthrough on the secondary monitor, install the VGA passthrough cable between the VGA card and your TIGA board.

Step 4 : Connect the 15-pin monitor cables as follows:

☐Connect the primary monitor cable to your primary EGA or VGA graphics display card connector.

☐Connect the secondary monitor cable to your TIGA board.

Step 5 : Replace the PC cover.

Step 6 : Write down your monitor's manufacturer and model number.

Step 7 : Turn on power to the PC.

Step 8 : Run the tigaset utility by following the instruction in *Section 2.4 Running TIGA Setup Utilities.*

Note :
Remember that when the setup utility asks for monitor information, it is referring to your secondary monitor that is connected to the TIGA board.

The tigaset software will ask if you are using a single or dual monitor system.

- Selecting DUAL MONITOR leaves the previous TIGA image on the secondary monitor when you exit from TIGA application.

- Selecting SINGLE MONITOR returns the VGA display to both your primary and secondary monitor.

2.6 Customizing Monitor Timing

After initial installation, you may decide to use a different monitor than the one configured when you installed your TIGA board. or you may decide to use a monitor that is not listed. Whatever the reason, if it should be necessary to reconfigure the monitor timing. use the tigaset utilities to customize the timing for your monitor.

Typically, a monitor supports a set of hozizontal and vertical timings for each standard resolution. The timing values are usually given as a frequency range rather than as a single frequency value.

A video image consists of successive frames. Each frame contains a large number of lines.

- The rate at which each line is presented to the screen is called horizontal frequencies.

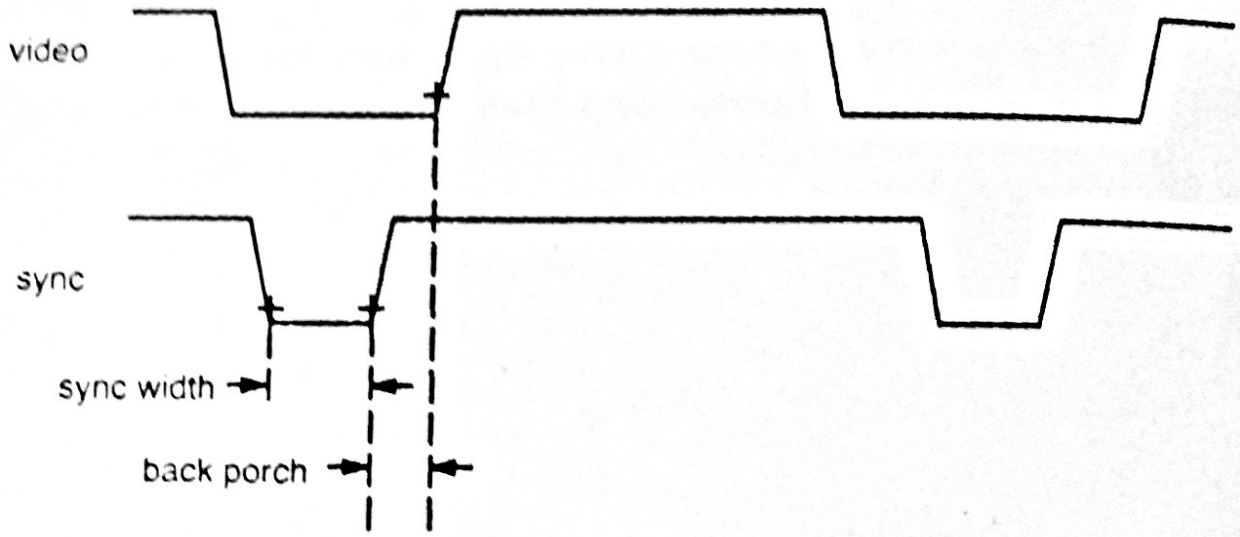
- The rate at which the frames are presented is called vertical frequencies.

- Sync polarities, sync widths, and back porch timing allow the monitor to synchronize with the TIGA board's video output.

- Some monitors require a sync signal with the green video output(Sync On Green). Most VGA monitors do not require this feature.

Figure 2-13 shows a typical video timing diagram.

Figure 2-13 Typical Video Timing Diagram



Complete these steps to customize the timing for your monitor.

Step 1 : Check the timing specifications for your monitor in its operator menual, and record them in the blanks provided below.

Required Information	Value
Horizontal frequency (in KHz)	
Horizontal sync width (in μ s)	
Horizontal back porch (in μ s)	
Horizontal sync polarity (positive or negative)	
Vertical frequency (in Hz)	
Vertical sync width (in ms)	
Vertical back porch (in ms)	
Vertical sync polarity (positive or negative)	
Sync on green (yes or no)	

Step 2 : Change directory to TIGA utility files location.

Step 3 : Enter *TIGASET* and press <ENTER>. This invokes the tigaset utility and displays the main menu.

Step 4 : Select *Define Video Mode or Monitor.*

Step 5 : Use the arrow keys and press <ENTER> to select one of the listing resolution shown in Figure 2-14.

Figure 2-14 TIGA Monitor Timing Utility

TIGA Monitor Timing Utility Rev. 1.00
(C) Copyright 1991, Texas Insstruments, Inc.
User Defined Monitor Timing

		Manual	Actual
Horizontal Resolution		1280	1280
* Horizontal Frequency	(KHz)	48.01	48.01
* Horizontal Sync Width	(μs)	0.94	0.94
* Horizontal back porch	(μs)	1.69	1.69
* Horizontal Sync Polarity	(+/-)	-	-
Vertical Resolution		1024	1024
* Vertical Frequency	(Hz)	43.64	43.64
* Vertical Sync width	(ms)	0.21	0.21
* Vertical back porch	(ms)	0.21	0.21
* Vertical Sync Polarity	(+/-)	-	-
Interlaced	(Y/N)	Y	Y
Sync On Green	(Y/N)	N	N
Dot Clock	(MHz)	85.00	
Available Oscillator	(MHz)	85.00	[OSC0]
Screen Width	(mm)	360	
Screen Height	(mm)	270	
Save defined video-mode ?	(Y/N)	Y	Y

<F1>	<F2>	<F3>	<ESC>	<F10>	<–	-	+	–>
TIGA	SWITCH	REGISTER	QUIT	SAVE	DECR			INCR

A description of each key funtion follows :

- <F1> allows you to check monitor alignment by toggling between your TIGA board display and the VGA display. The TIGA board display is a full-page border with a crosshair at the center. By using F1 you can check your entries and see their effect on the alignment.

- <F2> toggles between the different resolutions. Use F2 to move to the next resolution after adjusting the timings for the current resolution.

- <F3> shows the register values which TIGA software uses.

- <ESC> aborts monitor customization and returns to main menu.

- <F10> saves the customized monitor timings and quit to main menu.

- < → > increments the value highlighted.

- < ← > decrements the value highlighted.

- < ↑ > moves the highlight up.

- < ↓ > moves the highlight down.

You may modify these values and customize them to meet your monitor's characteristics by doing the following :

Step 6 : Use the arrow keys to position the highlight at the entry that you want to modify; enter the new value.

Note :
If your monitor operator's manual does not list all the required information, use the default values given on the screen. However, the more information that you provide, the better the result that tigaset will produce.

- Some monitors support both interlaced and noninterlaced timings - in these cases, enter the values for noninterlaced timing.

- Some monitors can support multi-frequency, so that you could select many resolution modes to match your monitor timing.

- As you move from one display resolution to another, a different set of timings and sync polarity values appears.

Step 7 : Repeat **Step 6** for all resolutions.

Step 8 : When you are satisfied with your selection, press <F10> to save your customized values.

Step 9 : After reconfiguration is completed, return to main menu. Now you could move the highlight to *Select Video Mode or Monitor* to set up your monitor resolution which you have just modified.

2.7 Software Drivers

Your TIGA board uses TIGA software to provide compatibility with many applications. A TIGA Windows driver and AutoCAD/386 driver are supplied with the TIGA board.

2.7.1 TIGA Video Drivers

Table 2-2 lists the applications that work through TIGA and subsequently run on your TIGA board. It also provides instructions for obtaining the drivers.

Table 2-2 TIGA Video Drivers

Application	Where to Obtain your TIGA Driver
Anvil 1000/5000	Ships with the application
AutoCAD	Ships with the TIGA board
AutoShade/AutoSketch	Ships with the TIGA board
CADKEY V3.5	Ships with the application
CADKEY Render	Ships with the application
DataCAD	Ships with the application
DataCAD Velocity	Ships with the application
DesignCAD 2D & 3D	Call (918) 825-4844
Drawbase	Ships with the application
GEM Artline	Call (800) 443-4200
GEM Presentation Team	Call (800) 443-4200
Digital Research Draw Plus	Call (800) 443-4200
Generic CADD	Contact your Generic CADD dealer
GSPOT I,II,III(TIGA debugger)	Ships with the application
HALO V3.0	Ships with the application
HOOPS	Ships with the application
MasterCAM	Contact your MasterCAM dealer
Microsoft Windows	Ships with the TIGA board
Microstation V3.3	Ships with the application
OrCAD/SDT III,PCB II,VST	Ships with the application
Personal Designer 4.1	Ships with the application
Point Line CADD	Ships with the application
RoboCAD 2.0	Ships with the application
Ventura Publisher/GEM	Works with the GEM TIGA driver
X-Windows Server	Ships with the application
Xoftware TIGA X server	Call (619) 565-7373

2.7.2 Installing the TIGA Windows Driver

Whether you are installing Windows for the first time or upgrading your VGA to the TIGA board, install the TIGA Windows drivers as outlined in the following paragraphs. However, if a TIGA Windows driver is provided with your Microsoft Windows software, install the driver by using the typical Windows installation procedure. Do not install the TIGA Windows driver provided with your TIGA board.

Before proceeding further, make sure that TIGA communications have begun. When the tigaset installation utility was running, you chose between having tigaset alter your AUTOEXEC.BAT file or create a file called TIGAAUTO.BAT.

- ☐ If you chose to have your AUTOEXEC.BAT file edited and you rebooted your PC after installation was complete, the communications are working.

- ☐ If you chose to create the TIGAAUTO.BAT file, execute the file from your TIGA directory by entering TIGAAUTO and pressing <ENTER>.

Step 1 : At the prompt, change directories to your \ Windows directory.

You cannot install the TIGA Windows driver from within Windows. Exit Windows and use the DOS command line to execute the Windows setup utility.

The TIGA Windows driver will not operate in a four-color TIGA display mode. Set your TIGA display mode for monochrome, 16 colors, or 256 colors.

Step 2 : Enter SETUP and press <ENTER> to execute the

Windows setup. You are eventually presented with the Windows Setup screen shown in Figure 2-15.

Figure 2-15 Windows Setup Screen

Windows Setup

If your computer or network appears on the Hardware Compatibility List with an asterisk next to it, press F1 before continuing.

System Information

Computer:	MS-DOS or PC-DOS System
Display:	VGA
Mouse:	Microsoft, or IBM PS/2
Keyboard:	Enhanced 101 or 102 keys US and Non US keyboards
Keyboard Layout:	US
Language:	English (American)
Network:	LAN Manger 1.x(or 100% compatible)

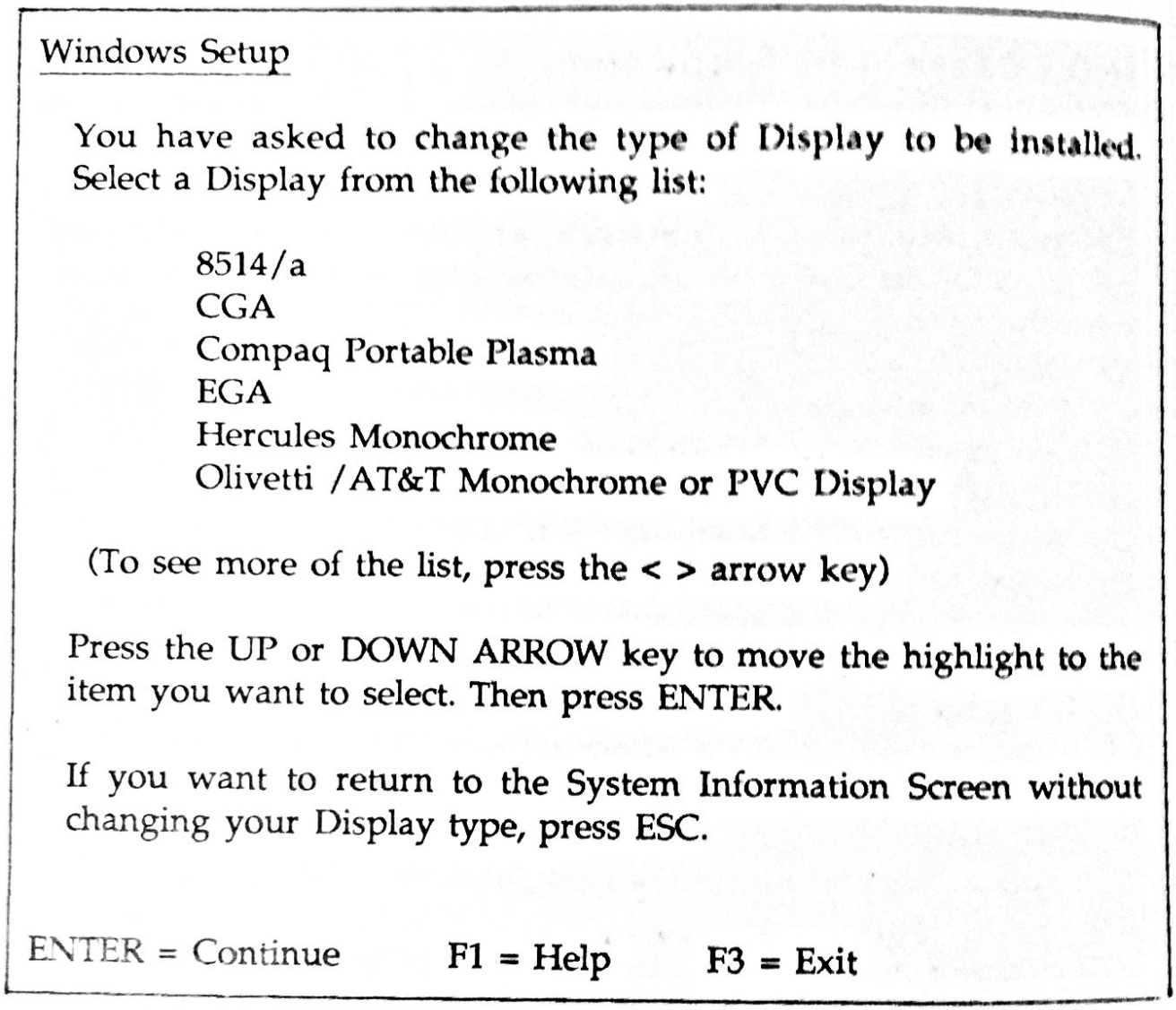
Complete Changes: Accept the configuration shown above.

To change a system setting, press the UP or DOWN ARROW key to move the highlight to the setting you want to change. Then press ENTER to see alternatives for that item. When you have finished changing your settings, select the "Complete Changes" option to exit Setup.

ENTER = Continue F1 = Help F3 = Exit

Step 3 : Position the highlight on Display : and press <ENTER>. You are resented with a list of drivers shown in Figure 2-16.

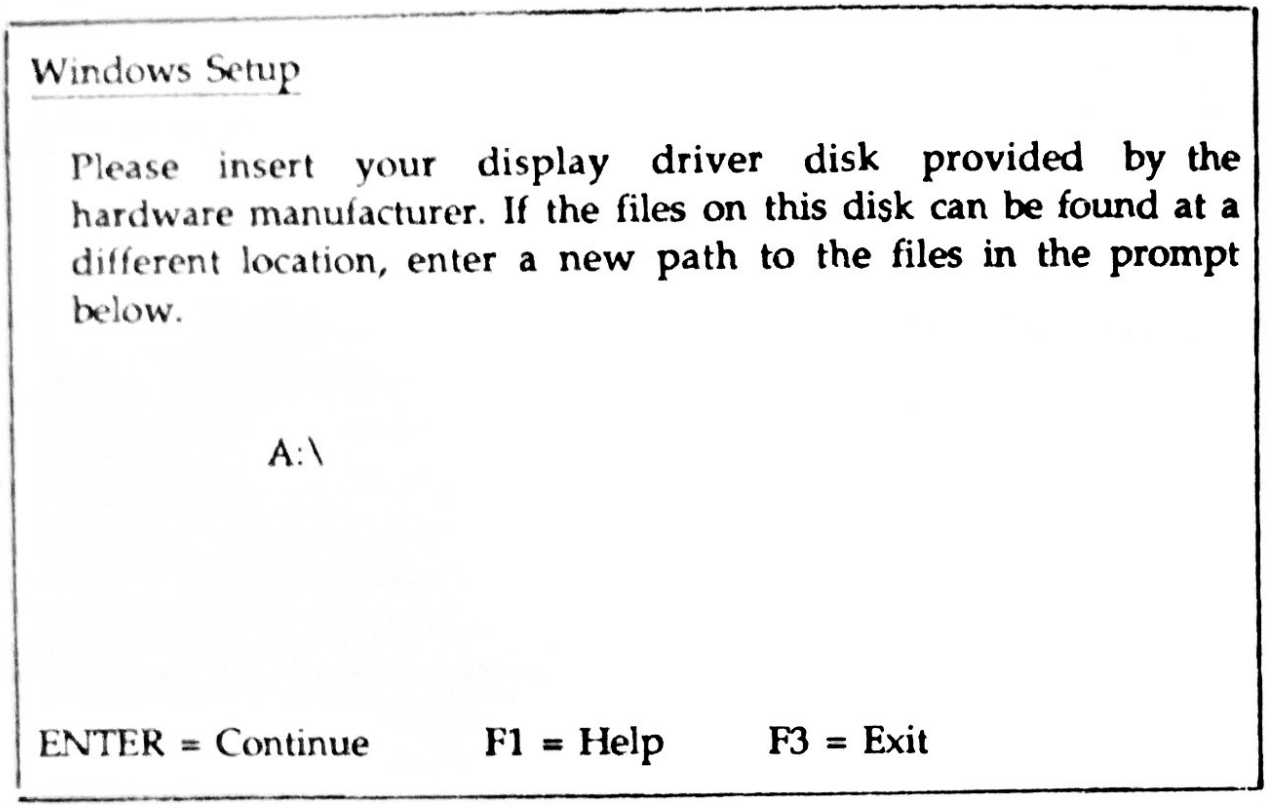
Figure 2-16 Windows Setup Screen - Driver Options



Step 4 : At the end of the screen, position the highlight on the OTHER option and press <ENTER>.

Windows will prompt you for a directory where the new TIGA Windows driver is located (see Figure 2-17).

Figure 2-17 Windows Setup Screen - Display Driver Path



Step 5 : Use <BACK SPACE> to erase the A:\ prompt.

Step 6 : Enter <TIGA directory>\WIN30 and press <ENTER>. <TIGA directory> is the path name where TIGA was installed

The TIGA Windows driver presents three variations.

Step 7 : Choose the appropriate driver for your current TIGA display mode and press <ENTER>. Follow the instructions until Windows returns to the SYSTEM INFORMATION screen.

Note :

You may see only one option of the TIGA Windows driver, depening on future revisions of the TIGA Windows driver.

Step 8 : Press <ENTER> to exit SETUP.

This completes the TIGA Windows driver installation.

2.7.3 Installing the TIGA AutoCAD Driver

2.7.3.1 General Installation for AutoCAD

Step 1 : Change directory to your <TIGA directory> \ACAD Subdirectory ;

Step 2 : Type INSTALL followed by the drive and directory containing AutoCAD; for example :

INSTALL C:\ACAD and press <ENTER>.

Step 3 : Read the screen, then press any key.

Step 4 : Program copy the files into AutoCAD directory.

Step 5 : Finished the installation, you could enter into AutoCAD and select *Configure AutoCAD* funtion and opt to change the video display configuration. Select *1. ADI P386* display.

Step 6 : After selecting the *ADI P386* display driver, the Soft Engine logo screen appear followed by a window asks :

Do you wish to change the video mode ?

Step 7 : Type Y to change the video mode.

Step 8 : Move the highlight to TIGA 2.0 then press <ENTER>.

Step 9 : Next the selection, you could optionally select below

items:

1. Test the Video Card
2. Change DL-Xpress/386 default value
3. Enter Custom Configuration

Directly following the instructions, you may finish the driver installation.

Step 10 : Before enter AutoCAD, you must execute the TIGAAUTO.BAT to install TIGA communication driver first.

2.7.3.2 For AutoShade or 3D Studio installation

Step 1 : Make a directory for DL-Xpress. For example:

MKDIR C:\DLX

Step 2 : Copy all of the files from your <TIGA directory> \ACAD subdirectory into it.

COPY C:\TIGA\ACAD*.* C:\DLX

Step 3 : Edit your AUTOEXEC.BAT file to contain the following parameters:

SET DSPADI=C:\DLX\DLXPRESS.EXP
SET RDPADI=C:\DLX\DLXPRESS.EXP
SET RCPADI=C:\DLX\DLXPRESS.EXP
SET DSPADICFG=C:\DLX\DLXPRESS.CFG

Step 4 : Reboot so that the changed to the AUTOEXEC.BAT

Step 5 : Continue with the Configuration and Usage section for each of the applications in which you intent to use DL-Xpress.

Chapter 3

How to Expand TIGA Board Memory

Figure 1.1 shows DRAM expansion bank location. The maximum DRAM for TIGA board is 2 MBtye, and the factory default is 1 MByte. You can see the TIGA board remains the expansion memory socket. It's very easy to expansion your memory directly plug the recommended DRAM into socket. The 44256-10 DRAM is recommended to use.