

Section Four: Display Drivers

This section describes the installation and operation of the display driver programs for Microsoft Windows, AutoDesk, and OS/2 driver diskettes that are shipped with your VL-Bus SuperX adapter. Information on drivers for other popular graphics and word processing applications is provided in README files on the diskettes. These files may also contain information on new drivers which became available after the printing of this manual. The drivers allow you to use the extended features of the VL-Bus SuperX board. You may also check our BBS for additional drivers. Highlights include:

- 1280 x 1024 resolution in 256 colors (requires 2MB DRAM)
- 1280 x 1024 resolution in 16 colors
- 1024 x 768 resolution in 32K/64K colors (requires 2MB DRAM)
- 1024 x 768 resolution in 256 colors
- 800 x 600 resolution in 32K/64K colors
- 640 x 480 resolution in 16.8 million colors

If you intend to use your VGA adapter in standard VGA modes, you DO NOT need to install any of these drivers.

Your display drivers support the following software applications and environments. For documentation:

In this Manual	On README	On README (no driver)*
Microsoft Windows Autodesk OS/2	Lotus GEM/3 Ventura WordPerfect WordStar	Generic CAD OrCAD Locus Computing Colorix

*** VESA-based applications. Drivers not supplied; however, instructions are provided which enable you to run these applications with the VL-Bus SuperX.**

NOTE: To use the 800 x 600 or 1024 x 768 graphics display drivers, you must have a multiple frequency monitor capable of displaying that resolution. Standard VGA monitors (such as IBM's analog monitors) do not have that capability.

Installing the Display Drivers

Summary of Driver Installation Steps:

- **INSTALL DRIVERS FROM THE BOCA DISKETTE**
- **RUN CLMODE TO PREPARE YOUR MONITOR (explained in Section Five).**
- **INSTALL INDIVIDUAL DRIVERS FOR YOUR PARTICULAR APPLICATION.**

- Make sure the VL-Bus SuperX is present (physically installed) BEFORE installing any drivers. Make sure you select UTILITIES so you are able to run CLMODE.
- Insert diskette 1 into your system drive A:, type A:, then type INSTALL, and follow all on-screen instructions.
- After an introductory screen, you will be presented with a list of available disk drives. Either accept the default disk drive of C\: or choose any listed drive. You will then see a screen similar to the one shown on the following page.
- Select the drivers you want to install. You are offered a default subdirectory for the driver to be installed in (e.g., \WP51 for WordPerfect 5.1). The default may be changed if necessary. Make a note of the subdirectories that the drivers/utilities were copied to for future reference.
- After your selected driver(s) have been installed, you are returned to the DOS prompt. Refer to the driver's associated README file for your particular application or environment for information and remember: **NEVER CHOOSE A HIGHER RESOLUTION THAN YOUR MONITOR SUPPORTS.**

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Select the display drivers to install on drive C:

Basic Research Utilities			
			NO
AutoCAD 286	Release 9, 10, 11	Multi-res Multi-color	NO
AutoCAD 386	Release 10, 11	Multi-res Multi-color	NO
AutoCAD 386	Release 12	Multi-res Multi-color	NO
AutoDesk 3D Studio	Ver. 1.0	Multi-res Multi-color	NO
AutoShade	Ver. 1.x	Multi-res Multi-color	NO
AutoSketch	Ver. 3.x	Multi-res Multi-color	NO
AutoShade with Renderman	Ver. 2.0	Multi-res Multi-color	NO
Framework II	Ver. 2.x	800x600 16-color	NO
Framework III	Ver. 3.0	800x600 16-color	NO
GEM/3	Ver. 3.0	Multi-res 16-color	NO
Lotus 1-2-3	Ver. 2.x	Multi-res 16-color	NO
Lotus 1-2-3	Ver. 3.0	Multi-res 16-color	NO

Select the display drivers to install on drive C:

OS/2	Ver. 2.0	Multi-res Multi-color	NO
Personal CAD	Ver. 4.x	Multi-res 16-color	NO
Ventura Publisher	Ver. 2.x, 3.0	Multi-res 16-color	NO
VersaCAD 2D		800x600 16-color	NO
VersaCAD 386		800x600 16-color	NO
Windows	Ver. 3.1	Multi-res Multi-color	NO
WordPerfect	Ver. 5.0, 5.5	800x600 16-color	NO
WordPerfect	Ver. 5.0	800x600 16-color	NO
WordStar	Ver. 5.1	Multi-res 16-color	NO
WordStar 2000	Ver. 5.5, 7.0	800x600 16-color	NO
	Ver. 3.5	800x600 16-color	NO

↑ - scroll up

PgUp - scroll page up Enter - install selections

↓ - scroll down

PgDn - scroll page down Space bar - toggle Yes/No

Y - all YES

N - all NO

Esc - Exit Install

NOTE: Additional drivers may appear on this screen as more applications are supported. REMEMBER TO RUN CLMODE BEFORE YOU RETURN TO YOUR APPLICATION.

4.1 Installing Windows 3.1 Drivers

To install the Windows 3.1 Drivers from the DOS Prompt:

1. Make sure Windows 3.1 is already installed on your system.
2. From your Windows directory, at the DOS prompt, type **SETUP** and press [Enter] to run the Windows SETUP.EXE program. Follow all on-screen instructions. When you come to the screen which lists hardware and software components such as display adapter (e.g., VGA, CGA, etc.), keyboard type, mouse type, etc., go to the Display section by using the cursor keys to move the highlighted bar and press [Enter].
3. From the next menu listing of display options, scroll to the bottom of the list and highlight the following text:

Other (Requires disk provided by a hardware manufacturer)

Press [Enter] and, when prompted, insert the Boca Windows display driver diskette into drive A: and type A:\ [Enter].

4. You will see a list of drivers and their associated resolutions:

Boca VL-Bus Super X 1280x1024
Boca VL-Bus Super X 1024x768
Boca VL-Bus Super X 640x480
Boca VL-Bus Super X 800x600

5. Highlight by moving the cursor to the desired display driver and then press [Enter].

6. Continue with the remainder of the SETUP procedure.

NOTICE: ADDITIONAL DRIVERS MAY BE REQUIRED ON THIS DISPLAY CARD.
REMEMBER TO RUN COMMAND LINE PROGRAMS BEFORE YOU RETURN TO YOUR APPLICATION.

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To install the Windows 3.1 Drivers from within Windows:

1. Make sure Windows 3.1 is already installed on your system and start Windows.
2. From the Main Window of the Program Manager run the Windows 3.1 Setup program.
3. Select Change System Settings... from the Options menu of the Setup program.
4. Click on the down arrow at the right side of the display. Scroll to the end of the list of available drivers and select Other display (Requires disk from OEM)....
5. Specify the path (e.g., c:\BOCASVGA) to where the drivers were initially copied. Click OK or press ENTER.
6. You will see a list of available drivers and their associated resolutions such as:
Boca VL-Bus Super X 1280x1024
Boca VL-Bus Super X 1024x768
Boca VL-Bus Super X 640x480
Boca VL-Bus Super X 800x600
7. Highlight by moving the cursor to the desired display driver and then click OK.
8. Continue with the remainder of the SETUP procedure. You will have to restart Windows for the changes to take effect.

Using the SetRES Under Windows 3.1

This utility allows you to change screen resolutions, number of screen colors, and select either large or normal fonts and system resources.

After new options have been selected, you can immediately restart Windows for the new options to take effect. Or, you can continue working in the current resolution and wait for the new resolution to take effect the next time Windows is started.

The application assumes that the Windows drivers have been correctly configured using Windows Setup. From Windows Setup, select the "Multi-resolution" entry. This will correctly configure the driver for Windows 386 enhanced mode operation, and copy the necessary font files to your hard disk.

Installation

1. Start Windows.
2. From the Program Manager, choose File Run. Specify the diskette drive where the Windows Drivers and Utilities diskette is inserted, and run the install program. For instance, if the floppy is in drive A:, type A:\INSTALL.
3. When prompted, specify to copy the files to the Windows directory.

SetRES may now be used by selecting the SetRES icon.

Use the SetRES utility to select supported colors and resolutions.

If you are unsure what resolutions and colors your video card can support, refer to Section Five in this manual, which discusses the utility CLMODE. Information on how to determine supported resolutions is provided.

For help on the SetRES utility, select Help from the Program menu.

4.2 Autodesk Device Interface (ADI) Drivers

The ADI 4.2 driver provided with your VL-Bus SuperX is the TurboDLDClassic display list driver from Panacea.

The driver is memory-resident and it runs with AutoShade 2 with RenderMan and 3D Studio to provide enhanced rendering support, but does not affect the speed of these programs, since they do not support Display Lists. This driver requires a '386 or '486-based PC which supports AutoCAD Release 12, 11/386, AutoShade 2 with RenderMan, or 3D Studio V1.x/2.x.

TurboDLDClassic speeds up AutoCAD pans, zooms and redraws. The driver accomplishes this by creating and maintaining a Display List—a fast-displaying object list of the current drawing—dramatically increasing performance on pans and zooms. In addition to offering display list speed enhancement, TurboDLDClassic provides a "bird's-eye" view to allow you to move around large drawings.

The only resource used by TurboDLDClassic is memory. The driver actively uses about 300Kbytes of RAM from extended memory for its operation. This memory is drawn from AutoCAD's memory pool and as a result does not affect normal DOS operation. The driver is loaded by AutoCAD at AutoCAD load time and is unloaded when you exit AutoCAD. Additionally, the Display List size can vary from one tenth to three times the size of the current drawing file, particularly when using AutoCAD 12's 31-bit regen space.

You may wish to purchase and install additional RAM before installing TurboDLDClassic, since it shares memory with AutoCAD. If AutoCAD is using a lot of memory, TurboDLDClassic may not have enough. If there is significant hard disk activity while you are using TurboDLDClassic, it may be an indication that you should add more memory to your system.

For details on running the ADI 4.2 driver (TurboDLDClassic), refer to the README file installed with the driver when using install.

4.3 OS/2 2.0

The following instructions assume you are familiar with the mouse interface in the OS/2 Desktop Shell environment. If you require additional assistance, refer to the OS/2 tutorial in the Information Folder.

Installing the OS/2 2.0 Presentation Manager Display Driver

1. Save a copy of the DISPLAY.DLL in \OS2\DLL. If you are currently running OS/2 2.0, open a DOS session by double clicking on a DOS full-screen icon from the OS/2 Command Prompts folder. The Command Prompts icon is in the OS/2 System folder.

Move to the \OS2\DLL directory by typing: CD\OS2\DLL [ENTER] at the DOS prompt. Then type COPY DISPLAY.DLL IBMVGA.DLL /B [ENTER] at the DOS prompt to make a backup copy of DISPLAY.DLL.

If you are currently running MS-DOS, follow the above steps for a DOS session to make a backup copy of the DISPLAY.DLL. Boot OS/2 to continue with the installation.

2. Invoke OS/2's Device Driver Install utility to copy device drivers from the appropriate subdirectory where the Boca Research Display Drivers are installed.

Double-click on the Device Driver Install icon in the System Setup folder. The System Setup icon is in the OS/2 System folder. By default, the source directory points to drive A:. Click on the source directory Change button and select the subdirectory where the drivers were installed (e.g., \BOCAOS2).

Click on the Install button from the OS/2 Device Driver Installation pop-up window. The Select Device Drivers pop-up window displays the following list:

Boca Super VGA - 800x600x16 on 36MHz monitor
Boca Super VGA - 800x600x16 on 40MHz monitor
Boca Super VGA - 800x600x16 on 50MHz monitor
Boca Super VGA - 1024x768x16 on 64MHz monitor
Boca Super VGA - 1024x768x16 Interlaced on 44.9 MHz monitor

The following list will assist you in determining your monitor's capabilities:

- 36-MHz monitor: Super VGA, Extended Super VGA (e.g., NEC 2A, NEC II)
- 40-MHz monitor: Multi frequency (e.g., NEC 3D)
- 50-MHz monitor: Extended multi-frequency, Super multi-frequency, Extended Super multi-frequency (e.g., NEC 3FGx, NEC 4D, Sony CDP-1304)
- 44.9 MHz monitor: 8514-compatible, Super VGA, Extended Super VGA, Multi-frequency (e.g., IBM 8514, NEC 2A, NEC II)
- 64-MHz monitor: Extended Multi-frequency (NEC 3FGx, NEC 4D, Sony CDP-1304)

Select the device driver to be installed from the list and click OK. Device drivers are then copied to their corresponding directories.

Click on Exit, then Yes. If the current DISPLAY.DLL is in use, a dialogue box will pop up to notify you that changes will be in effect the next time you boot. Click OK to exit the installation utility.

3. Modify your CONFIG.SYS in your system's root directory so that OS/2 will install the correct device driver the next time the system is booted.

Click on the OS/2 System Editor icon from the Productivity folder which resides in the OS/2 System folder. Select Open from the File menu. Open the CONFIG.SYS from the root

directory. Search for the command line which contains VVGA.SYS. For example:
DEVICE=C:\OS2\MSDOS\VVGA.SYS.

Select **Find** from the **Edit** menu. Type VVGA.SYS in the **Find:** edit box. Uncheck the **Case Sensitive** option if it is checked. Click on the **Wrap** option so a mark appears in the check box. Click on the **Find** button. Once you've located the command line, select the **Cancel** button.

Highlight the command line with your mouse, then select **Copy** from the **Edit** menu. Click at the end of the command line and press [ENTER] to insert a new line below the current command line. Select **Paste** from the **Edit** menu to make a copy of the command line. Type the characters REM at the beginning of the original command line. Change VVGA.SYS in the pasted command line to CLVSVGA.SYS. Now save the changes.

4. Shut down the system and reboot for the changes to take effect.

Installing the Windows 3.0 Driver for OS/2 2.0

This set of instructions assumes that the WIN-OS/2 Support has been installed. If that option was not selected at the initial OS/2 installation, please use the Selective Install utility that is in the System Setup folder to first install WIN-OS/2 Support.

1. If you do not currently have a WIN-OS/2 session running, start one.

Open a WIN-OS/2 session by double-clicking on an WIN-OS/2 icon from the OS/2 Command Prompts folder. The Command Prompts icon is in the OS/2 System folder.

2. Run the install program to copy the WIN-OS/2 drivers and SetRES utility to your hard disk.