STEALTH 3D 3000
(PCI)

INSTALLATION GUIDE

Rel. 0996

Copyright by Diamond Multimedia Systems Inc.

STEALTH 3D 3000 - INSTALLATION GUIDE

Table of Contents

Introducing your Stealth 3D 3000 3
System Compatibility....3
Memory Extension 3
Installing the Card....5
Installing Windows 95 Software....6
Installing the Basic Software and Utilities 6
InControl Tools 95 for Windows® 95 7
Quick start instructions....7
Installing Windows 3.1x Software....8
Installing the Basic Software and Utilities 8
AutoCAD for Windows - BigFocus Driver....9
BigFocus Installation....9
Having Problems ? 10
Booting Problems....10
Video Problems....11
Difficulty Starting Windows and Other Applications 12
General Protection Fault (GPF) in Windows....13
Diamond Tech Support Team Europe - If You Need Help 14
Last-Minute Changes - README files....14
Diamond's Online Services: BBS, CompuServe, Internet 15
Diamond's Fax-back System 16
Diamond SuperCD: Driver and Software Updates on CD 16
Hardware Service....16
Trademarks, Copyright and Warranty 17
FCC and CE Information 18

Introducing your Stealth 3D 3000

The Installation Guide will help you through the installation of the graphics adapter. Please take a few moments to read through this manual to become more familiar with the card before installing it.
Your new graphic/multimedia card provides fast DRAM based 64-bit graphics technology with accelerated video playback. The card is capable of scaling full-screen video clips up to 30 frames-per-second.

System Compatibility

The card uses a 64-bit graphics accelerator chip designed for graphics programs such as Windows 95, Windows 3.1x and AutoCAD. The chip is backwards compatible with VGA. However, high-speed drivers have been provided which take advantage of the power of your new graphic/multimedia card.

Memory Extension

Necessity of Memory Extension

Your Stealth 3D 3000 is fitted with 2 MB VRAM or 4 MB VRAM. This memory size is adequate for many applications on the market.

- 4 MB VRAM is recommended for higher resolutions, faster refresh rates, and/or higher color depths.
- If you want or need z-buffering (Direct-3D/Games), consider a VRAM upgrade.

Memory Extension Modules

Optional memory modules (piggyback boards) are available.

For Stealth 3D 3000 with 2 MB VRAM

Upgrade module:	2 MB VRAM
Maximum video memory:	4 MB VRAM

Extending Memory

Warning! Prevent static electric damage. Static charges can cause severe damage to microcircuits, but here are some easy ways to see that it doesn't happen:

Hold the cards on the edges only. Don't touch edge connectors or exposed circuitry.
Leave the cards in the anti-static protective bag until ready to install them in your computer.
If possible, ground your body when handling the card. The metal power supply housing of your computer is generally considered the best place to ground yourself.
Do not place the cards on a metal surface.
Make the least possible movement to avoid building up static electricity from your clothing, carpets and furniture.

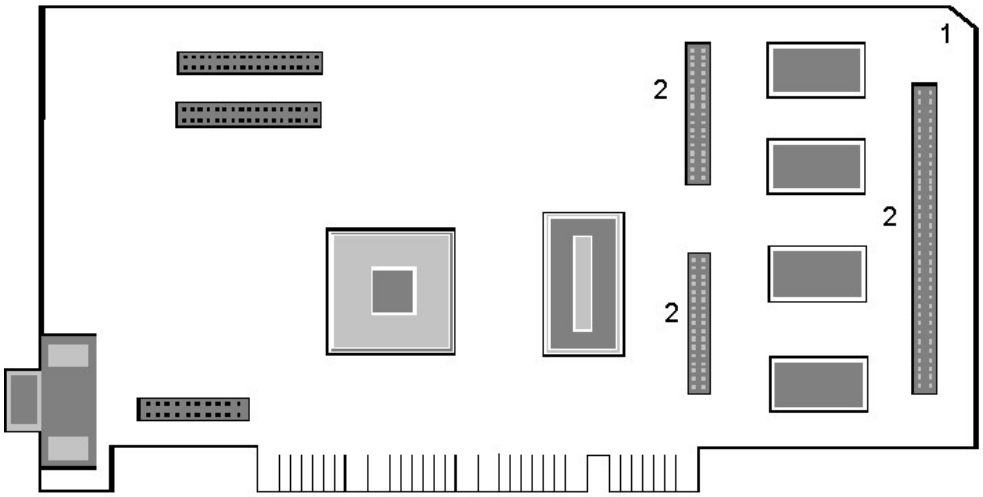
Step 1: Take the graphics card out of your computer, if it is already installed.

Step 2: Install the piggyback upgrade module to its designated connectors on the graphics card - see the illustration.

a) Adjust the piggyback upgrade module - with the connectors facing the graphics card - above the graphics card so that the beveled orientation corners (1) on both cards match.

b) Make sure that all pins on the connectors of the piggyback upgrade module fit correctly into the socket connectors (2) of the graphics card.

c) Press the piggyback upgrade module evenly until it is fully and snugly seated on the graphics card.



Step 3: Install the graphics card with the memory extension into your computer. Refer to *Installing the Card*.

Installing the Card

The installation is easy and straightforward. These installation instructions presume that you are familiar with your computer system. You may need to seek assistance from your dealer or consult your computer operations guide.

Warning! Prevent static electric damage. Static charges can cause severe damage to microcircuits, but here are some easy ways to see that it doesn't happen:

Hold the graphics card on its edges only. Don't touch edge connectors or exposed circuitry.
Leave the graphics card in the anti-static protective bag until ready to install it in your computer.
If possible, ground your body when handling the card. The metal power supply housing is generally considered the best place to ground yourself.
Do not place the graphics card on a metal surface.
Make the least possible movement to avoid building up static electricity from your clothing, carpets and furniture.

Step1: With the power off, remove the computer cover, find an available PCI slot and remove the bracket and screw. This is a good time to check if you have any co-resident graphics adapters built into the motherboard and disable them. If you do not disable them they will create a memory conflict with your graphic/multimedia card. This is also a good time to remove any old graphics cards from your computer.

- Remember which cables go to which connectors. You may want to label the cables and connectors before disconnecting them.
- Make sure you disable or remove any other video adapters installed in your system that may cause memory conflicts.

Step 2: Install the card firmly into its designated expansion card slot. Make sure to press it evenly and snugly into the slot. Once you are certain the card is installed properly in the slot, secure it with the bracket screw.

Step 3: Secure the computer cover and attach any previously removed cables. Use a standard IBM VGA DB-15 analog cable for the new graphic/multimedia card.

Installing Windows 95 Software

Installing the Basic Software and Utilities

In order to use your card in your PC it is necessary to install a package of basic programs, regardless of the operating system in use. Please execute the following steps in order to install the basic software.

Put the SuperCD in drive E: and start the installation (from E:) as follows:

1. Click on the START button in the task bar, select the option `'Run'` and then select START.EXE from the root directory of the CD.
2. Choose `English (E)` as your language for the installation.
3. The main menu is displayed.
4. Click on the `Start Installation` button.
5. Confirm your hardware if necessary.
6. Select one of the displayed installation options, and enter or confirm the path for the software installation.
   Depending on your choice, README information, or a list of software drivers available for installation, is displayed.
7. Click the `Next` button and follow the instructions on the screen. The installation program will automatically copy all the necessary files onto your hard disk.

The basic software is now installed. To install and configure the drivers you need for the different operating systems and applications you are using, please read the relevant sections that follow.

Note:	The monitor configuration set by default is: 640x480 resolution; 60 Hz screen refresh rate. Set higher screen refresh rates, resolutions, or color depths according to your monitor´s performance, for example, by using a corresponding tuning program (see ***InControl Tools 95*** *for Windows95*).

Note:	You can also install the Windows® 95 driver via the Standard Windows® 95 Installation Program. To do this, start the corresponding .INF file from the SuperCD (the file name corresponds to the board name, e.g. DMSSTL.INF). But please be aware that if you do so, additional utilities will NOT be installed.

InControl Tools 95 for Windows® 95

InControl Tools 95 provides a set of easy-access display and desktop utilities that help you maintain a picture perfect environment for work or pleasure.

With InControl Tools 95 you can:

- Use a popup menu to instantly switch desktop and viewport resolutions and zoom in and out on your viewport.
- Center windows and message boxes to the viewport or desktop.
- Control other display management features--screen saver, fast scroll, pan lock, even your hot keys and popup menus--with menu on/off switches.
- Adjust your system's audio volume with a handy popup slider bar.
- Add or remove items from your left- or right-button popup menus.
- The **Setup Wizard** guides you through the complete InControl Tools customization process. It is run when you install InControl Tools for the first time, but you can run it again any time by clicking the InControl Tools tray icon and choosing Setup Wizard.

Quick start instructions

When you install InControl Tools 95, a tray icon is added to your Windows95 desktop and several new options are added to your Display Properties dialog. Many of the new features available to you are activated immediately after installing InControl Tools and restarting Windows. You can then modify or toggle any feature on or off, either through the Display Properties dialog or directly from your enhanced desktop (right button) menu.

To start using InControl Tools immediately after installation and restart:

- Click your right mouse button on the Windows desktop. Your enhanced desktop menu appears. Note that this is the same Windows95 "right-click" menu that normally appears, but with several new items listed above the standard items. These new items are your InControl Tools enhancements. Check all features and submenus to review the default settings.
- Click your left mouse button on the Windows desktop. Your popup start menu appears. Note that this is the same menu that appears when you click the Start menu. Now, however, it's also available as a "floating" popup menu.

You're now ready to use or customize all of these new features (such as adding hot key shortcuts).

Installing Windows 3.1x Software

Installing the Basic Software and Utilities

In order to use your board in your PC it is necessary to install a package of basic programs, regardless of the operating system in use. Please execute the following steps in order to install the basic software.

Put the SuperCD in drive E: and start the installation (from E:) as follows:

1. Start the Program Manager, select `'File'-'Run',` then START.EXE from the CD.
2. Choose `English (E)` as your language for the installation.
3. The main menu is displayed.
4. Click on the `Start Installation` button.
5. Confirm your hardware if necessary.
6. Select one of the displayed installation options, and enter or confirm the path for the software installation.
   Depending on your choice, README information or a list of software drivers available for installation, is displayed.
7. Click the `Next` button and follow the instructions on the screen. The installation program will automatically copy all the necessary files onto your hard disk.
8. To enable the new driver installation the system restarts.

The basic software is now installed. To install and configure the drivers you need for the different operating systems and applications you are using, please read the relevant sections that follow in this chapter.

Note: The monitor configuration set by default is: 640x480 resolution; 60 Hz screen refresh rate.
Set higher screen refresh rates, resolutions, or color depths according to your monitor´s performance, for example, by using a corresponding tuning program. Refer to the online help for **InControl Tools Lite** (ICT Lite.

AutoCAD for Windows - BigFocus Driver

The BigFocus driver is supplied for use with AutoCAD 13 running under Windows 95 or under Windows NT. The driver allows view and layer manipulation, spyglass lens, bird's-eye view, and view export.
Using BigFocus is self-explanatory but if you should need further information, consult the integrated online help and/or the separate BigFocus documentation.

BigFocus Installation

Note:	You must have already installed the basic software from the CD before continuing.

Put the CD in drive E: and start the installation (from E:) as follows:

1. Click on the START button in the task bar, select the option `'Run'` and then select START.EXE from the root directory of the CD.
2. Choose `English (E)` as your language for the installation.
3. The main menu is displayed.
4. Click on the `Start Installation` button.
5. Confirm your hardware if necessary.
6. Select `Custom` installation, and enter or confirm the path for the software installation.
7. Click the `Next` button
8. Select `BigFocus` from the list and follow the instructions on the screen. The installation program will automatically copy all the necessary files onto your hard disk.

Note:	An important file will also be created on your hard disk: DSBIGFOC.INI DSBIGFOC.INI contains an important entry that you may need to change to accommodate for your hardware. See the 'Troubleshooting' section of the online help for more information.

Reconfiguring AutoCAD for Windows to use BigFocus:

1. Start ACADWIN, Select "`Options`", "`Configure`", and when selecting the display driver choose:
   `BigFocus - Accelerated Display Driver.`
2. Save your changes.

Having Problems ?

Booting Problems

- No Video
- System hangs
- System beeps

Solutions

- Make sure the card is seated properly in its expansion slot and the monitor cable is securely fastened to the card.
- Check to see if your monitor is getting power. You should double check the electrical cable and the power switch.
- Make sure your monitor cable has the proper pin-out configuration. It should be able to work with a standard IBM VGA DB-15 analog graphics adapter.
- Check if there is another display adapter in your system, or if your system has built-in video on the motherboard. You should remove or disable it. Your dealer or system user guide may be able to assist you.
- Check other cards in your system that might be using the same addressing space, for example, network or modem cards.
- Disable any VIDEO ROM BIOS shadowing at location C000-C7FF in your PC's CMOS setup. You may find the option located in the '`Advanced CMOS Setup`'.
- Try to install the card to a different PCI slot.
- Try the card in another machine. If the card works properly in another computer, there is a conflict between the system configuration and the card. If you have tried all above suggestions, please contact the Technical Support for additional help.

Note: The Stealth 3D 3000 card uses the following address areas.

I/O Address	3B0-3DF
Memory Address	A000-AFFF, B800-BFFF
Video BIOS	C000-C7FF

Video Problems

- Video Flicker
- Scrambled Video
- Screen Display is Small
- Monitor is not Listed

Solutions

- **Video Flicker**

  Increase the vertical frequency for the resolution that you are using. Do not specify a frequency that exceeds your monitor´s frequency range.

- **Scrambled Video**

  It is most likely that the selected frequency is not supported by your monitor. Select an alternative frequency that is supported by your monitor. For information on what resolutions and frequencies your monitor can handle, refer to the monitor´s user manual or contact your monitor manufacturer.

- **Screen Display is Small**

  Use a lower vertical refresh rate. The selected vertical refresh rate may be too high for the monitor to support it. A reduced screen size may be the result

  Note: For information on what vertical frequencies your monitor can handle, refer to the monitor´s user manual or contact your monitor manufacturer.

- **Monitor is not Listed**

  To set up the video card for your monitor you will need the vertical and horizontal frequencies along with the polarity settings for each resolution. Using the *InControl Tools* mode utility for Windows you can configure your monitor by selecting the *User Defined Monitor* option.

  Note: For information on what vertical frequencies your monitor can handle, refer to the monitor´s user manual or contact your monitor manufacturer.

Difficulty Starting Windows and Other Applications

Solutions

- Check your CONFIG.SYS file for a memory manager like QEMM386, EMM386, or 386MAX. A memory manager may be mapping devices in the video area, particularly in the “A000” or “B000” page. All Diamond cards use the memory area “A000-C7FF” exclusively.
- The following examples will help you to reserve the required memory area for your Stealth 3D 2000 card. Optimize your memory use again after having modified your CONFIG.SYS file.

  For using QEMM386 edit the following line in your CONFIG.SYS file
  DEVICE=C:\QEMM\QEMM386.SYS
  add X=A000-C7FF, and for Stealth Option ST:F ST:M also add XST=C000
  Example: DEVICE=C:\QEMM\QEMM386.SYS X=A000-C7FF XST=C000
  In the SYSTEM.INI file, find the section that starts [386ENH]. Remove the line DEVICE=MONOUMB2 (“Rem” the line with a semicolon at the beginning).

  For using 386MAX edit the following line in your CONFIG.SYS file DEVICE=C:\ 386MAX\386MAX.SYS
  add EXCLUDE=A000-C7FF
  Example: DEVICE=C:\ 386MAX\386MAX.SYS EXCLUDE=A000-C7FF
  In the 386MAX directory edit the file 386MAX.PRO, Place a semicolon (;) in front of the VGASWAP command.
  Also check for further commands that may map memory areas conflicting with the video memory area A000-C7FF.
  If this does not work, re-install 386MAX and select “NO” for the installation options ROM SEARCH, MDA AREA, and VGASWAP.
- For using EMM386 edit the following line in your CONFIG.SYS file
  DEVICE=C:\DOS\EMM386.EXE

  add X=A000-C7FF
  You may need to remove HIGHSCAN
  Example: DEVICE=C:\DOS\EMM386.EXE X=A000-C7FF
  In the SYSTEM.INI file, find the section that starts [386ENH]. Edit the file and add the following statement: EMMExclude=A000-C7FF
  If you have previously used MEMMAKER (DOS 6.x), run MEMMAKER again.

- Try to disable the following settings, because of possible conflicts with the driver installation: Wallpaper, 32-bit disk access, or 32-bit file and access Network drivers Screen Saver.

- Disable any programs that are loading automatically when starting Windows, for example, from the STARTUP group, RUN or LOAD lines from the WIN.INI file. Remove all programs from the STARTUP group and place semicolons (;) before the ‘LOAD’ and ‘Run’ lines in the WIN.INI file.

General Protection Fault (GPF) in Windows

Solutions

Follow the steps below to determine the cause of the problem.

- Change your display driver to ‘Microsoft Standard VGA’ - not ‘VGA Version 3.0’
- If the problem still exists, an application may have been corrupted or has a conflict with Windows. Re-install the application and/or contact your application vendor for additional help.
- If the problem no longer exists, reset the display to the Stealth driver. Then edit your CONFIG.SYS file and “Rem” all lines except of

  DEVICE=C:\DOS\HIGHMEM.SYS
  FILES=XX
  BUFFERS=XX
  for example: Rem DEVICE=C:\DOS\ANSI.SYS

  Then edit your AUTOEXEC.BAT file and “Rem” all lines except of the PATH= statement.

  Start your system again.

- If the GPF does not show, check your CONFIG.SYS file for a proper memory exclusion. Then add the ”Rem-lines back one at a time to identify the source of the problem.
- If the GPF still shows contact the Technical Support for additional help.

Diamond Tech Support Team Europe - If You Need Help . . .

Your documentation and the README files provide tips and suggestions to help you, should you encounter problems or have questions regarding the use of your Diamond product.
Additional technical support is available from the extensive information and support services offered by the Diamond Technical Support Team Europe. Further information is available from our company headquarters in the USA. Below is a brief description of our European support services and how you can take advantage of them. We also provide an overview of our worldwide information services.

In order for us to service your inquiries to the best of our ability, please be prepared to provide the following information when you contact Diamond for technical support:

- The exact designation of your Diamond Multimedia product
- The operating system you are using, as well as information about the computing environment in which you use your product
- For graphics and video cards, the card's BIOS version
- For modem products, result codes from the I3 command (if possible)
- Names and version numbers of the Diamond drivers and applications you are using
- Name and version number of the application with which you have encountered problems
- A detailed description of the problem. Please reproduce the problem several times and provide a detailed description of the necessary steps.

Last-Minute Changes - README files

Our software is constantly being improved and updated. The latest information is contained in README files. You can read the README files at any time: log to the subdirectory
...\INSTALL\GRAPHIC\STEALTH\3D3000\INSTALL\ on your CD and run
WSHOW README.ENG

Diamond's Online Services: BBS, CompuServe, Internet

Among other things, you can find the following kinds of information in the Diamond BBS as well as in Diamond's CompuServe forums and Internet services:

- the most current releases of Diamond drivers and software updates;
- optional drivers and programs that aren't standard components of our products;
- tips, hints and technical information prepared and constantly updated by Diamond's support staff--you'll find these under the heading Tips & FAQ's for our Products;
- and a variety of other information.

The online services are available 24 hours every day and provide (technical) information about all aspects of our products. Please consult these sources before calling our hotline. It's quite possible that the answer to your question is already documented in our online services.

Here's where you can reach the online services of Diamond's Technical Support Team Europe:

Diamond BBS

Diamond Germany	+49 - 81 51 - 266 333	Modem, up to 28.8 kBaud
	+49 - 81 51 - 266 334	ISDN
Diamond UK	+44 - 11 89 - 44 44 15	Modem, up to 28.8 kBaud
Diamond France	+44 - 11 89 - 44 44 15	Modem, up to 28.8 kBaud
	+49 - 81 51 - 266 333	Modem, up to 28.8 kBaud
	+49 - 81 51 - 266 334	ISDN

Diamond's CompuServe Forums

GO SPEA	European forum (German language)
GO DIAMOND	US forum (English)
GO SUPRA	US forum (English), for modem products

Diamond and Internet

World Wide Web

http://www.spea.com	European WWW server (multilingual)
http://www.diamondmm.com	US WWW server (English
http://www.supra.com	US WWW server (English),for modem products

FTP

ftp.diamondmm.com	US FTP server (English)
ftp.supra.com	US FTP server (English), for modem products

Diamond's Fax-back System

You also have access to a variety of information through our fax-back system. All you need is a touch-tone phone to select documents such as:

- technical tips, tricks and suggestions, compiled by our support staff;
- answers to frequently asked questions; and
- much more information about Diamond and its products.

Diamond Fax Info Service

The fax-back system is available 24 hours daily at the following numbers:

Diamond Germany	+49 - 81 51 - 266 332 Most information is available in German and English.
Diamond UK	in preparation
Diamond France	in preparation

Diamond SuperCD: Driver and Software Updates on CD

Most drivers and software updates are available on the Diamond SuperCD as well as from our online services. This CD is updated at irregular intervals and can be obtained directly from Diamond. Information on the current version of the SuperCD, including price and order details, is available via the Diamond Fax Info Service, or from our support hotline staff.

Hardware Service

DIAMOND products are subjected to intensive tests and fulfill the highest quality standards. Nevertheless, you have the benefit of additional security with an extended guarantee for graphics boards. In the unlikely event of you needing to use your guarantee, please contact your local distributor or retailer for help and advice. Your board is a complex electronic device and can only be repaired by authorized technical personnel with the required equipment. Do not attempt to change or repair any parts of this product. Doing so will render your warranty invalid.

Trademarks, Copyright and Warranty

Trademarks

The Stealth 3D 3000 is a trademark of Diamond Multimedia Systems, Inc. All other products named in this manual are either trademarks or copyrights of their respective owners.

Copyright Notice

This manual is copyrighted. All rights reserved. This document may not, in whole or part, be copied, reproduced, reduced or translated by any means, either mechanical or electronic, without prior consent in writing from Diamond Multimedia Systems, Incorporated. The information in this manual has been carefully checked and is believed to be accurate. However, Diamond Multimedia Systems assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Diamond Multimedia Systems be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. In the interest of continued product development, Diamond Multimedia Systems reserves the right to make improvements in this manual and the products it describes at any time, without notice or obligation.

© Copyright 1996, Diamond Multimedia Systems, Incorporated

2880 Junction Avenue, San Jose, CA 95134

Diamond Stealth 3D 3000 Warranty

Your Stealth 3D 3000 comes with a five-year hardware warranty. Diamond Multimedia Systems, Inc., (Diamond) warrants this Stealth 3D 3000 against defects in material and workmanship for a period of five years from the date of purchase from Diamond or an authorized Diamond agent. This warranty applies only to the original purchaser of the Stealth 3D 3000 and is not transferable. This warranty does not cover any incompatibilities due to the user's computer, hardware, software or any other related system configuration in which the Stealth 3D 3000 interfaces. Proof of purchase will be required before any warranty consideration by Diamond occurs.

This warranty does not cover any damage caused by negligence, non-authorized modifications, or parts installed without prior written permission from Diamond.

This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication, nor as a result of service to the product by anyone other than by Diamond.

DIAMOND IS NOT RESPONSIBLE FOR ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE, THIS PRODUCT. THIS INCLUDES DAMAGE TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some states do not allow limitation of implied warranties, or exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights. You may have other rights which may vary from state to state.

This warranty applies only to this product, and is governed by the laws of the State of California.

FCC and CE Information

This device complies to CE Certification pursuant to EN55002 IEC 801-2, 1991.

This device complies with Part 15 of the 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.

FCC ID # FTUPCI30208

This equipment generates and uses radio frequency energy and if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If this equipment does cause 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 of the following measures:

- Reorient the receiving antenna
- Relocate the computer with respect to the receiver
- Move the computer away from the receiver
- Plug the computer into a different outlet so that computer and receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful: How to Identify and Resolve Radio and TV Interference Problems.
This booklet is available from the
U.S. Government Printing Office,
Washington DC 20402, Stock No. 004-000-00345-4.

To meet FCC requirements: "SHIELDED CABLE(S) and POWER CORDS MUST BE USED TO CONNECT THE DEVICE TO A PERSONAL COMPUTER OR OTHER CLASS B DEVICE ACCORDING TO FCC 15.838D." ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USERS AUTHORITY TO OPERATE THIS EQUIPMENT.