TABLE OF CONTENTS

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CHAPTER 1   INTRODUCTION

1.1 FEATURES

The ET6000^{TM} PCI VGA card uses TSENG LABS powerful ET6000 ^{TM} 128-bit GUI multimedia graphics accelerator, to provide excellent graphics performance at high resolutions. It provides the flexible features to meet a wide range of user requirements.

- Full PCI 2.1 compatibility.
- Up to 90 Hz high screen refresh rates.
- Display memory 1MB MDRAM (Multibank^{TM} DRAM), up to 4.5MB MDRAM.
- 700MB/sec. Peak memory bandwidth .
- Software MPEG playback support.
- VESA VBE, DPMS, DDC support.
- Full software support, including enhanced drivers for Windows^{TM} 3.1, Windows^{TM} 95, Windows^{TM} NT, OS/2, AutoCAD® , and Direct Video 2 for Windows 95.
- VESA standard Feature Connector support .

1.2 DISPLAY MODES SUPPORTED

Modes	MDRAM Amount				Refresh Rate
	1MB	2MB	2.5MB	4MB	
1280x1024, 16.7M	-	-	-	✓	75Hz
1280x1024, 65536	-	-	✓	✓	75Hz
1280x1024, 256	-	✓	✓	✓	75Hz
1024x768, 16.7M	-	-	✓	✓	75Hz
1024x768, 65536	-	✓	✓	✓	75Hz
1024x768, 256	✓	✓	✓	✓	75Hz
800x600, 16.7M	-	✓	✓	✓	90Hz
800x600, 65536	✓	✓	✓	✓	90Hz
800x600, 256	✓	✓	✓	✓	90Hz
640x480, 16.7M	✓	✓	✓	✓	90Hz
640x480, 65536	✓	✓	✓	✓	90Hz
640x480, 256	✓	✓	✓	✓	90Hz

CHAPTER 2 HARDWARE INSTALLATION

INSTALLATION PROCEDURE :

1. Turn off your computer and disconnect all peripherals.
2. Remove the cover of the computer per the owner's manual.
3. Install the card in one of the PCI bus slots.
4. Replace the cover and reconnect the peripherals.

If the system successfully powers up and the normal DOS boot-up messages appear on the screen, the card is installed properly.

CHAPTER 3   A-PLUS DISPLAY DRIVER INSTALLATION

3.1 Installation Overview

To facilitate the smooth installation of the enhanced display device drivers and utility software, you should read the instructions in this chapter carefully prior to attempting installation. This chapter describes the installation procedure for DOS , Windows 3.x and Windows for Workgroup, Windows 95, drivers. It is recommended that you make a backup copy of the installation disks before you begin.

3.2 DOS Drivers

Step 1: If you are installing a DOS application driver or utility, insert the disk labeled "ET6000 DOS and Windows Drivers" into floppy drive A (or drive B), and run the INSTALL program from the DOS command line by typing A:\DOS\INSTALL [enter]

(or B:\DOS\INSTALL [enter] as appropriate). You will be presented with a list of options similar to the one illustrated below.

```
[X] ET6000 VGA DOS Utilities
[ ] Autodesk Device Interface 4.2
```

Step 2: Use the arrow keys to move to the option you wish to install, press the space bar to select (or de-select) it, it is allowed for multiple selections. After having selected the option(s), then press [enter], you may be presented with relevant application notes, read these notes carefully.

Step 3: After reading the application notes, press [enter] to continue with the installation procedure. You will be prompted to confirm a directory where the files should be copied (normally the application's directory). You also have the option of entering a drive and directory of your choice. If the directory you choose does not exist, it will be created for you.

Step 4: After the installation procedure has completed, refer to the relevant manual or notes for futher information.

3.3 Windows 3.x / Windows for Workgroup Drivers and Utility

Step 1: Before starting Windows, if your Windows is not in VGA mode, change to the Windows directory in DOS command line, then type SETUP, select Display, highlight the VGA, and press [enter].

Step 2: Launch Windows, insert the disk labeled "ET6000 DOS and Windows Drivers" into floppy drive A (or drive B), run the **SETUP** program on Diskette from the Windows Program Manager by selecting File|Run and typing A:\SETUP (or B:\SETUP as appropriate). The Setup Program will copy the Windows driver and supported files to your hard drive, create a Program Group, and add the ET6000 display manager program to 'load' item of 'win.ini' file which Windows automatically loads each time it starts. The Setup program also place a 'Uninstaller' icon on program group which you can run it to un-install this package**.**

Step 3: After installation is completed, the Display Control Panel will display, select the desktop size (resolution), colors (color depth), refresh rate, font size as you like, then press the "OK" button, restart Windows, then the ET6000 driver will be activated.

Step 4: After Windows is restarted, a 'ET VManager' icon will display at the bottom of your screen. Left Click the 'ET VManager' icon and then select the 'Diaplay Control Panel' menu item, or double click the 'Display Control Panel' icon on the new installed program group, the 'Diaplay Control Panel' program will be opened, please read the on-line help or contact the manual for futher information to configure your desktop environment .

3.4 Windows 95 Drivers and Utility

Special notes for the first time you install a Tseng Labs ET6000 card:

Due to the plug & play feature of Windows 95, if it is the first time you install a ET6000 card and then launch Windows 95, Windows will find a new device (Tseng labs ET6000 VGA card) is installed and ask you to insert the driver diskette. In this case, please insert the diskette labeled "ET6000 DOS and Windows Drivers" into floppy

drive A (or drive B), then input the driver source as A:\ (or B:\ as appropriate). After that, Windows will prompt you again to select the device type, please select "Tseng Labs ET6000 PCI", then Windows will copy the ET6000 drivers and ask you to restart Windows, you need to choose 'OK' to restart Windows so that the new driver will take effect.

After Windows 95 is restarted, you should follow the steps below to install the display utility and/or driver.

Step 1: Launch Windows 95, insert the disk labeled "ET6000 DOS and Windows Drivers" into floppy drive A (or drive B), click the Start Menu and select Run then typing A:\SETUP (or B:\SETUP as appropriate).

Step 2: The Setup Program will install
(i) the display control application
(ii) the Windows 95 ET6000 display drivers

In(ii), Setup program will prompt you to input the ET6000 driver path, please input A:\ (or B:\), after that, Setup program will prompt you again to select the device type, please select "Tseng Labs ET6000 PCI" and click on OK. Then Windows will copy the ET6000 drivers, after the installation is completed, you need to restart Windows so that the new driver will take effect.

Step 3: After Windows is restarted, a 'ET VManager' icon will display at the bottom of your screen. Right Click the 'ET VManager' icon and then select the 'Diaplay Control Panel' menu item, or double click the 'Display Control Panel' icon on the new installed program group, the 'Diaplay Control Panel' program will be opened, please

read the on-line help or contact the manual for further information to configure your desktop environment .

3.5 Windows NT 3.5 Drivers

To install the ET6000 display drivers for Windows NT 3.5, you must select the "Display" applet from the NT Control Panel which is located in the Program Manager Main folder.Change the Display option as described in the manual supplied with NT. The ET6000 drivers for NT 3.5 are located in the diskette labeled "ET6000 DOS and Windows Drivers" at the directory **\NT35**.

3.6 OS2 Warp Drivers

To install the ET6000 display drivers for OS2 Warp, please read the README.WAR on the diskette labeled 'OS2 Warp Driver' for further information.

Setting VGA Mode
Your system must be in 'VGA' mode prior to installation.
To restore to VGA mode :
1. Turn on the computr. If the computer is already on, press Ctrl+Alt+Del to restart it.
2. When a small white box appears in the upper left-hand corner of your screen, press Alt+F1.
3. When the Recovery Choices screen appears, prss V.

Installing the ET6000 PM Driver
When the desktop appears, open a OS/2 Window or a
OS/2 Full Screen session.
Change to the 'A' drive.
Insert the diskette into the 'A' drive and type :
"setup [source path:] [target drive:]
Where "source path" is the location of the SETUP.CMD
file and "target drive:" is the drive letter + ":" of your boot
drive. Example "setup a: c: "
The setup program will copy a few files to your hard
drive and ask you to reboot your machine and remove
the diskette.

After the reboot, click the right mouse button on the
desktop to display the desktop menu. Choice 'System
setup' and 'Display Driver Install' to begin the second
phase of the display driver installation. Choice Primary
Display and select Tseng Laboratories ET6000 from list
adapters.

At the Monitor Configuration / Selection Utility screen,
Install Using Display Adaptor Utility Program.
At the Monitor Configuration / Selection Utility Location
screen backspace over the "A:\" and type :
c:\os2\svga.exe on mointor; click OK.
At the SVGA modes and Refresh rates supported
screen type "AUTO" and press Enter
Insert the driver diskette in to 'A' drive
At the Source Directory screen click INSTALL, & OK.
Type Exit and reboot your system.

Regenerating SVGADATA.PMI
You may have to regenerate you SVGADATA.PMI file
after the install is complete. To do this, either boot to
real DOS or start a DOS full-screen session. Go to the
OS/2 directory of your OS/2 boot partition and type :
"SVGA ON DOS"
The screen will go black for several seconds while the
utility gathers information about the modes support by

your adapter. Now, your DOS session will reappear. At this point, rename the file SVGADATA.DOS to SVGADATA.PMI and reboot the system.

3.7 A-PLUS Display Utility

The A-PLUS Display Utility, is an integrated set of utilities which you can use to configure and adjust your graphics display card for optimal usage under Microsoft Windows 3.x, Windows for Workgroup and Windows 95. The A-PLUS features monitor Plug n' Play support, on-the-fly resolution switching, on-the-fly refresh rate changing, monitor centering, custom cursor color and a variety of other productivity enhancing features.

Procedure to Configure A-PLUS Display Driver

Left Click (Windows 3.x), or right click(Windows 95) the 'ET VManager' icon and then select the 'Diaplay Control Panel' menu item, or double click the 'Display Control Panel' icon on A-PLUS driver program group, the 'Diaplay Control Panel' program will open, then with the following configuration procedures, you can set the optimized desktop environment for yourself.

1. Clicking Monitor tabbed dialog to open it, then click 'DDC detect' (Windows 3.x) or 'Change' (Windows 95) button to view your monitor information. If you have a plug n' play monitor, A-PLUS driver will show your monitor's manufacturer name and model name, and list all the available resolutions with the maximum vertical refresh rate that your monitor can support. If your monitor does not support plug n' play, on Windows 3.x, a "Old-type monitor" message will be displayed, but on Windows 95, you can select the monitor type manually.

2. Clicking Desktop tabbed dialog to set various desktop environments. If you have selected a monitor, a button, below 'Refresh rate' box, with caption 'Load PnP monitor refresh rates' or 'Load selected monitor refresh rates' will show, press this button will update the refresh rate for all modes in the 'Refresh rate' box, these refreah rate values are the maximun refresh rates which your monitor supports,

you can use these refresh rates with no trouble. However, you can still select a higher refresh rate if you like, A-PLUS driver has 'Preview' facility(see below) which means if your monitor can't support some resolution and refresh rate combination, simply press 'Enter' key or space bar or wait 15 seconds, then the original settings will be restored. Now you can select the desired resolution* , color depth, and font size*, and choosing the expected vertical refresh rate* from the combo-list of the resolution you choose, then you click "OK" or "Apply" button to finish the desktop configuration.

3. After Windows changes to the new desktop setting, A-PLUS driver will pop up a "Reconfirm" message dialog. You need to click "OK" to accept the new desktop resolution and/or refresh rate, otherwise the setting will be changed back to the original one either by clicking "Cancel" (defaulted option) or press 'Enter' key or space bar or being changed back automatically after 15 seconds. Remember that, if you change your display to higher resolution or higher refresh rate and your Windows can't appear correctly, simply press 'Enter' key or space bar or wait 15 seconds and your Windows will be restored with original settings.,

4. Clicking Monitor tabbed dialog to adjust screen position. You can locate the screen to the center of the monitor by clicking the four buttons in Screen Adjust group. Also, A-PLUS driver provides you the Compute Refresh Rate utility to let you check the current vertical refresh rate. After this adjustment, you can click "Apply" or "OK" to memorize the final setting. Next time you enter this mode, Media Pro will auto-adjust the screen centering.

5. Clicking Cursor tabbed dialog to choose the hardware cursor color according to your preference.

6. Clicking DMPS tabbed dialog to set the time slot for each power-saving mode.

3.8 A-PLUS Display Utility Operational Guide

Desktop
The Desktop dialog allows you to configure your desktop size, color depth, font size and refresh rate.
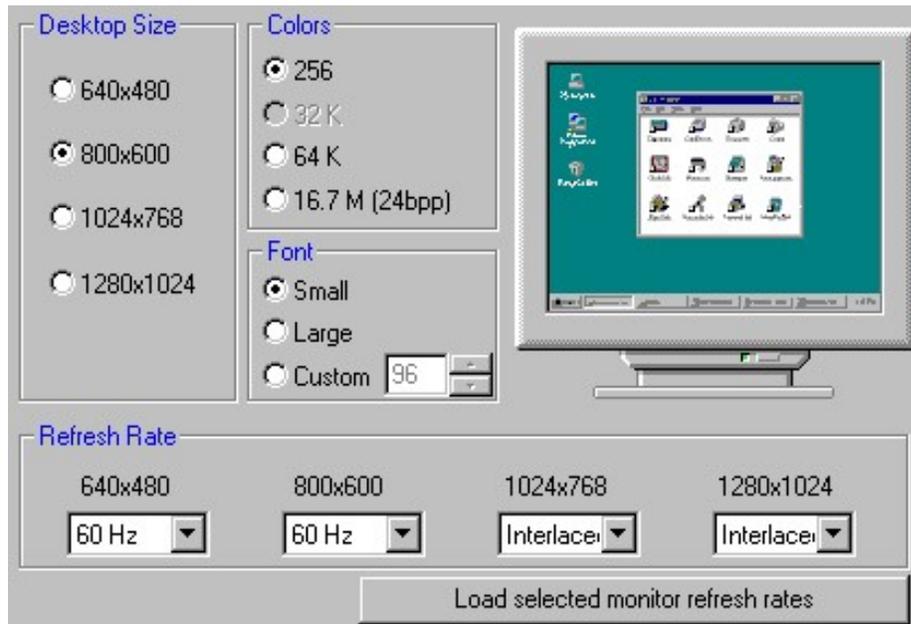
Desktop Size:
The desktop size option allows you to select a desktop resolution.

Colors:
Available color options depend on desktop size and installed memory, and determine the number of colors that can be displayed on screen.

Font:
This option allows you to select the font size Windows will use for system menus and resources.

Refresh Rate:

These options allow you to adjust refresh rate settings for each display mode. Faster refresh rates are less likely to cause eye fatigue due to screen flicker.

Load selected monitor refresh rates
This button will load the maximum refresh rates for all resolutions which detected by DDC monitor or by the monitor you selected. These refresh rates are only as a suggestion, you are allowed to choose a different refresh rate if you like.

Monitor

Detect DDC monitor or select monitor type, Screen adjustment and compute the real refresh rate.
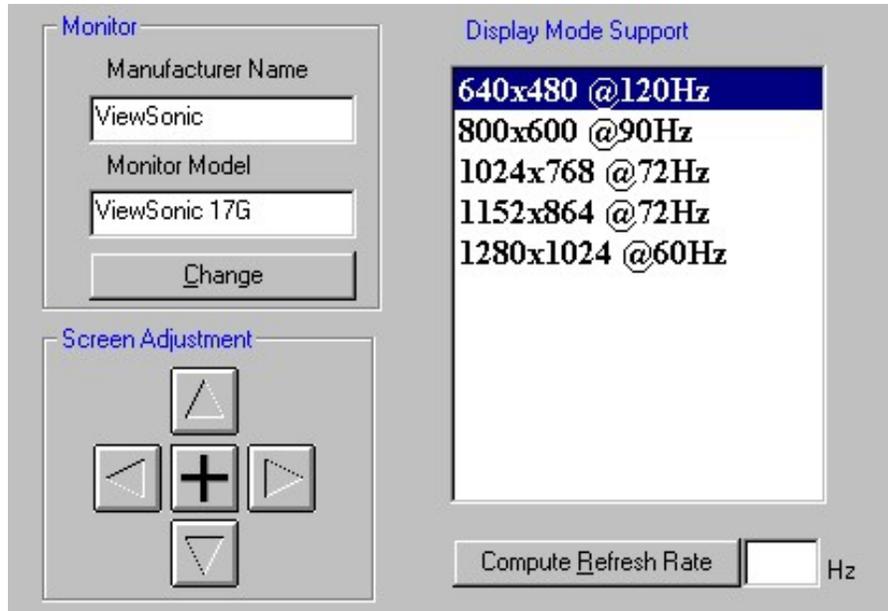
DDC detection or Change monitor type:
This button will be displayed as "DDC Detect" on Windows 3.x and as "Change" on Windows 95. Press this button will detect your monitor to see if it supports Plug & Play facility. If it does, the manufacturer of your monitor and the display modes which your monitor supports will be shown; if your monitor does not support PnP, then the "Old type monitor" will be shown on windows 3.x, but if you are running on Windows 95, then you have a option to select the monitor type manually.

Compute Refresh Rate:
When you click on the Compute Refresh button, A-PLUS driver will attempt to determine the current refresh rate of your monitor in Hz.

Screen Adjustment:

The Screen Adjustment buttons allow you to adjust screen position. Using the arrow bitmap buttons for up, down, left, right adjustment, the cross (+) bitmap button on the center will restore the screen to its original position.

DPMS

The DPMS group shows the current power management settings. Inactivity time-out values are shown for Standby and Off. Display Power management services work in conjunction with EPA Energy Star compliant monitors. The DPMS screen allows you to enable, configure and test these services.
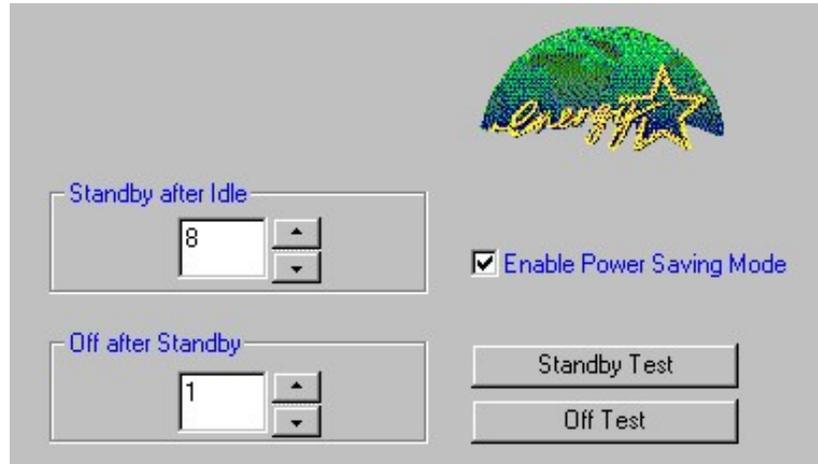
Enable Power Saving:
To enable power savings this option must be checked. If you do not wish to use power management services, uncheck this option.

Standby Mode:
This option allows you to set the inactivity delay time, in minutes, after which Standby power management takes effect. Standby mode provided minimal power savings but has the fastest recovery time.

Off Mode:
This option allows you to set the inactivity delay time(in minutes) after your monitor is on the standby mode when Off power management will takes effect. Off mode provided maximun power savings but has the longest recovery time.

Test Buttons (Standby Test and Off Test) :

These test buttons allow you to check the effect immediately when your monitor enter "standby" or "off" power saving mode.

Cursor
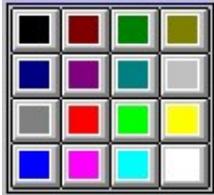
The Cursor dialog allows you to change the cursor color.
There are 16 cursor colors you can choose.

Info. (Information)

This window shows the resolution, color-depth, font size and refresh rate for current desktop setting, the graphic chipset, the versions of the BIOS and Windows driver, and also the total video memory size on your graphic card.

CHAPTER 4   SOFTWARE MPEG DRIVER

INSTALLATION

4.1 MEDIAMATICS MPEG ARCADE Player (Win 31, Win 95)

The VGA card supports software MPEG function, this is a OM-1 compatiable MCI driver enabling software only Decode of MPEG-1 streams. It can read MPEG-1 System, Video and Audio Streams of up to 1.5Mbits/sec from Hard Disk or ISO/High Sierra CD-ROMS and play back on Windows 3.1 and Windows 95. For more information, please refer to "readme.doc" file.

4.1.1 Hardware Requirements

For Windows 95 --
● Pentium based system with 256K L2 cache
● Direct Draw Enabled graphics Card (recommended)
● SVGA graphics, 256 color minimum
● 8/16 bit Audio card with Windows 95 Drivers
   (For 8 bit cards - please configure the MPEG driver using Multimedia section in the Windows 95 Control Panel.)

For Windows 3.1x --
● Pentium based system with 256K L2 cache
● **Video for Windows 1.1d or 1.1e** by Microsoft
● DCI Enabled graphics card with OffScreen Color space support and DCI software (dciman.d11 and the DCI service provider)
● CD-I, Video CD compatible CD ROM
● 8/16 bit Wave card with Windows Drivers, the factory default is 16 bit PCM Wave data (for 8 bit cards please configure the driver using Control Panel/Drivers/Setup)

4.1.2 Installation

Whenever you change any configuration - either the Audio or Video quality from the Device/Configure Dialog - please stop playing all clips and exit all running instances of Media Player. New settings will take effect when Media Player is re-run.

※ Playing MPEG files from Windows 3.1x

1. Install the graphics device driver and DCI software and Video for Windows 1.1d or 1.1e
2. Install Mediamatics MPEG Arcade Player by running the program SETUP. EXE on the software disk.

※ Playing MPEG files from Windows 95

To play a MPEG file (.MPG, .MPA, .MPV) run Media Player in one of two ways :
● Start/Programs/Mediamatics Software MPEG/Arcade Media Player
● Start/Programs/Accessories/Mediamatics/Media Player

1. On the Device menu, click the Mediamatics Arcade Player
2. Double-click the file you want to play. (files with .mpg, .mpa, .mpv extension)
3. Click play the play the MPEG file.

※ Playing Video CD files from Windows 95

To play a MPEG file (..DAT) run Media Player in 1 of 2 ways :
● Start/Programs/Mediamatics Software MPEG/Arcade Media Player
● Start/Programs/Accessories/Mediamatics/Media Player

1. On the menu, click the Mediamatics Arcade Player
2. Double-click the file you want to play in the AVSEQ directory on the CD-ROM drive. (files with .dat extension)
3. Click play the play the Video CD file.

\# The Arcade Player for Windows95 is capable of playing only the newer **CD-i** discs which carry the **Video CD** label. **The DISC's that can be played back have the label "VIDEO CD" on the jacket / disc.**

4.2 XING - MPEG DRIVER (option)

The card supports software MPEG function, it supports all resolutions and color depths supported by ET-6000 Windows driver with DCI 1.6 support.

INSTALLATION

1. Install ET-6000 Windows driver compatible with DCI 1.6.
2. Launch Windows 3.1 or Windows 95.
3. Insert the Xing Native-MPEG Driver diskette in the drive A.
4. Run the SETUP program on the diskette in the Windows environment. (The SETUP program will automatically restart Windows.

To Use Video for Windows' Media Player with Xing Native-MPEG Driver
The driver should be used with Microsoft's Video for Windows ver.1.1e rtv Media Player. Refer to the Microsoft Video for windows User's Guide for detail.

To specify the Xing Native-MPEG Driver :
1. From the device menu, select the Native-MPEG ...device.
2. Select the drive, subdirectory and name of the MPEG file in dialog box.

To adjust viewing characteristics of the software MPEG files :
1. Use File/Open and/or Device/Native-MPEG... to select a file
2. From the menu, select Configure... to launch the configuration dialog box.

DCI support :
By default, the "Use DCI if available" option is active. When this option is disabled, the Xing Native-MPEG Driver will not use DCI.

DCI support :
By default, the "Use DCI if available" option is active. When this option is disabled, the Xing Native-MPEG Driver will not use DCI.

Rate Control :
When Rate Control is ON, the driver plays the loaded MPEG file at normal speed. When Rate Control is OFF, the driver ignores the frame rate, display ever video frame, and disanles audio playback.

Audio :
The sample rate options (11KHz and 44KHz) specify the rate at which the driver decodes the MPEG file.
The audio playback mode options (Steroeo and Mono) specify the decoding mode of the driver. Mono-encoded files will always be decoded in Mono mode.

4.3   DIRECT VIDEO

Direct Video revision II supports Direct X II standard, it should be run under MS-Windows 95 platform. For installation, you should enter into DOS mode.

1. Under DOS mode, insert the diskette labeled of "Direct Video " into the 'A' drive and change to the device.
2. Run ' Install', follow the instruction showed on screen.
3. Restart Windows 95
4. Run ' C:\DVIDEO2\SETUP'
5. Reboot the system