
IMPORTANT USER INFORMATION

for the *mach32*

MULTIMEDIA VIDEO ACCELERATION DRIVERS

ATI Multimedia Video Acceleration Drivers

Release 2.0

May 31, 1993

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1.0 OVERVIEW OF ISSUES AND LIMITATIONS

While a great deal of effort has gone into providing you with the best possible acceleration capability for Video for Windows clips, the enormous data requirements of video place limitations on the playback capabilities of most PC's. The following document highlights the outstanding issues and limitations of the Multimedia Video Acceleration drivers for the *mach32* products, and is intended as a supplement to the Multimedia Video Acceleration User's Guide:

- 1. Multimedia Video Acceleration is not supported under the following conditions (please see the MVA User's Guide for more information on supported modes):**
 - a) **When Crystal Fonts are turned on**
 - b) **When 8 bits per pixel color depth is selected with Palette Manager turned on**
 - c) **When using 24 bpp color mode**
 - d) **For the GRAPHICS ULTRA+
- modes other than 640x480 (8 & 16bpp) and 800x600
(8bpp palette manager off)**
 - e) **When playing back RLE video images captured at sizes larger than 160x120**
 - f) **When in 1280x1024 screen resolution**

- 2. The following conditions may cause substandard multimedia video playback performance:**
 - a) **CPU less than 486 (e.g. 286/386)**
 - b) **Dual monitor configurations**
 - c) **Having less than 8MB of system RAM**

- d) **Having more than 12MB of system RAM (on ISA systems)**
 - e) **Inferior disk speed (e.g. playback from CD-ROM)**
3. **The following is a listing of outstanding operating problems. Please refer to the "Advanced User Section" in this file for a more detailed description:**
- a) **Using "Smart Drive" can degrade performance**
 - b) **RLE files don't play with MCI "Don't Buffer Off-Screen" option turned on**
 - c) **Media Player is unable to draw the last frame**
 - d) **Window takes about 1 second to update when obscured and then uncovered**
 - e) **File marking is ignored by "Media Player"**
 - f) **Colors are corrupted in movie created by pasting together in VidEdit**
 - g) **VidEdit: "About" button for "Microsoft RLE" shows same box as "ATI RLE"**
 - h) **Color controls (via Color Controls dialog) do not work for 16 bit per pixel Video 1 clips.**
 - i) **Selecting audio only playback when using VidEdit still results in video being played back in addition to audio**

3.0 INCLUDED FILES

The following are the files which we have modified or supplied with the Multimedia Video Acceleration driver installation.

| | |
|---------------------|---|
| ativideo.drv | Main driver |
| ativideo.wri | File which you are reading. Addenda to manual |
| ativideo.hlp | Windows help file for ATIVideo |
| atirle.drv | ATI RLE video compression driver |
| ativdacc.drv | ATI video acceleration driver. This driver accelerates standard video compression drivers such as indeo.drv (Indeo(TM) video) and msvidc.drv (Video 1). |
| hangldi.avi | Sample Indeo(TM) video clip |
| vid_docs.wri | Complete user documentation for multimedia video acceleration |

The following files are from the standard Microsoft Video for Windows 1.0 distribution.

| | |
|--------------------|--|
| dispdib.dll | |
| mciavi.drv | Playback run-time for Video for Windows |
| mciole.dll | |
| mplayer.exe | Microsoft media player application program |
| mplayer.hlp | Help file for the media player application |
| mplayer.reg | |
| msvidc.drv | Microsoft Video 1 video compression driver |
| indeo.drv | Intel Indeo video compression driver |
| msvideo.dll | |

4.0 OPERATIONAL REQUIREMENTS AND OPTIMAL SETTINGS

ATI's Multimedia Video Acceleration (MVA) drivers require an ATI 68800 (*mach32*) based video controller (GRAPHICS ULTRA PRO, GRAPHICS ULTRA+ and various OEM *mach32* implementations). The GRAPHICS ULTRA PRO (or VRAM OEM *mach32*) is preferred and achieves better video playback

performance. The driver is designed to work with Windows 3.1. Windows must be in Enhanced mode for the MVA drivers to run.

A minimum of 1.0 MB of Video Memory is required for MVA operation.

Optimal Settings

| | 640x480 | 800x600 | 1024x768 | 1280x1024 |
|-------------------------------------|------------------------------------|------------------------------------|------------------------|------------------------|
| 4 bpp | Unaccelerated Playback | Unaccelerated Playback | Unaccelerated Playback | Unaccelerated Playback |
| 8 bpp Palette Mgr. On | Unaccelerated Playback | Unaccelerated Playback | Unaccelerated Playback | Unaccelerated Playback |
| 8 bpp * Palette Mgr. Off | GUPRO 1MB/2MB GU+ 1MB/2MB | GUPRO 1MB/2MB GU+ 1MB/2MB | GUPRO 1MB/2MB | Unaccelerated Playback |
| 16 bpp Recommended | GU+ 1MB/2MB | GUPRO 2MB | GUPRO 2MB | Unaccelerated Playback |
| 24 bpp | Unaccelerated Playback | Unaccelerated Playback | Unaccelerated Playback | Unaccelerated Playback |

GUPRO = GRAPHICS ULTRA PRO (or VRAM-based OEM *mach32* product)

GU+ = GRAPHICS ULTRA+ (or DRAM-based OEM *mach32* product)

* *Users may experience color degradation in Palette Manager Off mode. 16 bpp color mode is strongly recommended.*

For optimal performance of video clips, the following settings are suggested for the ATI FlexDesk parameters:

Resolution - 640 x 480
 Colors - 65,000 (16-bit)
 Desktop - No effect
 16 Bpp RGB Mode - 5/6/5
 256 Color Palette - OFF (if using 256 color mode)
 CRYSTAL Fonts - OFF

*** ADVANCED USER SECTIONS ***

The following sections provide more detailed information for the advanced user. Configuration information as well as additional detail on the above problems are provided.

5.0 CONFIGURATION INFORMATION

WIN.INI [Mach] Entries

Most of the switches are alterable via the Video Control Panel, and this is the preferred way to change them.

THE FOLLOWING IS FOR YOUR REFERENCE ONLY. RANDOM CHANGES TO THIS SECTION MAY CAUSE UNKNOWN RESULTS WHEN IN DOUBT... DON'T!

ColorWeight16 = 555 | 565 | 655 | 664 **Default 565**

Choose color weighting when PixelDepth=16 is active. The number is interpreted as the number of Red, Green and Blue bits. For instance, 565 allots 5 bits for Red, 6 bits for Green and 5 bits for Blue. 655 and 664 modes are only available on the ATI 68875 DAC. 565 is preferred for video.

CrystalFonts = on | off **Default off**

When set on, enables the CRYSTAL Font feature. When CRYSTAL Fonts is enabled, the palette is fixed in 8 bpp non- programmable mode. 5 gradients of red, blue and green (125 colors) are available in the palette. Also the usual 20 Windows system colors are supported, and 16 shades of gray (including black and white). The remainder of the palette is unused. Video playback will NOT be accelerated with CrystalFonts=on and PixelDepth=8.

DesktopSize = 640 | 800 | 1024 | 1280 **Default 640**

Choose size of Windows work area. The screen may be smaller than the work area (see ScreenSize setting), in which case the Virtual Desktop feature is activated. Use the mouse to pan the display over the desktop. 640 selects 640x480, 800 selects 800x600, 1024 selects 1024x768 and 1280 selects 1280x1024. All modes have 4:3 aspect (which results in square pixels), except 1280. (1280x1024 is a 5:4 pixel ratio. Square pixels 4:3 with 1280 would be 1280x960).

PaletteManager = on | off **Default on**

Enable palette management when PixelDepth=8. This allows applications to control the physical palette, and permits applications such as After Dark to do palette cycling animation. When the PaletteManager is off, the color mode will use a fixed 332 (3 bits Red, 3 bits Green, 2 bits Blue) palette. Video acceleration is disabled when PaletteManager=on and PixelDepth=8.

PixelDepth = 4 | 8 | 16 | 24 | 32 **Default 8**

Choose number of bits per pixel. 4 allows 16 colors, 8 allows 256 colors and 16 allows 32768 (in 555 mode) or 65536 colors. 24 and 32 both provide for 16.7 million colors. 24 gives a 3 byte per pixel format and saves memory over 32 which gives a 4 byte per pixel format. 24 works for both 640x480 and 800x600 modes, whereas 32 is only usable in 640x480 mode. The Control Panel will always select 24 bpp for 16.7 million color mode. Video acceleration is available only for 8 and 16 bits per pixel modes.

ScreenSize = 640 | 800 | 1024 | 1280 **Default DesktopSize**

Select the screen size (screen mode). Video acceleration is disabled for 1280.

VAD = on | off **Default off**

Forces Virtual Aperture when set to on. When set to off, Virtual Aperture is enabled automatically when the Physical Aperture is disabled (through INSTALL). VAD=off is preferred for video playback.

VGAShared = on | off **Default on**

Share the video board memory between VGA and Accelerator, or maintain separate memory spaces. When running with Virtual Aperture (Physical Aperture disabled, or VAD=on), VGAShared has no effect (it is forced on).

6.0 SAMPLE WINDOWS.INI/SYSTEM.INI

This section serves to document the various changes that are made to the SYSTEM.INI and WIN.INI files. For more information on the [*Mach*] settings, see the Configuration section.

SAMPLE WINDOWS\SYSTEM.INI.

```
[Drivers]
ATIVIDEO=ativideo.drv
VIDC.RT21=ativdacc.drv
VIDC.MSVC=ativdacc.drv
VIDC.ATI0=atirle.drv
VIDEO1=msvidc.drv
INDEO=indeo.drv
```

```
[Installable Compressors]
vidc.rle=atirle.drv
```

```
[ATI Interceptor]
MSVC=msvidc.drv
RLE=atirle.drv
RT21=indeo.drv
```

SAMPLE WINDOWS\WIN.INI.

```
[mach]
VGAShared=on
EngineBlt=on
ScanLine=on
CacheCharacters=on
DeviceBitmap=off
PaletteManager=off
ColourWeight16=565
DesktopSize=640
ScreenSize=640
PixelDepth=16
```

7.0 OPERATING PROBLEM DETAIL

ATI Multimedia Video Acceleration Driver Errors/Warnings:

ATI Video acceleration disabled!

Most problems will be referenced to a release.
EPR's are "Engineering Problem Reports".

Release 2.0 Monday, May 31, 1993

Open EPRs:

"SMART DRIVE" DEGRADES PERFORMANCE.

The Smart-Drive (smartdrv.exe or smartdrv.sys) disk accelerator software may slow down your video playback significantly. This is especially true when trying to play back video files (*.avi files) that are larger than the Smart Drive Disk Cache. In this particular scenario Smart Drive will end up with the start of the video in its cache, when playback is started. By the time the end of a large video file is reached during playback, Smart Drive will have flushed the beginning of this movie. So the second time the video is played, every single frame must be reloaded from disk. At the same time the memory occupied by Smart Drive can not be used for productive things like video processing.

RLE FILES DON'T PLAY WITH MCI "DON'T BUFFER OFF-SCREEN" OPTION.

If you open any RLE compressed video and configure media player to "not buffer off screen", the video will not be played although audio gets played. Microsoft handles RLE cases "internally". ATI video driver can not correct this situation. For now the "Don't Buffer off screen" option is NOT recommended.

MEDIA PLAYER IS UNABLE TO DRAW THE LAST FRAME.

Microsoft provides the Media Player application program to play back video files. The video usually stops at the last frame. If the playback window is resized or first obscured, then uncovered the visible frame will not be refreshed. This is because in a video file with 100 frames the frames are numbered from 0 to 99. Media Player thinks the frames are numbered 0 to 100, resulting in 101 frames. When positioned at the "last" frame (frame 101 !!) there is no data left to be supplied when a refresh is necessary.

WINDOW TAKES ABOUT 1 SECOND TO UPDATE WHEN OBSCURED AND THEN UNCOVERED.

In certain instances, the video window can take slightly longer than usual to update when another window is overlaid on top of it and then removed.

FILE MARKING IS IGNORED BY "MEDIA PLAYER".

When using the "mark in/mark out" feature of the media player, the resulting playback ignores these

settings.

COLORS ARE CORRUPTED IN MOVIE CREATED BY PASTING TOGETHER IN VIDEDIT.

Problems arise when pasting together two or more video clips using VidEdit when one of the clips is 8 bit palettized (i.e. RLE, Video 1 8 bits per pixel palettized). In these instances, the first movie will play properly, but the second and subsequent clips' palettes will not be recognized, thereby causing color distortion.

VIDEDIT: ABOUT BUTTON FOR "MICROSOFT RLE" SHOWS SAME BOX AS "ATI RLE".

After installing the MVA drivers, VidEdit shows both "Microsoft RLE" and "ATI RLE" as installed compressors (under the Video Compressions Options menu). Selecting either of these will, in fact, access the ATI RLE compressor. We are unable to remove the Microsoft RLE reference from VidEdit during our install due to licensing issues.

8.0 REPORTING PROBLEMS

When reporting problems with this driver, please reference the driver build number. When in doubt about the build number, call up the About box for the ATI Video Driver and read the driver version and build number. The format is: 2.0 (9319a).
2.0 is the version number, 9319a is the build number.

When calling our Customer Support, please ensure that you have all information which will allow Customer Support to assist you with your problem. This includes not only the build number, but also information found in the Customer Support section of your manual including, but not limited to:

Version of the Card: ISA, EISA, Micro Channel, or VESA Local Bus
BIOS Version of the Card: What is displayed on the screen at Power On time
Memory on the card: 1 or 2 Meg
Hardware <Install> config: Set Power Up configuration, Output of <C-INFO>
Amount of System Memory: 4/8/16Meg
Type of System: 286 / 386 / 486 ISA / EISA / VLB / MCA
Contents of Autoexec.bat and Config.sys
Exact Steps to recreate problem
Version of Microsoft Video for Windows
Versions of other Software or Hardware

The more Information provided, the easier it will be for us to recreate and resolve the problem.

9.0 History

Synopsis

This is the first release of the driver:

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10.0 ATI Address

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