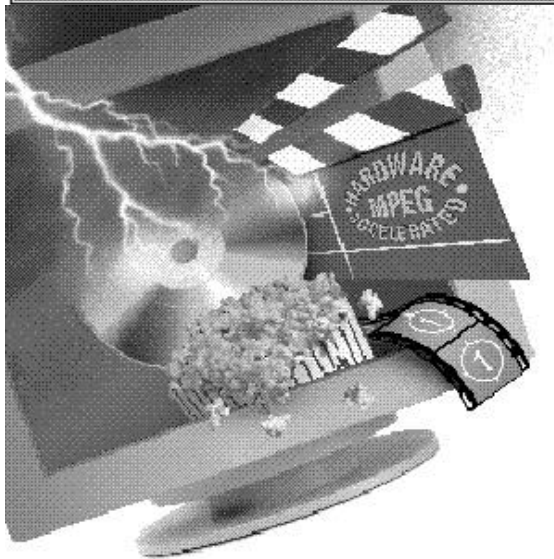


VOYAGER MOVIE PLAYER



PRODUCT CODE:
SVMP64

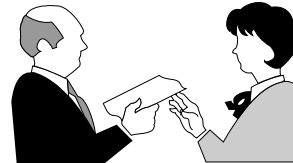
Before You Begin your Installation

The product you have purchased is designed to be easily installed into most IBM PC or compatible systems. Many products have large, easy-to-read legends to allow for the easy configuring of the product. This installation manual contains detailed instructions. Most included software has automatic installation programs to place the software correctly onto your computer. However, as all computers are configured differently, you may be required to perform some basic DOS or Windows tasks. If you are not familiar with basic DOS commands such as DIR, CD, or EDIT, you should check your DOS manual, or seek assistance from you local computer dealer to install the product.



How to get Technical Assistance

The dealer that you purchased this product or your computer from is the first place you should go for technical assistance. The dealer is usually the most qualified source of help, and is most familiar with your system and how this product should be installed. Many dealers have customer service and technical support programs, with varying levels of support offered, depending on your needs and



computer knowledge. ***Please contact the dealer first whenever a problem occurs.***

If your Dealer Can't Assist you

If you can't get assistance from your dealer, the manufacturer provides varying levels of technical assistance as summarized on the following page.

The Standard Free Technical Support number is for quick answers to specific inquiries on product features and technical questions (call **407-241-8088**; M-F, 8 am to 6:30 pm EST). Direct access to technical support representatives is provided on a limited basis.

If you require immediate attention or in-depth help with the installation of the product, please call our 900-priority support number for service. This number gives you immediate access to senior-level technicians. The number is **900-555-4900**. You will be charged \$2.00 per minute. The charges will appear on your next phone bill.

Damaged or Missing Items

We use many world-class quality assurance programs to ensure the product you purchased is of the highest caliber. Sometimes, however, a component may be missing from the box, or is damaged or corrupt in some way. If this happens, immediately return the entire package to your place of purchase so you may exchange it for a new one. Your dealer should be able to provide you with an exchange far more quickly than by contacting us directly. If for some reason you are unable to return the product directly to its place of purchase, refer to the "Servicing Your Product" and "Warranty" sections in this manual for instructions.



Boca BBS
407-241-1601



***Automated Fax
Retrieval System***
407-995-9456



Technical Support Fax
407-997-0918



***Standard Free
Technical Support***
407-241-8088



Priority Service
900-555-4900
(\$2 per minute)

On-Line Support!
CompuServe: GO BOCA
Internet:
email: support@boca.org
on the World-wide WEB:
http://www.boca.org



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1. Introduction

Congratulations on the purchase of the Voyager Movie Player. The Voyager Movie Player is a 1MB (upgradeable to 2MB) PCI-bus DRAM Accelerator Card with the ability to decode and play back MPEG1 (Motion Pictures Expert Group) video with 16-bit SRS CD-quality audio. The Voyager Movie Player allows you to play back movies or video clips at full screen from a CD-ROM, Video CD, hard disk drive, network, or from within OLE-compliant applications. It includes an LPB (Local Peripheral Bus) feature connector that allows you to attach a high-speed LPB-compatible peripheral product such as a video capture or tuner card.

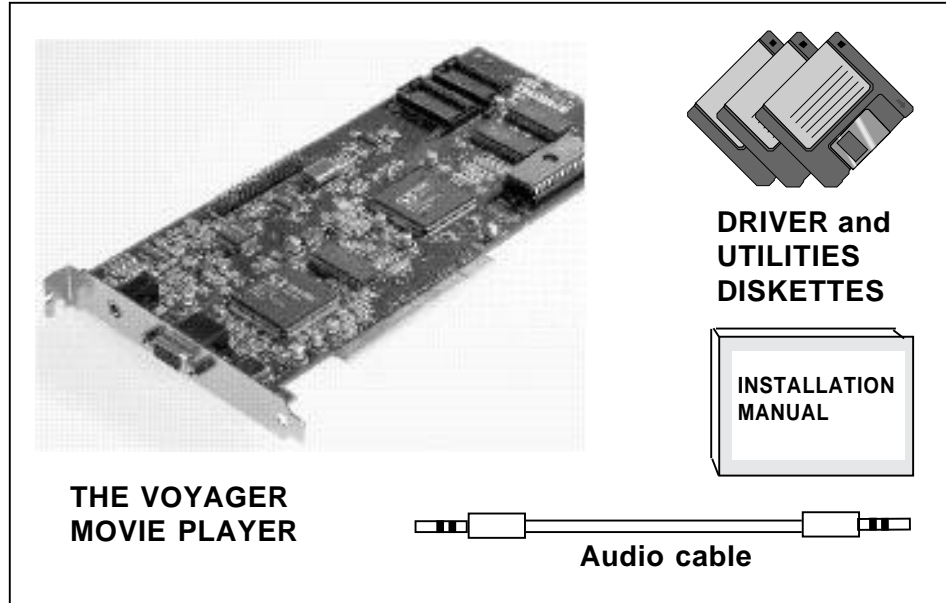
The EXPRESS Install provided on page 10-12 is intended for experienced and knowledgeable users. For more details, see pages 13-15 (hardware) and 23-34 (software). Pages 35-40 explain how to play movies. The balance of the manual contains a product overview (including compatibility and system requirements), instructions for installing Windows and DOS display drivers and utilities, troubleshooting, and technical specifications.

Although Windows 95 will detect the Voyager Movie Player and install basic video drivers, you MUST install the supplied drivers for Windows 3.x or Windows 95 in order to play movies. See the EXPRESS Install on page 10 in the manual, or the more detailed install in Section Five on page 23.

Make sure you have received the items as shown here.

If any items are missing, or appear damaged, contact your dealer for assistance.

Other software, CDs, documentation, and special introductory offers may also be included.

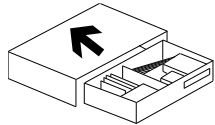


2. Express Install

**START
HERE!**

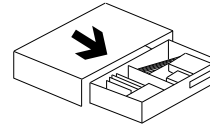
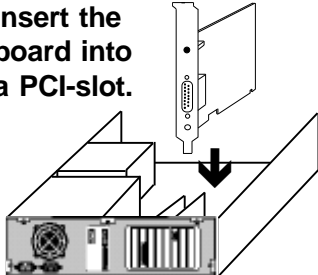
Windows 3.1 users should first change Display Settings to "VGA" before installing the Movie Player.

Turn OFF your computer.

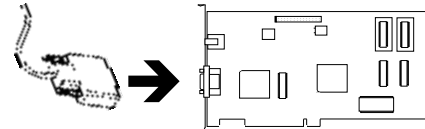


Remove your system cover and any existing video card.

Insert the board into a PCI-slot.



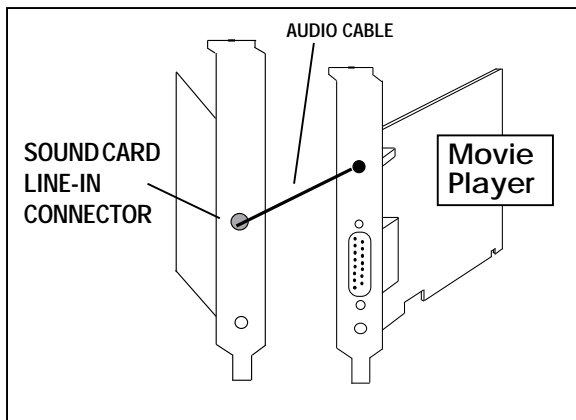
Replace your system cover.



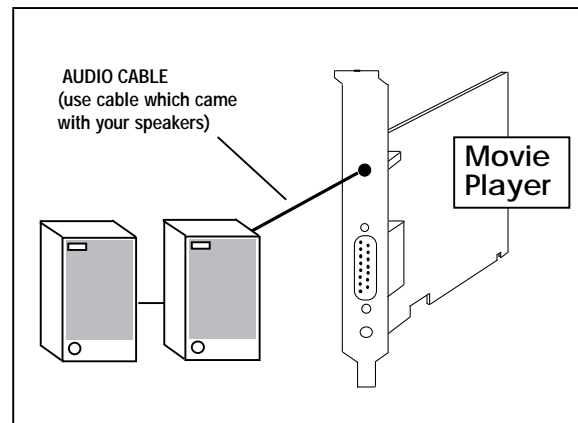
Attach the monitor cable.

Continue with next page.

If you are attaching to a sound card...OR






...if you are attaching to amplified speakers,




Turn ON your computer.

Install drivers; continue with next page.

	To:	Insert:	By:
WINDOWS 3.x USERS	Install Video for Windows drivers (for Windows 3.x only).	 Video for Windows Driver diskette...	Inserting diskette, selecting File..., Run..., typing A: (or B:) SETUP.
	Install DOS utilities and Windows 3.x drivers.. NOTE: If you are running Windows 3.x, You need to install the Video for Windows drivers first, then the Windows 3.x drivers.	 DOS & Windows 3.x Drivers diskette...	DOS: Inserting diskette and typing A: (or B:) INSTALL and pressing ENTER. Windows 3.x: Inserting diskette, selecting File..., Run..., typing A: (or B:) SETUP.
WINDOWS 95 USERS	Install Windows 95 or Windows NT drivers...	 Windows 95/ Windows NT Drivers diskette...	Windows 95: Inserting diskette, selecting Have Disk..., typing A: (or B:) ENTER. Windows NT: Inserting diskette, selecting Other..., typing A: (or B:) WINNTS [or WINNTW].

3. Installing the Voyager Movie Player

IMPORTANT NOTE FOR WINDOWS 3.1 USERS:
Before shutting down your computer to install the Voyager Movie Player, do the following:

1. Start Windows as you normally would.
2. From the Main Program Group, click on the Windows Setup icon. The icon shows a computer monitor and keyboard, with the text "Windows Setup" below it.
3. Select "Options", "System Settings".
4. Change the "Display" option to "VGA" (you may be asked for your original Windows diskettes).
5. After you change settings, you will be instructed to restart Windows. Ignore this, exit Windows, and shut off your computer. Now, continue with the physical installation.

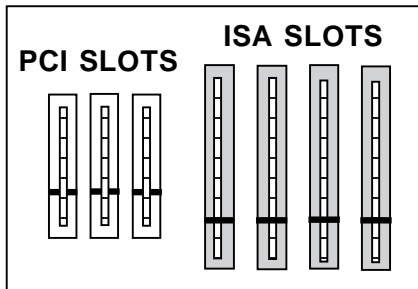
The reason for this procedure? When you turn on your computer with the Movie Player, Windows will be unable to load because its display settings will be looking for the video board that you removed. After installing the Movie Player, you can repeat the above procedure to select enhanced display settings.

1. Turn the power switch to the OFF position. Remove the power cord from the back of the computer and unplug the keyboard cable from the computer. Then use a small screwdriver to remove the screws that attach the computer's cover to the rear panel. Carefully slide the cover forward, away from the rear panel.

Remove any existing VGA/EGA card before installing the Voyager Movie Player.

The Voyager Movie Player board must be installed in a PCI (2.0)-bus compatible slot. PCI expansion slots are shorter than standard ISA slots. The Voyager Movie Player board will NOT function if it is plugged into a standard ISA slot.

Normally, plugging in the PCI-based Voyager Movie Player will disable any built-in video adapter. If this does not disable your built-in video adapter, your computer documentation should provide the necessary instructions.



2. Select any available PCI-Bus expansion slot.
3. Remove the screw and the metal plate that covers the external access to the slot you have selected.
4. Insert the Voyager Movie Player in the slot that you have selected, so that the edge connector on the bottom of the board mates with the socket on the motherboard. Press firmly on the board and ensure that it seats properly into the slot. Secure the board with the screw you removed in step 3.
5. Slide the computer cover back over the chassis, taking care not to let it catch on the disk drive or power cables. Once the cover is in place, replace all the screws that you removed earlier.

-
6. Re-attach all cables and power cords to their original positions.
 7. Attach the appropriate monitor cable to the Voyager Movie Player.

If you are attaching to an audio-out device either...

8. Connect either end of the supplied audio cable from the audio-out connector of the Voyager Movie Player to the **line-in connector** on a sound card... OR
9. Attach your **amplified** speakers to the audio out connector on the Voyager Movie Player.

Physical installation is complete.

***NOTE:** You will need to route an available Interrupt (IRQ) to the PCI INT A on the PCI bus. This is done either through your CMOS setup, or other driver utility which came with your system.*

10. Power up your system.

To enhance your display, turn to the Display Driver section (pages 23-34).

***NOTE:** Drivers are not required if the board is used under DOS and Windows in standard VGA graphics mode. Drivers are required to run high-resolution applications under DOS and Windows, and to enable MPEG movie playback.*

4. Product Overview

The Voyager Movie Player is a 64-bit PCI Bus DRAM Accelerator card with the ability to decode and playback MPEG1 (Motion Picture Expert Group) video with 16-bit SRS CD quality audio. The Voyager Movie Player allows you to play back movies or video clips at full screen from a CD-ROM or hard drive. It includes an LPB (Local Peripheral Bus) feature connector which enables you to attach a high-speed LPB compatible peripheral product such as a video capture or tuner card.

The Voyager Movie Player is based on a highly integrated S3™ Trio64V+™ architecture. The Trio64V+ contains an integrated RAMDAC and

Dual Clock Generator and Streams Processor for video acceleration. The Trio64V+ has a 64 Bit memory interface which provides 228 MB/second bandwidth to support resolutions up to 1600 x 1200, color depths up to 16M colors (2MB video RAM required), and refresh rates up to 75Hz non-interlaced.

The Voyager Movie Player has hardware based on the S3 Scenic/MX2 and Sonic AD. This hardware offloads MPEG video and audio decoding tasks from the system CPU. The Scenic/MX2 and Sonic AD allow the Movie Player to play back MPEG video at 30 frames per second and MPEG audio at 32K, 44.1K, and 48K samples per second.

Users of high performance CAD, Animation, and 3D Modeling applications, will benefit from the high system level performance offered by the Voyager Movie Player. Drivers are provided for support of major GUI applications such as AutoCAD and Windows.

Support for the EPA “Energy Star” requirements is provided via VESA DPMS support in the BIOS. The Voyager Movie Player can place a DPMS compliant monitor into power savings mode, thus reducing the overall power consumption of the display monitor. Monitor Plug-n-Play is supported by the VESA DDC (Display Data Channel) support in the hardware and BIOS. The VESA DDC support allows the video subsystem to sense the modes supported by the DDC compliant monitor, and only allows the Voyager Movie Player to be placed in those modes.

4.1 Features

- MPEG1 (Motion Pictures Expert Group) compliant. Allows you to play back movies from a CD-ROM or hard disk.
- CSC (Color Space Conversion) and XY scaling. Video playback can occur at full screen or in a small window on the monitor. The image can be continuously scaled without a loss of frames.
- DCI (Display Control Interface) for Windows. Improves display performance of video playback and graphics. DCI allows more direct access to the video graphics hardware under Windows.

- SRS 3D Surround Sound. Processes the MPEG audio to create a three dimensional sound field with only two speakers.
- PCI Bus Interface. For fast performance even under heavy system loads.
- 1MB DRAM Upgradeable to 2MB. DRAM provides an economical high-performance solution.
- 64-bit GUI Engine and memory interface. Provides the fastest performance for Windows, AutoCad, and other graphics intensive GUI applications.
- Streams processor capable of scaling AVI and MPEG video playback Windows to full screen without the loss of frames.
- Display Power Management Signaling (DPMS). Support for "Green PC" Applications.
- VESA BIOS Supported in ROM. No TSR needs to be loaded in the system for VESA applications.
- LPB feature connector. A high-speed feature connector that supports high-speed bi-directional multimedia peripheral products such as NTSC video capture and cable TV tuner cards.
- Supports interlaced and non-interlaced monitors. Compatible with virtually all monitor types.

- 2 Point Hardware line Draw. Increases re-draws and re-gens in CAD applications. 135Mhz dot clock. Provides a rock steady display at 75Hz.
- VESA Display Data Channel (DDC). Allows the video card to automatically sense display modes of a DDC compliant monitor.
- Direct Draw and Direct X for Windows 95 which increase the performance of video and graphics intensive applications such as MPEG movies and games.

4.2 Driver Support

Drivers are provided for the following GUIs and applications:

- Windows 95
- Windows 3.1/3.11/NT (3.5+)
- AutoCAD/AutoShade/3D Studio
- Video for Windows
- Windows 95 MPEG
- Windows 3.1 MPEG
- DOS OM-1 (for RealMagic® games)
- VREFRESH (utility for display settings)

Additional drivers not provided on the installation diskette may be available on our BBS (407-241-1601), FTP site (<ftp://boca.org>), and CompuServe Forum (GO BOCA).

4.3 Monitor Compatibility

The Voyager Movie Player board is compatible with VGA Color and monochrome analog monitors. TTL monochrome monitors with 9-pin connectors are NOT compatible with the Voyager Movie Player. It is also compatible with Multiple Frequency Monitors, provided the proper 15-pin cable adapter is used with the monitor and the monitor is set to analog.

Check your monitor manual and the video mode table in Appendix C to determine the modes supported by your monitor.

IMPORTANT: The Voyager Movie Player uses the same 15-pin (DB15) cable available from monitor manufacturers to interface with IBM computers. Using an incorrect cable may result in damage to the monitor and/or adapter. Contact the monitor manufacturer for proper cabling and pin-outs if you have questions.

4.4 System Compatibility

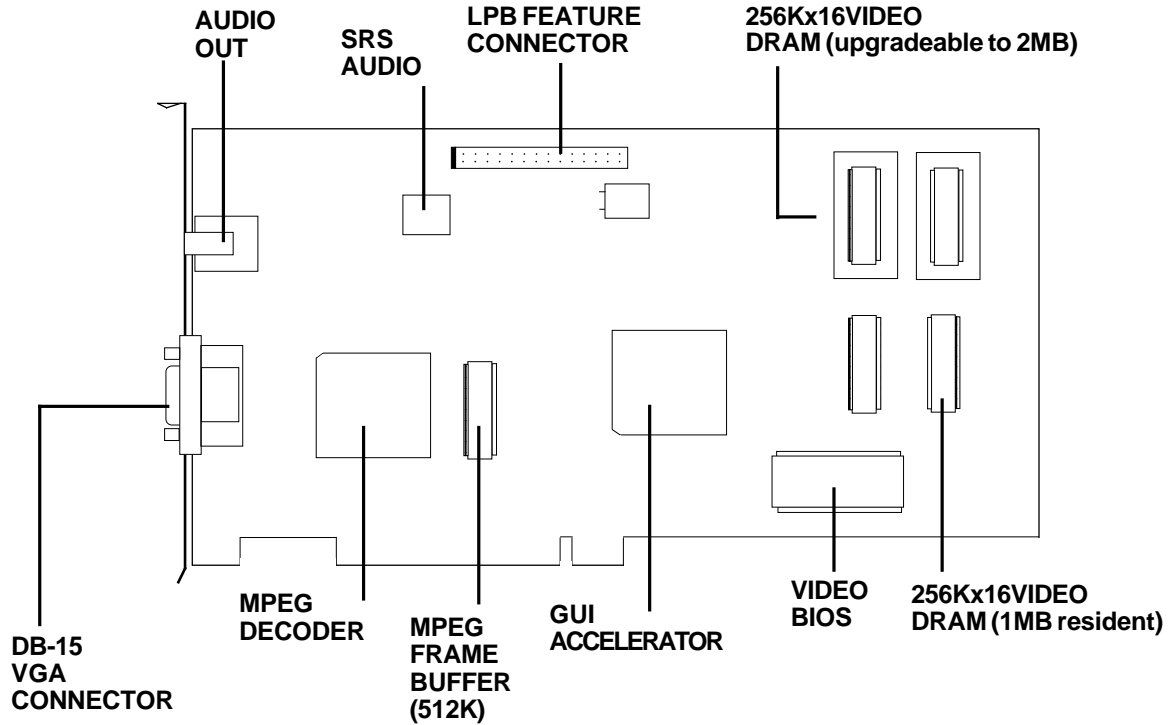
Systems with PCI 2.0 Local Bus slots are compatible with the Voyager Movie Player. If you are uncertain, refer to your system's guide to operation or check with the dealer or manufacturer of your computer. The Voyager Movie Player board is compatible with the IBM Video Graphics Array (VGA) and Enhanced Graphics Adapter (EGA) standards.

4.5 System Requirements

- 486DX2/66Mhz (or higher PC) with PCI 2.0 slot
- DOS 5.0 or later
- 8MB minimum RAM recommended
- Video monitor capable of the desired resolution (check the manual which came with your monitor)
- Dual-speed CD-ROM (XA-compatible)

The Voyager Movie Player must be installed in a PCI (2.0)-bus compatible slot. PCI expansion slots are shorter than standard ISA slots.

For a comprehensive list of video modes supported, refer to Appendix C.



5. Display Drivers

5.1 Introduction

This section describes the installation and operation of the display driver programs for Microsoft Windows and various utilities to:

- further enhance your video display.
- play back MPEG movies

Information on drivers for other popular graphics applications is provided in a README.TXT file on the diskette. This file 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 Voyager Movie Player board.

Highlights include:

- 1600 x 1200 resolution in 256 colors (interlaced)*
- 1024 x 768 resolution in 65,536 colors*
- 800 x 600 resolution in 16.7 million colors*
- 640 x 480 resolution in 16.7 million colors (*2MB video RAM required)

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

For a list of supported graphics resolutions for Windows95 and Windows 3.x, turn to Appendix F.

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

In this Manual	On README
<ul style="list-style-type: none">• Windows 95• Windows 3.1/3.11• Windows NT (3.5+)• Video for Windows• SVMP64 Utilities<ul style="list-style-type: none">• DOS OM-1• Vrefresh	<ul style="list-style-type: none">• AutoCAD (DOS)• AutoShade• 3D Studio

NOTE: To use the 800 x 600 or higher graphics display drivers, you must have a multiple frequency monitor capable of displaying that resolution. Standard VGA monitors may not have this capability.

Voyager Movie Player

5.2 DOS-only Users

For Windows users, turn to page 26.

- Make sure the Voyager Movie Player is present (physically installed) BEFORE installing any drivers.
- Insert the DOS and Windows 3.x driver diskette into your system drive A: (or B:).
- Type A:\INSTALL (or B:\INSTALL) at a DOS prompt and follow all on-screen instructions.
- You are prompted for a default directory, which is C:\SVMP64.

- You will then have the option of installing: the VREFRESH utility, DOS OM-1, or both.
- The DOS install will also optionally modify your CONFIG.SYS file to install the DOS OM-1 driver. For more information on OM-1, see section 5.7.

NOTE: Additional drivers may appear on this screen as more applications are supported. You may also download newly released drivers from our BBS (407-241-1601).

```
Select the Drivers & Utilities to install on drive C:

  SWAP64 Refresh Page Utility, Vrefresh  NO
  SWAP64 DOS OM/1 Drivers & Utilities  NO
  Install BOTH (Vrefresh and DOS/OM1)  NO

I - scroll up      PgUp - scroll page up      Enter - install selections
I - scroll down   PgDn - scroll page down   Space bar - toggle Yes/No
V - all YES      N - all NO                Esc - Exit Install
```

5.3 Video for Windows

Video for Windows adds basic video playback capability to Windows 3.x. This capability is already present in Windows 95. Consequently, the associated Video for Windows driver should NOT be installed for Windows 95.

1. From the Program Manager File Setup menu, choose Run.
2. In the Command Line box, type A:SETUP (or B:SETUP) and click OK, or press ENTER.
3. Follow the on-screen instructions to complete the installation of the Video for Windows driver.

5.4 Windows 3.x

The Voyager driver diskette contains drivers for both DOS and Windows. Make sure Windows is already installed on your system. The Windows install can also install drivers for DOS applications.

1. Insert the DOS and Windows 3.x driver diskette into your A: or B: drive.
2. Start Windows.
3. From the Program Manager screen, select **File**, then **Run**.
4. In the Command Line box, type **A:SETUP** or **B:SETUP**, then select OK. Setup will check for Video for Windows and warn you if it is

not installed. To install Video for Windows, see Section 5.3.

5. An introductory screen appears. Select Continue.
6. Next, you are presented with a Drivers/Utilities selection box. Make your selection (choose at least SVMP64 utilities and Windows 3.1/3.11) and select OK.
7. For each selection, you will have to select a destination directory or accept the default (e.g., C:\SVMP64 for SVMP64 utilities; C:\WINDOWS for Windows). The drivers selected will now be installed. Windows 3.1/3.11 driver installation is now complete.

To adjust your display resolution with Windows Setup:

Go to the Main Program Group and select the Windows Setup icon. Next, select Options, then Change System Settings. Click on the Down Arrow next to the Display bar. Here you may select an alternate display resolution (for SVMP64). Once you choose an alternate setting, you will be instructed to re-start Windows. Follow all on-screen instructions.



NOTE: Not all resolutions are supported using 1MB of RAM. If a 2MB mode is selected, the display will not be initialized.

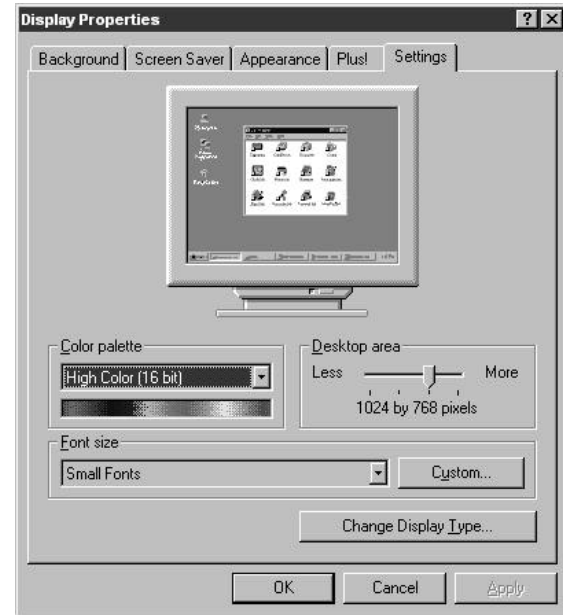
5.5 Windows 95

1. Start Windows 95 as you normally would after the Voyager Movie Player is physically installed.
2. Windows 95 then notifies you that "New Hardware is Found". Windows may ask you for your original Windows 95 diskettes.
3. Windows will identify the Voyager Movie Player as using the S3 Trio chipset.
4. After some files are copied, you will then be prompted to restart Windows.
5. After Windows 95 restarts, click the Start button, then Settings, then Control Panel.
6. Double-click the Display icon in the "Control Panel" folder.
7. Click the "Setting" tab, then the "Change Display Type" button.
8. Under "Adapter Type", click the "Change" button, then the "Have Disk" button.
9. Change directories to A:\ (or B:) and click OK.
10. Select "Boca Voyager Movie Player" from the list and click OK. If a message stating that one or more driver files is older than the files on the system, respond NO to overwriting the files. Click "Close".

11. Select the appropriate resolution using the “Desktop Area” and “Color Palette” options.
12. Click the “Apply” button and a “System Settings Change” box appears. Click YES to restart your computer.

To Adjust Display After Driver Installation:

Right-click on your desktop and select Properties from the pop-up to display “Display Properties”. Select Settings. Then Change Display Type to verify that your adapter type is the Boca Voyager Movie Player. You may also adjust your color palette and desktop area.



5.6 Windows NT (3.5+)

Do the following to get started when installing the Voyager Movie Player with the Windows NT operating system:

Select the Display icon from the Control Panel, then Settings, then Change Display Type and do the following:

1. Select "Other".
2. Insert the Windows 95/Windows NT diskette.
3. Type A:\WINNTS (or B:\ WINNTS) for Windows NT Server, or A:\WINNTW (or B:\WINNTW) for Windows NT Workstation.

The system then copies some files and will reboot when complete.

If you require additional assistance, consult your Windows NT documentation.

5.7 DOS OM-1

The DOS OM-1 driver is installed when you install the Voyager Movie Player utilities (see pages 24-25). It loads in your CONFIG.SYS file and is required for playing Real Magic® type games.

OM-1 is an Application Programming Interface (API) used to interface an MPEG decode/display board to interactive applications such as games running under MS-DOS. It represents the efforts of various manufacturers and software developers to meet the need for a widely available MPEG API. For more information, visit the Open MPEG Consortium web site at:
<http://www.om-1.org>.

5.8 Vrefresh Utility

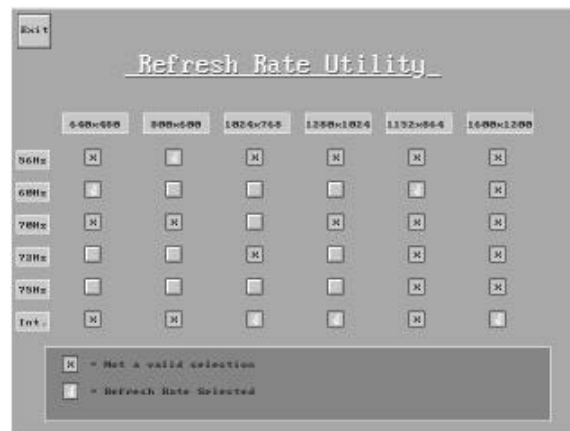
This is a DOS-based utility which allows you to change the refresh rate of the display. Vrefresh is installed only when you select "SVMP64 Utilities" from the install or setup program on the DOS & Windows 3.x diskette.

Using Vrefresh with a Mouse Driver

Type VREFRESH at the directory where the SVMP64 utilities were installed (usually C:\SVMP64). A menu is displayed when Vrefresh is loaded. The refresh rates are shown on the left side and the corresponding resolutions are displayed on top of the table. Click on the desired boxes. The "X" mark means that the selection is **NOT** valid. Selected refresh rates are defined by the check marks. Click on the Exit button to set the new refresh rate. You will be asked if you wish to save the changes to your AUTOEXEC.BAT. Choose YES

if you want to use the new refresh rate every time you turn on your system.

*NOTE: The refresh rate set with Vrefresh has no effect when using Windows NT. **You can use Vrefresh in DOS, Windows, and Windows 95 environments.***



Using Vrefresh without a Mouse

You will need to use command-line parameters with the following options:

VREFRESH X Y

where X = 640, 800, 1024, 1280 and

Y = 0 (56Hz),

1 (60Hz),

2 (70Hz),

3 (72Hz),

4 (75Hz),

5 (interlaced).

Note that 1600 x 1200 and 1152 x 864 each have a single refresh rate so this utility is not needed.

6. Playing Movies

6.1 Windows Playback Applications

Several types of Windows 3.x and Windows 95 applications, including Microsoft Media Player, as well as games and other custom applications, can be used with Voyager Movie Player to play back MPEG files.

Using Movie Player with Windows and Media Player

The Movie Player device driver is accessed through the Media Player 2.0 Device menu. MPEG files can be played back from the following sources:

- Hard disk
- Network
- CD-ROM
- Video CDs

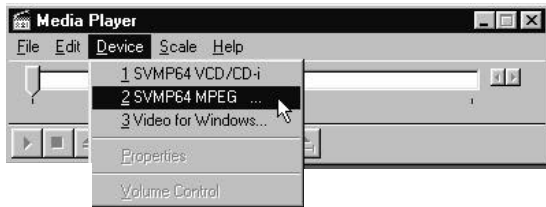
For a list of display/resolutions for optimal MPEG Playback, see Appendix G.

- MPEG files can also be played back from within OLE-compliant applications.

6.2 Playback of MPEG or Video CDs Through Windows and Media Player

Under Windows 3.1 and Windows 95, the MPEG audio parameters (compressed bit rate, sample rate, layer, mono/stereo, etc.) are embedded in the MPEG stream and the file is decoded to its full quality level as appropriate.

1. Start Media Player icon in the Accessories Program group. (If you are playing a movie on CD-ROM, make sure you have inserted the CD into your CD-ROM drive).



2. From the Device menu in Media Player, choose the MPEG option. No options are available for configuration through the Device menu. An Open dialog box appears for selecting a MPEG file for playback.

3. To select a file from the hard disk, choose the letter of your hard disk drive (usually C:) from the Drives box in the Open dialog box. To select a file from the CD-ROM, choose the letter of your CD-ROM drive (usually D:) from the Drives box in the Open dialog box.

NOTE: For Video CD or CDi titles, select VCD/CDi. Some titles will start playing automatically so you won't have to select a file name.

4. Select the .MPG or .DAT file to view and click OK. A black window appears.
5. If a green window appears, there is a hardware conflict. See Appendix A: Troubleshooting (p. 47).

6. From the Media Player control panel, choose the Play button. The video window changes from black to display the video. The volume can be adjusted from either the speaker or from the sound card (if present) mixer function. All standard Media Player buttons can be used to traverse the MPEG file. Fast Reverse and Fast Forward buttons will step through the file incrementally instead of playing every frame.

You can adjust the size of the image in discrete steps by pressing CTRL+1 for the default view, through CTRL+4 to display at four times the magnification of the default view. A second method is to scale in a linear method by grabbing a corner or edge and dragging the mouse. The current resolution you have the display set to can limit the acceptable size for viewing the video.

6.3 Embedding and Playback

You can copy and embed an MPEG video file into another Windows application using Object Linking and Embedding (OLE) 2.0. You can find more details on embedding media clips in your Microsoft Windows User's Guide or in the target application user's manual. Play the embedded video clip from the new application only if you have already exited Media Player.

To play back embedded video clips in client OLE applications, the original MPEG video file must be available and the Movie Player driver must be installed. Although you can embed video clips into many application files, this example describes how to embed a video clip into a PowerPoint file (PowerPoint supports OLE 2.0).

6.4 Preparing a File for Embedding

1. Double-click the Media Player icon.
2. From the Device menu in Media Player, choose MPEG Video. An Open dialog box appears.
3. Select the MPEG video file you want to embed.
4. Choose the OK button. A video window appears. (Optional) From the Edit menu in Media Player, choose Option, and select or de-select listed OLE options.
5. From the Edit menu in Media Player, choose Copy Object. The MPEG video clip is copied to the Windows Clipboard
6. From the File Menu in Media Player, choose Exit.

6.5 Object Link Embed and Title Playback

The following is an example using PowerPoint as a sample application. Any application which supports OLE 2.0 will operate in a similar fashion as described below.

1. Open your PowerPoint file.
2. From the Edit menu in PowerPoint, choose Paste Special. A Paste Special dialog box appears.
3. Select Media Clip Object from the object list.
4. Choose the Paste button. A video frame box appears in your PowerPoint presentation.
5. Resize and position the video frame box as necessary.
6. Double-click the video frame. The MPEG video clip plays back in your PowerPoint presentation.

6.6 Windows and DOS Games and Titles

Windows and DOS (OM-1) MPEG games and titles have their own application engines which control playback. These titles usually consist of mixed media sources including MPEG video, .WAV files, animation, etc. Most are installed with a setup program and Windows games are started with their own icon. The titles will use the Voyager Movie Player device driver that is currently installed.

The Voyager Movie Player is fully DOS OM1-compliant. Refer to the documentation which came with your DOS OM1 RealMagic® games for any special instructions.

Appendix A: Troubleshooting

This section lists common problems that may be encountered and their possible solutions.

General Troubleshooting

SYMPTOM

System does not power up and the screen is blank.

POSSIBLE SOLUTION

- Ensure the Voyager Movie Player is properly inserted in its slot.
- Ensure you do not have another video card in the system. If you do, you need to remove it from your system and try re-booting. Remember: the Voyager Movie Player must be the only video adapter.

- Verify that switch settings and/or jumpers are properly set on your motherboard. Refer to your system documentation.
- Confirm that your computer and monitor are plugged in. Check all power cables.

PROBLEM

The computer seems to boot, but there is no display.

POSSIBLE SOLUTION

- Check monitor signal cable and power cable connections and verify that the monitor is powered on.
- Adjust brightness and contrast controls correctly.

- Verify that your monitor cable is the proper type for the Voyager Movie Player.
- Ensure you do not have another video card in the system; if you do, remove it from your system and try re-booting. Remember: the Voyager Movie Player must be the only VGA video adapter.
- Verify motherboard switch and jumper settings.
- If your multi-frequency monitor has an Analog/Digital switch, make sure it is set to the Analog position.
- Examine your monitor display cable for broken or bent pins.

- Make sure your Voyager Movie Player is properly installed in a PCI slot.

PROBLEM

Your monitor's display appears somewhat distorted when running a graphics application

POSSIBLE SOLUTION

- Set the vertical hold properly on your monitor.
- Ensure that your current graphics application software has been properly installed.
- Ensure that your monitor is capable of displaying the graphics mode you are using. Refer to your monitor specifications and Appendix C.

- Ensure you are using the correct vertical refresh rate for your monitor (use Vrefresh).
- If your monitor has vertical/ horizontal position and size adjustment controls, try these controls to adjust the display.
- Use Windows Setup to select another display resolution for the Voyager Movie Player.

PROBLEM

You are unable to get the Voyager Movie Player to work in your computer, but have found that it works well in another.

POSSIBLE SOLUTION

- Refer to the preceding suggested remedies.

If the Voyager Movie Player functions properly in another system, it is likely the problem lies elsewhere.

- Ensure that your computer is compatible with the PCI 2.0 Local Bus specifications.
- Ensure that your computer is completely compatible with IBM standards. Some machines do not support IBM-standard video BIOS requirements.

PROBLEM

You are experiencing difficulty installing the Voyager Movie Player on a network.

POSSIBLE SOLUTION

- Generally speaking, when configuring a network system avoid the following areas the

Voyager Movie Player occupies: Memory addresses A000h -C7FFh, I/O addresses 03B0h - 03Dfh and in some instances 02E0h -02EFh. The Voyager Movie Player does not require an interrupt (IRQ).

Some network cards do not fully decode a 16-bit I/O address; these cards deal only with 10-bits of a 16-bit I/O address.

The Voyager Movie Player has a global set up register at an I/O base address of 46E8h. A network card that improperly decodes I/O addresses will see 46E8h in a 10-bit format as 02E8h.

- 02E8h may conflict with a network card in the 02E0h-02EFh range. The symptoms of this conflict manifest in the inability to access the Server. To alleviate this problem choose an alternative base I/O address for your network

card and regenerate the shell; refer to your network documentation or network software vendor if you require additional assistance in this area.

PROBLEM

You want to adjust your display resolution with Windows 3.x Setup.

REMEDY

Go to the Main Program Group and select the Windows Setup icon. Next, select Options, then Change System Settings. Click on the Down Arrow next to the Display bar. Here you may select an alternate display resolution (for SVMP64). Once you choose an alternate setting, you will be instructed to re-start Windows. Follow all on-screen instructions.



MPEG-Related Problems

Hardware Capabilities

The following hardware features may affect playback.

1. The key color for the MPEG video data stream is usually set to magenta or black, depending on the MPEG file being played. Therefore, magenta or black becomes a transparent color through which the MPEG image can be seen, for example, when there is a magenta wallpaper or desktop background.
2. At higher resolutions and color depths, the available video memory may not be adequate for both MPEG playback and extensive windowing.

SOLUTION: Select a lower resolution or color depth.

3. On systems limited to 1MB video memory, the driver may cause, at some resolutions and refresh rates, vertical banding and unclear text. SOLUTION: Use a lower resolution and refresh setting, e.g., 640x480, 256 color at 60Hz refresh.
4. When Media Player MPEG playback is iconized within Windows 3.1, the right quarter of the image will not be visible.

General Software Limitations

1. Within Windows 3.1 multiple instances of the Voyager Movie Player drivers, including the MPEG driver, can be launched and played with the following limitations:

- The multimedia data stream allows only one active instance of a multimedia driver such as the MPEG driver.
- To play MPEG and AVI clips simultaneously, the MPEG file must be opened first. The AVI clip will then play using GDI.
- MPEG playback quality deteriorates in a simulated multi-tasking environment.

2. Within Windows 3.1 there is no volume control through Media Player. Use volume and mixer controls available with the sound card, or volume control on your speakers.

3. Windows 3.1 DOS Prompt limitations:

- System may appear to be very slow or to be hung when attempting to perform a task at the DOS prompt or DOS window while MPEG is playing. **SOLUTION:** Allow extra time for your DOS task to complete or close the MPEG window.
- Opening windowed DOS box can cause deterioration of the sound quality in MPEG playback of PAL Video CDs.

-
4. With the Windows 3.1 driver, some MPEG titles or files with a .MPG or .DAT extension may not play. Instead of playing, this message appears, "File may be corrupt or not in the correct format". Files encoded with unconstrained parameters, variable bit-rates, header information outside the MPEG1 specification, Green Book CD-i games or videos, encrypted files which do not conform to standard encryption algorithms, etc., are among the files which may not be supported.

Suggested Solutions for Some Common MPEG-Related Problems

1. GREEN VIDEO WINDOW: This occurs when an interrupt has not been allocated for the Movie Player. Edit your CMOS settings to assign an interrupt to INT A for the PCI slot in which the Movie Player is installed.
2. NOISY DISPLAY: If the display appears noisy when an MPEG video clip is running, the resolution may be set too high for the available video memory. Pick a lower color depth and resolution.
3. TEXT HARD TO READ: If text is hard to read, lower the resolution or add more frame buffer memory. Change to a

resolution where distortion will not occur. With 1MB memory, distortion does not occur at 640x480/256 colors. With 2Mb memory, distortion does not occur at 640x480/256 colors, 32K colors, or 64K colors, nor does it occur at 800x600/256 colors.

4. MPEG WORKED BEFORE RESOLUTION CHANGED: If the MPEG clip does not appear after a resolution change, check if the Window resolution selected is supported.
5. UNDETECTABLE PROBLEM: If an error message "undetectable problem" appears when starting Media Player, an existing open version of Media Player is active. Only

one multimedia data stream can be active at a time.

6. MPEG WORKED BEFORE A NEW TITLE WAS INSTALLED: Some multimedia titles and software packages may install some Video for Windows files on your system. If you experience unexpected problems with MPEG playback after installing a new application, re-install Video for Windows , then re-install the MPEG driver.
7. INSUFFICIENT MEMORY: If you receive an Insufficient Memory error while attempting to play an MPEG title or opening other applications while MPEG is running, try increasing the value of files= in the CONFIG.SYS file to 30 or more.

-
-
8. **TITLE DOESN'T FILL SCREEN:** Some MPEG titles are designed to play only in specific resolutions, such as 640x480. If a title does not appear correctly or fails to fill the entire screen at the resolution you have selected, try another resolution.
 3. Verify you are attempting to run MPEG at a resolution supporting MPEG playback on your hardware. Then close Media Player and exit Windows. In your Windows directory, delete the files: MPLAYER.INI, MSACM.INI and RFMK2V.INI. Re-start Windows and Media Player again.

HELPFUL HINTS

1. If you are playing a clip from a CD-ROM, do not eject the disk while the clip is still playing.
2. If your system continues to lock, or the MPEG driver no longer appears available, try the following:

Appendix B: Technical Specifications

Connector Information

The following table shows the pin-out assignments for the DB15 video cable connectors.

IMPORTANT:

The Voyager Movie Player uses the same 15-pin (DB15) cable available from monitor manufacturers to interface with the IBM PS/2 computers. Using an incorrect cable may result in damage to the monitor and/or adapter. Note: some monitor manufacturers use slightly different naming conventions for the signal while retaining the same pin functionality. Do not be concerned. All that is required is PS/2 functionality.

Signal	Pin
Red	1
Green	2
Blue	3
Not used	4
Ground	5
Red Return	6
Green Return	7
Blue Return	8
Not used	9
Ground	10
Not used	11
DDC Data	12
Horizontal Sync	13
Vertical Sync	14
DDC CLK	15

Pin-Out Assignments for the DB15 Video Cable Connector

Technical Specifications

- 1MB DRAM of on-board memory (upgradeable to 2MB)
- MPEG1 Audio/Video Decoder
- Stereo line-out audio jack
- Supports up to 24-bit per pixel color
- Compatible with VGA color and monochrome analog monitors, and multiple frequency monitors
- 15-pin analog connector
- Power: 1A @ 5V
- Dimensions: 8 7/8" x 3 7/8"

LPB Bus Connector Pin-Out VESA Feature Connector Pin-Out

See chart on next page.

LPB Name	VESA Name		VESA Name	LPB Name	
GND	GND	1	2	PD0	TLD0
GND	GND	3	4	PD1	TLD1
GND	GND	5	6	PD2	TLD2
VREQ#	EVIDEO	7	8	PD3	TLD3
N/U	ESYNC	9	10	PD4	TLD4
CREQ#	EVCLK	11	12	PD5	TLD5
N/U	N/U	13	14	PD6	TLD6
GND	GND	15	16	PD7	TLD7
GND	GND	17	18	PCLK	LCLK
GND	GND	19	20	BLANK#	N/U
GND	GND	21	22	HSYNC	N/U
N/U	N/U	23	24	VSYNC	N/U
N/U	N/U	25	26	GND	GND
GND	N/A	29	30	N/A	IICCLK
N/U	N/A	31	32	N/A	IICDAT
GOP1	N/A	33	34	N/A	GOP0

Appendix C: Video Modes

The Voyager Movie Player supports the graphic modes listed on the following page. (I) indicates that the display is interlaced (i.e., only every other line is repainted each refresh cycle). The refresh rate is the number of times per second the screen is repainted. Generally, the higher the refresh rate, the better the display.

Some monitors may not be able to support all the modes and refresh rates. If the screen does not display properly under Windows, or another application, your monitor may not support this refresh rate for the chosen resolution.

In this case, you must either lower the resolution to one that can be supported, or lower the refresh rate. Refer to your monitor owner's manual.

VESA Mode #	Screen Resolution	Colors	Refresh Rate (Hz) (Vertical)	Refresh Rate (KHz) (Horizontal)
10A	132 x 43 characters	16	70	31.5
109	132 x 25 characters	16	70	31.5
100	640 x 400	256	70	31.5
101	640 x 480	256	60	31.5
101	640 x 480	256	72	37.9
101	640 x 480	256	75	37.5
102	800 x 600	16	56	35.1
102	800 x 600	16	60	37.9
102	800 x 600	16	72	48.1
102	800 x 600	16	75	47.5
103	800 x 600	256	56	35.1
103	800 x 600	256	60	37.9
103	800 x 600	256	72	48.1
103	800 x 600	256	75	46.8
104	1024 x 768	16	43 (I)	35.5
104	1024 x 768	16	60	48.4
104	1024 x 768	16	70	56.5
104	1024 x 768	16	75	60.2
105	1024 x 768	256	43 (I)	35.5
105	1024 x 768	256	60	48.4

VESA Mode #	Screen Resolution	Colors	Refresh Rate (Hz) (Vertical)	Refresh Rate (KHz) (Horizontal)
105	1024 x 768	256	70	56.5
105	1024 x 768	256	75	60.2
106	1280 x 1024	16	45 (I)	47.7
107	1280 x 1024	256	45 (I)	47.7
107	1280 x 1024	256	60	63.7
107	1280 x 1024	256	72	77.7
107	1280 x 1024	256	75	79.5
110	640 x 480	32,768	60	31.5
110	640 x 480	32,768	72	37.5
110	640 x 480	32,768	75	37.5
111	640 x 480	65,536	60	31.5
111	640 x 480	65,536	72	37.5
111	640 x 480	65,536	75	37.5
112	640 x 480	16.7M	60	31.5
112	640 x 480	16.7M	72	37.9
112	640 x 480	16.7M	75	37.5
113	800 x 600	32,768	60	37.9
113	800 x 600	32,768	72	48.1
113	800 x 600	32,768	75	46.8
114	800 x 600	65,536	60	37.9
114	800 x 600	65,536	72	48.1

VESA Mode #	Screen Resolution	Colors	Refresh Rate (Hz) (Vertical)	Refresh Rate (KHz) (Horizontal)
114	800 x 600	65,536	75	46.8
115	800 x 600	16.7M	60	37.9
115	800 x 600	16.7M	72	48.1
115	800 x 600	16.7M	75	46.8
116	1024 x 768	32,768	43 (I)	35.0
116	1024 x 768	32,768	60	48.9
116	1024 x 768	32,768	70	56.5
116	1024 x 768	32,768	75	60.4
117	1024 x 768	65,536	43 (I)	35.0
117	1024 x 768	65,536	60	48.9
117	1024 x 768	65,536	70	56.5
117	1024 x 768	65,536	75	60.4
120	1600 x 1200	256	48.5 (I)	62.0
201	640 x 480	256	60	31.5
201	640 x 480	256	72	37.9
201	640 x 480	256	75	37.5
202	800 x 600	16	56	35.1
202	800 x 600	16	60	37.9
202	800 x 600	16	72	48.1
202	800 x 600	16	75	46.9

VESA Mode #	Screen Resolution	Colors	Refresh Rate (Hz) (Vertical)	Refresh Rate (KHz) (Horizontal)
203	800 x 600	256	56	35.1
203	800 x 600	256	60	37.9
203	800 x 600	256	72	48.1
203	800 x 600	256	75	46.8
204	1024 x 768	16	43 (I)	35.5
204	1024 x 768	16	60	48.4
204	1024 x 768	16	70	56.5
204	1024 x 768	16	75	60.3
205	1024 x 768	256	43 (I)	35.5
205	1024 x 768	256	60	48.4
205	1024 x 768	256	70	56.5
205	1024 x 768	256	75	60.2
207	1152 x 864	256	60	55.3
208	1280 x 1024	16	43 (I)	47.7
208	1280 x 1024	16	60	63.7
208	1280 x 1024	16	72	77.7
208	1280 x 1024	16	75	79.8

Appendix D: Upgrading Video Display RAM

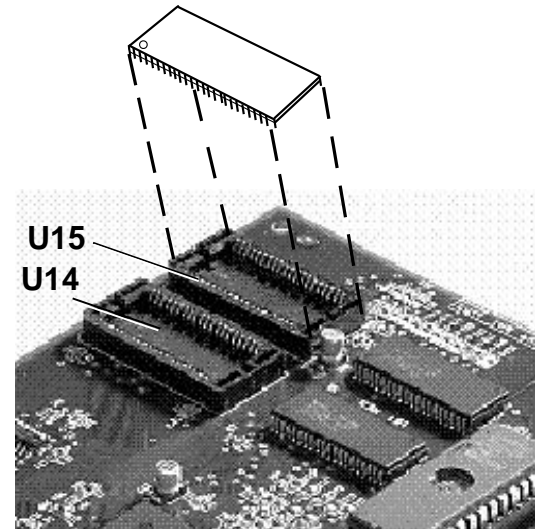
The Voyager Movie Player memory upgrade kit contains the following:

Two (2) 256K x16 Dual CAS DRAMs 60ns

To obtain a memory upgrade kit, contact our Technical Support department at (407)241-8088.

Install the DRAMs as follows:

- Insert the DRAMs into the sockets at locations U14 and U15 on the board.
- The DRAMs must be inserted with the beveled edge of the DRAM aligned with the beveled corner of the socket.



Recommended Vendor RAM Sources:

- NEC 424260-60R
- Micron MT4C16257DJ-60

Appendix E: Programming Considerations for MPEG Application Developers

When developing an MPEG application for use with the Voyager Movie Player, use the Motion Picture Expert Group Command set for the Media Control Interface (also referred to as the OM-1 MCI command set).

This command set controls playback of MPEG files using the Windows MCI interface and is the industry-standard application programming interface (API) for Windows MPEG titles. Applications compliant with the OM-1 API are assured of playback on the majority of Windows-based MPEG hardware/

software decoders. The following list describes further sources of information on the OM-1 MCI command set.

Reference the Microsoft Developers' Network CD under the "Specs and Strategy" section.

Download a copy of the specification from the CompuServe Windows Multimedia Forum (Go WinMM). The OM-1 MCI specification is named MCIMPG.ZIP and is located in the Video for Windows directory.

Contact the Open MPEG Consortium directly at (415) 903-8320 or FAX at (415) 967-0995, or the Open MPEG Consortium web site at: <http://www.om-1.org>.

Appendix F: Supported Graphics Resolutions

Windows 95 Graphics Resolution Supported (1MB)

RESOLUTION	Colors				
	16	256	32K	64K	16M
640x480	√	√	√	√	
800 x 600	√	√	√		
1024x768		√			
1280x1024	√				

Windows 95 Graphics Resolution Supported (2MB)

RESOLUTION	Colors				
	16	256	32K	64K	16M
640x480	√	√	√	√	√
800 x 600	√	√	√		√
1024x768		√	√		
1152x864		√			
1280x1024	√	√			
1600x1200		√			

Windows 3.x Graphics Resolution Supported (1MB)

RESOLUTION	Colors			
	16	256	32/64K	16M
640x480		√	√	
800 x 600		√	√	
1024x768		√		
1152x864		√		

Windows 3.x Graphics Resolution Supported (2MB)

RESOLUTION	Colors			
	16	256	32/64K	16M
640x480		√	√	√
800 x 600		√	√	√
1024x768		√	√	
1152x864		√		
1280x1024		√		
1600x1200		√		

Appendix G: Optimal MPEG Display/Resolution

For best results, MPEG movies should be played at the following resolutions and color depths:

Windows 95@ 1MB:

- 640x480/256 colors

Windows 95@ 2MB:

- 640x480/256 colors
- 800x600/256 colors
- 800x600/32K colors

Windows 3.x@ 1MB

- 640x480/256 colors

- 800x600/256 colors

Windows 3.x@ 2MB

- 640x480/256 colors
- 800x600/256 colors (small font)
- 1024x768/256 colors

Appendix H: Playing Digital Video CDs

Windows 95 uses "CDFS", a new 32-bit device driver which replaces "MSCDEX", the older 16-bit CD-ROM device driver. CDFS does not support one of the CD-i formats called "Digital Video".

Consequently, these movie formats cannot be played under Windows 95. To be able to play Digital Video movies, you need to manually replace the CDFS device driver with MSCDEX.

1. In Windows full-screen DOS, install the CD-ROM driver to your CONFIG.SYS and MSCDEX.EXE to your AUTOEXEC.BAT as if you were using Windows 3.1.
2. In the Windows 95 **Control Panel/System/Performance/File System/Troubleshooting**:
 - Disable "Protect-mode Hard Disk Interrupt Handling"
 - Disable all 32-bit protect-mode disk drivers
3. In the Windows 95 **Control Panel/System/Device Manager**, remove the CD driver under "Computer/CD Drives".
4. Click OK to Exit and Reboot.
5. Verify in Windows 95 **Control Panel/System/Device Manager** that the CD driver is not listed.
6. Play back a file, MPEG, Video CD, or CD-i Digital Video using Media Player, for example.

Appendix I: FCC Compliance

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 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.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Shielded cables are required between the computer and the monitor with the shield properly grounded. 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 or television reception. 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 or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CHANGES OR MODIFICATIONS TO THIS EQUIPMENT NOT EXPRESSLY APPROVED BY THE MANUFACTURER COULD VOID YOUR AUTHORITY TO OPERATE THE EQUIPMENT.

Appendix J: Servicing Your Boca Product

If your Voyager Movie Player board requires service, first contact the authorized Voyager Movie Player dealer from whom you purchased the board. If the dealer is unable to assist you, and you must contact Boca Research, Inc., please follow the instructions below.

Our electronic BBS is available 24 hours a day at (407) 241-1601 and will support data transmission speeds up to 28.8Kbps with settings of N, 8, 1. If you have a modem, the BBS may be helpful (especially during off hours) if you have a question about product settings or compatibility, or if you wish to download driver software or utilities.

NOTE: CALLING TECHNICAL SUPPORT WITHOUT COMPLETE AND ACCURATE INFORMATION CONCERNING YOUR PROBLEM MAY BE BOTH TIME-CONSUMING AND FRUSTRATING FOR YOU.

1. When calling Boca Research Technical Support, have the following information available:
 - Exact board name/product code and board part number
 - Software/driver revision level
 - Computer manufacturer
 - Computer model
 - Peripherals in the system
 - Operating system and version
 - Contents of system's CONFIG.SYS

If you suspect a problem with a specific program or software package, make note of the name, version or release number, and manufacturer of the software.

2. Call Boca Research Technical Support Department between the hours of 8:00 a.m. and 6:30 p.m. Eastern time Monday through Friday at (407) 241-8088. A technical support specialist will be available to discuss the problem(s) you are experiencing.

If it is determined that factory service is required, you will be given a Return Merchandise Authorization (RMA) number. Please place this number on the outside of the package when you return the item(s) for service and reference it on any correspondence included in the package. Boca Research, Inc. will return any product which is not accompanied by an RMA number.

3. Refer to the Warranty Statement if the product is covered under the five-year Boca Research, Inc. Limited Warranty.
4. Certain parts will not be covered under the Boca Research, Inc. Limited Warranty. Dealer installed parts are warranted by the dealer. Parts which you have installed yourself are covered only by the supplier's warranties. In these cases, Boca Research, Inc. can identify which parts are defective, but will not replace such parts until specific written authorization is received from you. The cost of parts and labor involved in making such repairs will be billed to you C.O.D.
5. When sending a board to Boca Research, Inc. for repairs, please be sure to include the Voyager Movie Player board, your return street address (for UPS purposes), phone number, and the RMA number mentioned above.

Package the product securely in a container equivalent to the original packaging, and insure the package to protect against loss or damage during transit. Shipping charges must be prepaid; C.O.D. shipments will not be accepted. Please use the address below for all correspondence:

Boca Research, Inc.
RMA Department - RMA # _____
1601 Clint Moore Road
Boca Raton, FL 33487-2841

6. If the repairs performed on your board were covered by the warranty, Boca Research, Inc. will return it prepaid via UPS.
-

Appendix K: Warranty

Limited Warranty

Boca Research, Inc. (BRI) warrants to the original buyer of this BRI product that the hardware is free of defects in materials and workmanship for a period of five (5) years from the date of purchase from BRI or an authorized dealer ("the Warranty Period"). Should the product fail to be in working order at any time during the five-year period, BRI, will at its option, repair or replace this product as described below, provided that in BRI's sole determination the part or product has not been abused, misused, repaired, or modified.

All products will be serviced and returned via ground at no charge to customers DURING the first year of service.

All returns for limited warranty service require a Return Merchandise Authorization (RMA). All customers are required to demonstrate proof of purchase when requesting an RMA. The period of warranty commences on the date of purchase. A dated copy of the sales slip must be included with the returned merchandise.

Products which require Limited Warranty service during the warranty period should be delivered to BRI at the address in the Appendix (Servicing Your Boca Product) with proof of purchase, copy of canceled check (if any), and the Return Merchandise Authorization (RMA) number provided by BRI Technical Support. Refer to the Appendix in this manual. Replacement parts or complete products will be furnished on an exchange basis only. Replaced parts and/or products become the property of BRI.

If the returned product is sent by mail, the purchaser agrees to prepay shipping charges, insure the product or assume the risk of loss or damage which may occur in transit, and to use a shipping container equivalent to the original packaging. BRI does not make any warranties in respect to the product, either expressed or implied, including no implied warranties of merchantability or fitness for a particular purpose, except as expressly provided in this agreement. If any labor, repair, or parts replacement is required because of accident, negligence, misuse, theft, vandalism, fire, water or other peril; or because of conditions outside of specifications, including, but not limited to, electrical power, temperature, humidity or dust; or by moving, repair relocation, or alteration not

performed by BRI, or by any other cause other than normal use, the warranty and maintenance obligations provided herein shall not apply.

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Glossary

24-bit. The number of bits which represent each pixel, or point on the screen. An 8-bit per pixel card can generate 256 colors; 24 bits per pixel yields 16.8 million colors.

8514. An IBM color monitor capable of resolutions of 720x400 non-interlaced with a refresh rate of 70MHz; 640x480 non-interlaced at 60MHz; or 1024x768 interlaced at 43.58 MHz. All of these resolutions are in 256 colors.

Analog Monitor. A monitor which uses an analog signal. Analog monitors can display an infinite number of shades for each primary color.

Autoswitch. The ability of a display adapter to automatically determine the display standard required by your software and to take action accordingly.

BIOS. Basic Input Output System. Provides fundamental services required for the operation of a computer. Permanently present in the machine, these routines are generally stored in ROM (Read Only Memory). The system board contains a ROM BIOS to support all of its standard functions. The Voyager Movie Player also has a BIOS for display features.

Bit Block Transfer. A method of holding a block of graphics, such as Windows dialogue box, in memory so that it can be moved and redrawn quickly by memory-to-memory operations.

Bit Rate. The rate at which a storage medium produces a compressed bitstream to a decoder's input.

CDi (Compact Disc-interactive). A compact disk format that provides audio, digital data, still graphics, and motion video.

CD-ROM XA (Compact Disc-Read-Only Memory Extended Architecture). An extension of the CD-ROM standard described as a hybrid of CD-ROM and CD-i.

CSC. Color Space Conversion.

Color Monitor. Any CGA, EGA, VGA color, or multiple frequency monitor.

Constant bitrate. Operation in which the bitrate is constant from start to finish of a compressed bitstream.

Constant bitrate coded video. A compressed video bitstream with a constant average bitrate.

DCI. Display Control Interface. A standard to optimize video for Microsoft Windows.

Decoding. A process that converts an input coded bitstream into pictures or audio samples.

Digital Monitor. Monitor which receives discrete binary signals. Digital monitors do not have as wide a range of color choices as analog types; digital EGA monitors can display just 64 colors.

DRAM. Dynamic RAM. RAM is random access memory.

EGA. Enhanced Graphics Adapter. High resolution IBM graphics standard capable of displaying 640 x 350 pixels in 16 colors out of a palette of 64 colors.

EGA Monitor. Any monitor capable of displaying both EGA and CGA standard modes. This includes ECD and multiple frequency monitors.

Feature Connector. Used by graphics adapters to give compatibility with VGA text and graphics codes for use with multi-media applications.

Frame Buffer. A memory device that stores, pixel by pixel, the contents of an image.

Frame Rate. The speed at which video frames are scanned or displayed.

GUI. Graphical User Interface.

Flicker. The wavering or unsteady image on some monitors. A major cause can be a low refresh rate.

Hardware Graphics Cursor. Provides a faster method of displaying/moving a cursor (GUI arrow) on the screen. The video adapter's main chipset controls this function which resides in system memory, as opposed to slower handling by the application software.

HGC. Hercules Graphics Card. Compatible with MDA, but also capable of displaying 720 x 348 pixels in a 4-bank graphics mode.

Hi-res. Short for High Resolution, this term should be only applied to a minimum of 640 x 350 resolution and above.

Horizontal Scan Rate. The frequency in KHz (kilohertz) at which the monitor is scanned in a horizontal direction; high horizontal scan rates produce higher resolution. The EGA horizontal scan rate is 21.8 KHz, while the extended EGA horizontal scan rate is 30.1 KHz.

Interlaced. A method of scanning a screen which results in alternate lines being drawn with each full pass of the electron beam. The resulting display is less stable than a flicker-free non-interlaced display.

LPB. Local Peripheral Bus.

MPEG. (Motion Pictures Expert Group). A type of data compression storage and playback of video and audio data.

Multiple Frequency Monitor. Monitor capable of displaying video signals over a wide range of horizontal scan frequencies. This may include a horizontal capture range from 5.5KHz to 35KHz or wider. Examples of monitors in this class are the NEC MultiSync and the Sony Multiscan. The Multiscan has a wide horizontal scan capture range which enables it to display monochrome signals.

OM-1 (Open MPEG Consortium). Organization formed to promote the use of MPEG in the consumer marketplace by specifying a common MPEG Applications Programming Interface (API).

Palette. The range of colors from which you can select

the actual colors that the video adapter will display simultaneously.

Pixel. A single dot on the CRT display. This word is derived from the words 'picture' and 'element'.

RAMDAC. RAM Digital to Analog Converter.

Refresh Rate. Also called Vertical Scan Rate, the speed at which the screen is repainted. Typically, color displays must be refreshed at 60 times per second. Usually, the faster the refresh rate, the less flicker a monitor has (normally defined in Hz).

Register Level Compatibility. Complete compatibility to the hardware level.

RGB . Red/Green/Blue. Color display output signal comprised of separately controllable red, green, and blue signals. RGB monitors typically offer higher resolution.

Scan rate. The frequency in Hertz (Hz) at which the monitor is scanned horizontally. Generally, the higher the scan rate, the higher the resolution.

TSR. Terminate and Stay Resident. A program that remains in memory after it has been loaded.

TTL. Transistor-Transistor Logic; a fast, reasonable-cost type of integrated circuit used in some monitors.

TTL Monitor. Video and synchronization signals (all digital) are on separate lines and have TTL compatible voltage levels.

VESA. Video Electronics Standards Association.

VGA. (Video Graphics Array) Analog graphics standard introduced with the IBM PS/2 series. Backwards compatible with EGA at the BIOS level, but provides higher resolutions. Supports a

maximum resolution of 640 x 480 pixels in 16 colors out of a palette of 262,144 colors.

Variable Bitrate. Operation in which the bitrate varies with time during the decoding of a compressed bitstream.

White Book. A standard specification developed by Philips and JVC for storing MPEG standard video on CDs.

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