

**CL500A**

**User Guide**

FCC ID : NPC CL500A

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## FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and, (2) this device must accept any interference received, including interference that may cause undesired operation.

Notice to user: Changes or modifications to this product not approved by the party responsible for FCC compliance could void your authority to operate this equipment.

In order for an installation of this product to maintain compliance with the limits for a Class B device, shielded cables must be used for the connection of any devices external to this product.

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## Introduction

This manual provides operating instructions for user utilities and installation instructions for the display drivers supplied with your CL5465.

The CL5465 graphics system is VGA compatible. The utilities and drivers supplied with your CL5465 provide support for additional features of your CL5465, such as greater speed, higher resolution, and more available colors.

## Before You Begin

The following instructions assume that the user is familiar with DOS and certain DOS commands. Please review the associated DOS commands before performing the installation.

## Conventions Used

Throughout this manual, the term 'DOS' refers to both MS-DOS and PC-DOS, except when noting features that are unique to one or the other. Table 1 shows the typographic conventions that are used throughout this manual.

**Table 1: Conventions Used**

Type Style	Description
User Input	This text must be typed exactly as it appears.
[F10]	Text within brackets indicates certain keyboard keys (such as [Enter], [F1], and so on).
<b>Bold</b>	System output. Any message that is displayed by the computer.
ALL CAPITALS	Directory names, files and acronyms.

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## Package Contents

Before installing your CL5465, check to see that your package contains the following items:

- ✓ The accelerator card
- ✓ Software driver which contain the necessary files
- ✓ This manual

Contact your dealer if you find anything missing or damaged, or you find that you need another size diskette for your CL5465.

## Technical Support

[Insert technical support information here.]

## Software Upgrades

[Insert software upgrade information here.]

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## Installation

Follow the detailed procedures described in this section for easy installation of the CL5465 into your computer system.

### Preparation

Before you begin the actual installation of your CL5465, you may need some or all of the following tools:

- Medium size flat blade screwdriver.
- Medium size Phillips head screwdriver.
- A 3/16 inch nut driver or wrench.

### Opening Your Computer

To begin installing your adapter into the computer, follow the procedure listed below.

1. You must first open your computer system. Before opening the system, be sure that the power to the computer system unit and all devices connected to it is turned off.
2. Disconnect the cables from the back of the system in order to give more room to work. Note how all cables are connected prior to disconnection.
3. In a typical PC computer all cover mounting screws are located on the back of the computer. Remove these screws and save them.
4. Carefully remove the cover. On most computers the cover will slide forward or backward, or tilt off.
5. Choose an expansion slot for the CL5465 adapter card.
6. Your adapter must be plugged into a slot that exactly matches its connector. These connectors include PCI. You must be certain to choose the correct type of slot.

### Installing the Adapter

After opening your computer system, you are now ready to install your adapter. Reference the display driver installation section(s),

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which you will be installing from, for any configuration peculiarities before proceeding.

1. Check that the power is turned off.
2. If necessary, remove a system expansion slot cover by removing its retaining screw and lifting it out. Save the screw.

**WARNING!** Your CL5465 is static sensitive. Before you install the CL5465, touch a metal surface of your computer, while it is plugged in, to ground yourself and dissipate any static electricity.

3. Hold the CL5465 adapter by its top corners and slide it into the system unit. Make sure that it is correctly seated in the expansion slot.
4. Secure the card with the screw that you removed in the step above.
5. Check the computer system's user manual for any additional configuration instructions.
6. Replace and secure the system cover.
7. Plug a VGA compatible or multi-frequency monitor into the 15 pin video connector at the back of the CL5465 adapter.

**IMPORTANT NOTE:** If you are using a multi-frequency monitor, you may need a special 15 pin PS/2 compatible adapter cable, and you will need to make sure that your multi-frequency monitor is configured properly for a PS/2 compatible analog VGA signal. Some multi-frequency monitors have a switch to select 'TTL' or 'analog' operation; set this switch for 'analog'. Check the manual that came with your multi-frequency monitor for additional information on configuring it.



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## Configuring Your Computer

The 486 and Pentium class computers use a program typically called Setup to tell the computer what equipment is installed in your system. After the adapter is installed, Setup will need to be run to configure the computer for proper operation with the CL5465 card.

The Setup program is usually part of the package of programs provided with your PC compatible computer. During boot time, watch for a message on your display indicating how to enter Setup. The message may instruct you to press a designated key at a certain time during bootup. If no Setup message is displayed, reference your operating system's manual on how to enter Setup.

**NOTE:** When using a memory manager, be aware that using the memory ranges B000 - B7FF will conflict with monochrome modes. The conflict could occur even if you are not using a monochrome monitor but an application (such as CLMode, Microsoft Windows compatibility tests, HIMEM, EMM386 and QEMM) which goes into monochrome mode causing your system to hang.

Follow the steps listed below when using Setup programs with the CL5465 adapter.

1. Run Setup to configure the computer. Sometimes this utility comes on a disk, sometimes it is built in to your system's ROM BIOS.
2. When you arrive at the part of the program where video support is specified, the program may ask you if the multi-frequency monitor you are looking at will be the primary monitor, answer Yes.
3. If you are presented with a list of video options, select the option for VGA. If no option for VGA is listed, select support for EGA. The CL5465 adapter will look to many systems like an EGA card. If you do not see an option for EGA, try the option for NO MONITOR, RESERVED or SPECIAL. These options will usually work. If not, see your equipment dealer.
4. At the conclusion of the Setup program, the computer will restart as if you had just turned on the power.

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## Display Drivers

The video controller is VGA compatible. The display drivers described in this manual are supplied to improve the resolution for each supported software application package. The display drivers support higher graphics resolutions, providing greater detail when using the supplied drivers in graphics-based programs.

In each application section, there is a brief introduction describing the application and the revision level of the application supported by the supplied display drivers.

The installation instructions for each display driver will follow the introduction section. Follow the instructions carefully to be sure that each display driver is correctly installed. All of the installation instructions assume that the Driver Diskette is located in drive A:. If drive B: is used, the instructions should be changed appropriately.

The installation utility (INSTALL.EXE) should be used to copy display drivers directly to the appropriate application directories where they may be configured by the application software.

### Before You Begin

It is assumed that the user is familiar with DOS and certain DOS commands. Please review the installation instructions and the associated DOS commands before attempting the actual installation.

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## Using the WinMode Utility

WinMode is run by selecting its icon. The icon will be in the group that you specified during the install process. When WinMode is started, the screen may blank for up to two seconds. This happens while WinMode attempts to discover the capabilities of the monitor. If this is successful, you will see only one choice besides the other brand and model choices in the Monitor Brand and Monitor Model drop down combo boxes. The various options you can configure in WinMode are described below.

**IMPORTANT NOTE:** The Font Cache Size option in the WinMode dialog box is not available at this time.

### Monitor Brand and Model

The Monitor Brand and Monitor Model drop down list boxes reflect which monitor setup you are currently using and the vertical refresh rates available. Generally, the higher the refresh, the better the screen will look.

To change your monitor selection, click the scroll button and use the arrow keys to scroll through the alphabetical listing. Once you have chosen a new monitor brand, select a monitor model by clicking on the Monitor Model scroll button to make your selection. Depending on the monitor brand and model you selected, the monitor refresh rates change accordingly.

### Monitor Refresh Rates

The drop down list boxes let you select the monitor refresh rates for each resolution for your monitor selection. If you select None for any screen resolution, any higher resolutions will be unavailable. This will also turn off the corresponding choices in the Resolution box.

In general, the higher the refresh rate, the better the display quality and the lower the performance. This is because the graphics system can only do a fixed number of operations per second. The more time it spends redrawing the screen, the less time it has available to perform other operations. Consult the manual that came with your monitor to determine the proper settings for these fields.

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## Colors

These buttons let you choose the number of colors that will be available to Windows 3.1 after Windows is restarted. Some of these choices may be unavailable. This is because of the amount of video memory in your system and the resolution that you have selected. If you need more colors, there will be some slowdown in graphics performance. If you chose OS/2-Windows in the Operating System field, then the only possible choice is 256 colors.

## Resolution

These buttons let you choose the resolution that WinMode will use to run Windows 3.1 after Windows is restarted. Some of these buttons may be unavailable because of the amount of video memory in your system or if some of the monitor refresh rates have been set to Unavailable.

## Operating System

The Operating System buttons let you set the operating system that you are running Windows in. This is very important because the configuration and capabilities of the driver are very different in OS/2 and DOS. The most obvious difference is that the driver will only work in 16 and 256 color modes in OS/2. There are a number of other differences in the configuration of the driver. Note that prior to installing OS/2 for Windows, you will need to run WinMode and select the OS/2 option.

## Font Size

The small fonts are intended for lower resolutions and higher resolutions on large monitors. With smaller monitors, the large fonts are more readable at higher resolutions.

## About

The About button will display a dialog box with the version number of WinMode and a copyright notice.

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## Help

For help on WinMode, select the Help button. The main help screen contains an image of the WinMode screen. Place the cursor over the field(s) that you need help with. When the mouse pointer changes to a hand, click to display the help text for that field. Click again to make the pop-up text disappear.

## Cancel

The Cancel button closes the dialog box and exits the program without making any changes. Selecting Close from the control menu or double clicking on the control menu box will have the same effect.

## OK

The OK button closes the dialog box and accepts the choices that you have made.

After clicking OK, your computer will be reconfigured to use the choices that you have made. These changes may need to be added to your AUTOEXEC.BAT file for them to be permanent. If this is necessary, you will be prompted by the program.

If WinMode detects that you changed your Windows 3.1 configuration, you will be asked if Windows should be restarted. If you answer Yes, Windows will restart immediately. If you answer No, then you will have to exit Windows and restart it manually for the changes to take effect.

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## Microsoft® Windows NT Drivers

The Microsoft Windows NT display drivers work with Microsoft Windows NT version 4.0. Before starting, make a backup copy of the Windows NT Driver diskettes and put them in a safe place.

### Windows NT 4.0 Installation

Once Windows NT 4.0 has been installed on your system, follow the procedure listed below to install the Microsoft Windows NT 4.0 display driver.

1. Right click on the Windows NT desktop (the Windows background where no windows or icons are displayed) and select Properties.
2. At the top of the dialog box, click on the Settings tab.
3. At the bottom of the Settings display screen, click on the Display Type button.
4. Click on the Change button in the Adapter Type box.
5. In the Change Display screen, click on the Have Disk button.
6. Insert the driver diskette labeled 'Windows NT 4.0 Driver' in drive A: and follow the on-screen instructions.
7. When Windows NT asks where the driver is located, type  
A:\  
The Windows NT 4.0 driver will be installed in the Windows NT System directory.

To configure the Windows NT 4.0 driver, follow the procedure listed in the next section.

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## Configuring the Windows NT 4.0 Driver

To configure your Windows NT 4.0 driver once it is installed, follow the next two procedures listed in consecutive order.

### Selecting a Monitor

To enable the Windows NT 4.0 Settings dialog box, where you can change your driver and monitor configurations, to show only those monitor configurations that your monitor can actually do, a Monitor Selection utility is available.

1. Right click on the Windows NT desktop (the Windows background where no windows or icons are displayed) and select Properties.
2. From the Display Properties dialog box, click on the Monitor Selection tab, located at the top of the dialog box.
3. Choose your Monitor Brand and Monitor Model by clicking on the respective arrow buttons to display the monitor drop-down boxes.

After selecting your Monitor Brand and Monitor Model, the highest refresh rate, which your monitor is capable of, will display in the Monitor Capable Refresh Rates section of the Monitor Selection dialog box.

### Changing the Display Settings

After completing the above monitor selection, you are now ready to configure all the display settings of the Windows NT 4.0 driver.

1. From the Display Properties dialog box, you can change your driver and monitor configurations. Click on the Settings tab, located at the top of the dialog box.
2. Adjust the settings using the drop-down boxes and slider bars. Depending on your monitor, the Windows NT 4.0 driver can display the following resolutions: 640x480, 800x600, 1024x768, 1152x864, 1280x960, 1280x1024 and 1600x1200.
3. Follow the on-screen prompts to complete the Windows NT 4.0 driver or monitor configuration.

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## Microsoft® Windows 95 Driver

The Microsoft Windows 95 display driver works with Microsoft Windows 95 and supports DirectDraw™ and Direct3D™. Before starting, make a backup copy of the Windows 95 Driver diskettes and put them in a safe place.

### Windows 95 Installation

Once Windows 95 has been installed on your system, follow the procedure listed below to install the Microsoft Windows 95 display driver.

1. Right click on the Windows 95 desktop (the Windows background where no windows or icons are displayed) and select Properties.
2. At the top of the dialog box, click on the Settings tab.
3. At the bottom of the Settings display screen, click on the Change Display Type button.
4. Click on the Change button adjacent to the Adapter Type box.
5. In the Select Device display screen, click on the Have Disk button.
6. Insert the first driver diskette labeled 'Windows 95 Driver' in drive A: and follow the on-screen instructions. The Windows 95 driver will be installed in the Windows 95 System directory.
7. If DirectDraw™ or Direct3D™ has previously been installed on your system, the Windows 95 driver is now ready to run. If DirectDraw™ or Direct3D™ has not been installed, you will need to reboot your system again to initialize the driver.

To configure the Windows 95 driver, follow the procedure listed in the next section, *Configuring the Windows 95 Driver*.



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## Configuring the Windows 95 Driver

Your CL5465 Windows 95 driver may be configured in many ways to get the optimum visual display and performance. There are four tabs located on the Display Properties dialog box that customize the Windows 95 driver: Refresh tab, 2D Performance tab, 3D Performance tab depending on your system configuration.

In order to configure your Windows 95 driver once it is installed, you need to get to the Windows 95 Display Properties dialog box where the driver tabs are located.

1. Right click on the Windows 95 desktop (the Windows background where no windows or icons are displayed) and select Properties.
2. From the Display Properties dialog box, you can view and change your monitor configuration, refresh rate, 2D and 3D performance. Before making your configuration changes, reference the sections below for a complete description of what options are available for each driver configuration tab.
3. After making your configuration changes, follow the on-screen prompts to complete the Windows 95 driver configuration.

## Configuring Your Monitor

To change your Windows 95 monitor configuration, click on the Windows 95 Settings tab, located at the top of the Display Properties dialog box, and adjust the settings. Reference your Windows 95 documentation for an explanation of the options available in the Setting tab dialog box.

If you elect to use the Settings icon by clicking on the Adjust Display Properties check box, it can be used as an easy reference for selecting the refresh rate of a specific display mode, referenced in the section below.