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Intel740™ Graphics Accelerator Software

Specification Update

September 1998

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Contents

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Revision History

Date of Revision	Version	Description
September, 1998	1.0	Initial Release

Preface

This document is an update to the specifications contained in the *Intel740™ Graphics Accelerator Datasheet*, (Order Number 290618), as well as the *Intel740™ Graphics Accelerator Software Developer's Manual*, (Order Number 290617), and contains software issues affecting Windows* 98, Windows* 95 (OSR2.1), and Windows* NT 4.0 Production drivers and Video BIOS releases using the Intel740™ graphics accelerator. For the latest hardware and documentation related issues, refer to the *Intel740™ Graphics Accelerator P854 Hardware Specification Update*, (Order Number 290622).

Component Marking Information

Stepping	S-Spec	Top Marking	RAMDAC Freq.	Notes
P854 A-1	N/A	FW82740 Q622ES	203 MHz	Engineering Sample, FM Test
P854 A-2	N/A	FW82740S2292 Q631ES Q632ES	203 MHz	Engineering Sample
A-2	SL292	Intel740™ or Intel740 FW82740 Intel (M) © '97	203 MHz	Production Material

Component Identification via Programming Interface

The Intel740™ graphics accelerator stepping can be identified by the following register contents:

Intel740™ Chip Stepping	Vendor ID[1]	Device ID[2]	Revision Number[3]
P854 A-1	8086h	7800h	01h
P854 A-2	8086h	7800h	21h

NOTES:
1. The Vendor ID corresponds to bits 15-0 of the Vendor ID Register located at offset 00-01h in the PCI function 0 configuration space.
2. The Device ID corresponds to bits 15-0 of the Device ID Register located at offset 02-03h in the PCI function 0 configuration space.
3. The Revision Number correspond to bits 7-0 of the Revision ID Register located at offset 08h in the PCI function 0 configuration space.

Nomenclature

Errata are design defects or errors. Errata may cause the Intel740™ graphics accelerator behavior to deviate from published specifications. Hardware and software designed to be used with any given software release must assume that all errata documented for that release are present on all software identified by that release.

Specification Changes are modifications to the current published specifications. These modifications will be incorporated in future releases of the affected specifications.

Specification Clarifications describes a specification in greater detail or highlights complex design situations that may require implementation changes. These clarifications will be incorporated in future releases of the affected specifications.

Documentation Changes include typos, errors, or omissions from the current published specifications. These clarifications will be incorporated in future releases of the affected specifications.

Builds determine the current version number of the Intel740™ Graphics Accelerator Software Driver Release (SDR) kit.

S-Specs are temporary exceptions to the published specifications and apply only to the units assembled under that s-spec.

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Summary Table Of Changes

The following table indicates the issues for Software Errata which apply to all currently available software driver releases and planned releases. Intel intends to account for the outstanding issues through documentation or specification changes as noted. This table uses the following notations:

Codes Used in Summary Table

X:	Issue pertains to a particular software release and may pertain to releases previous to the indicated release.
Fix:	This erratum is intended to be fixed in a future release of the software.
Fixed:	This erratum is fixed in the current software release.
NoFix	There are no plans to fix this erratum in the future software release.
NDR:	Non Intel740™ Driver and/or BIOS Related

Driver Errata (Windows* 9x Release)

NO.	PV1.0	PV1.0a	PV1.5	Future Plans	Errata
1	x	x		Fix	Video for Windows* (VFW) support
2	x	x	Fixed	Fixed	TV-Out support
3	x	Fixed		Fixed	Application conflict in traditional chinese OS
4	x	Fixed		Fixed	Applications running in full screen exclusive mode
5	x	x	Fixed	Fixed	Application title screens shown in upper-left
6	x	x	Fixed	Fixed	Windows* 95 shutdown screen shows artifact
7	x	x	Fixed	Fixed	OS/2 boot fail with Intel740™ drivers
8	x	x	Fixed	Fixed	Surface Pitch incorrect for flipping surfaces in some modes
9	x	x	Fixed	Fixed	Cybergladiators characters not textured
10	x	x	Fixed	Fixed	Taskbar icon for minimized applications become corrupted
11	x	x	x	Fix	Incorrect error message when updating driver in Window 98
12	x	x	Fixed	Fixed	Adjusting gamma correction can result in black screen
13	x	x	Fixed	Fixed	On color tab of property sheet, some pixels are not erasing
14	x	x	Fixed	Fixed	Bob mode not disabled in UpdateOverlay
15	x	x	Fixed	Fixed	Corruption in application at bottom of screen
16			x	Fix	No persistence across boots
17			x	Fix	720x480 and 720x576 not supported in PAL

NO.	PV1.0	PV1.0a	PV1.5	Future Plans	Errata
18			x	Fix	TV-Out is too wide on some PAL monitors
19			x	Fix	Video overlay is off by a pixel
20			x	Fix	Distorted splash screen
21			x	Fix	Jamming
22			x	Fix	Scrambled screen
23			x	Fix	Copy protection returns incorrect result
24			x	Fix	Disabling copy protection returns error message
25			x	Fix	User must use mouse to adjust
26			x	Fix	Scrambled DOS full window in TV only configuration
27			x	Fix	WinBench 98 page faults
28	x	x	x	Fix	Banked mode support

Driver Errata (Windows* NT 4.0 Release)

NO.	PV1.0	PV1.5	Future Plans	Errata
1	x	Fixed	Fixed	OpenGL screen saver causes system failure
2	x	Fixed	Fixed	Booting in VGA mode causes blue screen
3	x	Fixed	Fixed	Multiprocessor support
4	x	x	Fix	TV-Out support
5	x	x	Fix	Video for Windows* (VFW) support
6	x	Fixed	Fixed	Overlay corruption on mode change to 1600x1200
7	x	Fixed	Fixed	Multiple mode tests in VGA mode
8	x	Fixed	Fixed	Mode test preview screen shows corruption
9	x	x	Fix	Cannot change modes if running SoftICE

Video BIOS Errata

NO.	212	220	Future Plans	Errata
1	x	Fixed	Fixed	Low resolution modes are being set to wrong refresh rate
2	x	Fixed	Fixed	Display Data Channel not detected on some monitors
3	x		Fix	Screen corruption in mode 6A (800x600x16 colors)
4	x	Fixed	Fixed	Application corrupt on title screen
5	x		Fix	Screen corruption with 640x400x16, 24 bpp
6	x	Fixed	Fixed	Red border around screen
7	x	x	Fix	Corrupt screen before Scandisk blue screen
8	x	x	Fix	Application flashes in two modes on 2MB card only

Specification Changes

NO.	Specification Changes
	There are no Intel740™ Graphics Accelerator Specification Changes

Specification Clarifications

NO.	Specification Clarifications
1	For optimal performance
2	TV-Out
3	Operating system support

Documentation Changes

NO.	Documentation Changes
	There are no Intel740™ Graphics Accelerator Documentation Changes.

ERRATA (Windows* 9x)

1.   Video for Windows* (VFW) support

Problem: VFW applications are not supported. This includes all video for Windows* (VFW) video capture, tv-in, intercast, and video conferencing type applications.

Implication: No support for VFW applications.

Status: See Summary Table Of Changes at the beginning of the document.

2.   TV-Out support

Problem: The Intel740™ graphics accelerator drivers do not support TV-Out. The TV-Out portion of the code has not been enabled in the drivers.

Implication: No support for TV-Out applications.

Status: See Summary Table Of Changes at the beginning of the document.

3.   Application conflict in traditional Chinese OS

Problem: Some localized versions of the operating system may generate null as a parameter, on behalf of an application, indicating to the Intel740™ drivers to do nothing. This may cause the operating system to generate a general page fault (GPF) error. This has been observed while running the "5000 years Chinese History" application on the traditional Chinese version of OSR2.1.

Specifically, when executing the setup program for the application, Windows* reports that the setup application has caused an error (GPF). When the detail button is selected to determine the cause of the error, Windows* indicates that the error is caused by the gfxdrv.dll driver. This is the Intel740™ graphics accelerator MiniDisplay driver. This error has not been detected when running the English version of OSR2.1.

Implication: Localized versions of the operating system that generate a null parameter on behalf of an application, may cause a GPF error. The system must be reset to continue normal operation.

Status: See Summary Table Of Changes at the beginning of the document.

4.   Applications running in full screen exclusive mode

Problem: When running any application in full screen exclusive mode, a general page fault error (GPF) may occur. This has been observed while running the Winbench 98 quality test with "All Tests" selected. The benchmark indicates that "WBB3DBR or 2DBV132 caused an invalid page fault error in module gxfdrv.drv. This is the Intel740™ graphics accelerator MiniDisplay driver.

Implication: A general page fault error may occur when running any application in full screen exclusive mode in conjunction with the Intel740™ graphics accelerator drivers. Depending on the application, the system may need to be reset. In the case of Winbench 98, operation will continue normally without the need to reset the system, however, the quality test results will be incorrect.

Status: See Summary Table Of Changes at the beginning of the document.

5.   Application screen shown in upper-left portion of display

Problem: When starting an application for the first time, it may come up in 320x400 window. It should be full screen, but it's windowed in the upper left of the screen since the desktop resolution is greater than 320x400.

Implication: Applications may show up windowed in the upper left of the screen instead of filling the whole screen. This may happen only with the title screen of the application.

Status: See Summary Table Of Changes at the beginning of the document.

6.   Windows* 95 shutdown screen shows artifact

Problem: After exiting a 3D application, and then shutting down the system, the Windows* 95 showdown screen may become blurry prior to the system shutting down. This only occurs when the desktop is set to 640x480x16bpp modes.

Implication: Windows* 95 exit splash screen may become blurry before the system shuts down.

Status: See Summary Table Of Changes at the beginning of the document.

7.   OS/2 boot fail with Intel740™ drivers

Problem: Intel740™ graphics accelerator driver will not load on a OS/2 system.

Implication: System may hang during driver load.

Status: See Summary Table Of Changes at the beginning of the document.

8.   Surface Pitch incorrect for flipping surfaces in some modes

Problem: In the following scenarios, the incorrect pitch is used for the rendering surfaces causing the rendered images to be improperly tiled and corrupted. Double/triple buffered rendering surfaces are created by allocating each surface separately and manually attaching the surfaces.

The incorrect pitch is assigned for the following modes or surface dimensions:

400x300x16
720x480x16
1152x864x16

Note: This does not occur if the application allocates all of the surfaces by setting the backbuffer count during the createsurface call. The surfaces are created and attached with the correct pitch. This is the most common method used applications today.

Implication: Visual anomaly. Images may not be rendered correctly- diagonal lines will appear on (and cover) the entire screen.

Status: See Summary Table Of Changes at the beginning of the document.

9.   Cybergladiators characters not textured on BX platforms

Problem: Cybergladiators, a Direct3D game, does not texture the characters properly; the characters are textured with vertical lines. This error could not be repeated on any LX systems.

Implication: Visual anomaly. Improper texturing -characters are textured with vertical lines.

Status: See Summary Table Of Changes at the beginning of the document.

10.   Taskbar icon for minimized applications become corrupted

Problem: The minimized icons (in the taskbar) for any application can become corrupted. If the user starts with a desktop setting of 800x600x16bpp with minimized icon(s) then switches mode to 800x600x256colors, the icon(s) may have different (incorrect) colors.

Implication: Visual anomaly. Minimized icons may become corrupted (incorrect colors) if user changes mode.

Status: See Summary Table Of Changes at the beginning of the document.

11.   Incorrect error message when updating driver in Windows* 98

Problem: When updating the Intel740^{TM} drivers in Windows* 98 through the recommended method, the user may get the message that they are currently using the latest driver. However, should not be the case since they are updating the driver, and the current driver should be the best, not the older version that is currently on their system.
Note: To avoid this error message, the user can run setup.exe that is included with the driver.

Implication: Users updating the driver using Microsoft's "recommended" method (instead of the Intel740^{TM} setup.exe program) will not see newer drivers as "updated" versions.

Status: See Summary Table Of Changes at the beginning of the document.

12.   Adjusting Gamma correction can result in black screen

Problem: In the display properties page, under the color tab, the user can turn the whole screen black by adjusting the gamma correction sliders (gamma, brightness, and contrast) all the way down.
Note: When the monitor goes black, the user could press "Alt-D" (change settings to default) or "ESC" key (exits display properties without saving), and return the monitor on to the previous setting.

Implication: It is possible for the user to turn the screen to black with the gamma correction adjustments. With the black screen, the user will not be able to see the screen, and therefore, can not correct the adjustments. If they hit 'enter' at this point, which will save the settings, the user will be stuck with a black screen.
Note: There is no easy way to recover from this if the user has applied the changes!

Status: See Summary Table Of Changes at the beginning of the document.

13.   On color tab of property sheet, some pixels are not erasing

Problem: In the display properties page, under the color tab, moving the brightness bar will leave a red pixel in the bottom left hand corner of the 'Gamma Ramp' graph. The pixel should be drawn to white, but it remains red.

Implication: Visual anomaly. Pixels are not erased on the 'Gamma Ramp' graph when user moves the brightness bar, that is, some of the red pixels should be changed to white.

Status: See Summary Table Of Changes at the beginning of the document.

14.   Bob mode not disabled in UpdateOverlay

Problem: Bob mode is not disabled in UpdateOverlay. This will cause applications (such as software DVD and hardware DVD) that utilize bob to function improperly.

Implication: Visual anomaly. Video will appear "jumpy" without proper bobbing.

Status: See Summary Table Of Changes at the beginning of the document.

15.   Corruption in application at bottom of screen

Problem: Intel740^{TM} driver will sometimes return engine NOT busy status when it was actually busy at the time.

The application was not calling driver's Lock32 before screen updates. The Lock32 ensures the engine is NOT busy, and this is the correct way for applications to behave. Application was relying on GetBltStatus before screen updates.

Implication: Visual anomaly. Corruption at bottom of screen- image flashes.

Status: See Summary Table Of Changes at the beginning of the document.

16.   No persistence across boots

Problem: When the system is reset, the TV-Out brightness, flicker filter, overscan, position, and NTSC/PAL sub modes (NTSC-J, PAL-60, PAL-N, PAL Nc, and PAL-M) will not maintain their pre-shutdown settings. In addition, when a mode change (any mode change) occurs, the TV-Out position and overscan settings will not maintain their pre-mode-change values. Note: the 1.5 drivers only support NTSC, PAL, and NTSC-J.

Implication: User will have to configure settings every time they boot up.

Status: See Summary Table Of Changes at the beginning of the document.

17.   720X480 and 720X576 not supported in PAL

Implication: These modes are popular SW DVD and HW DVD modes for those sw and hw DVD applications that have been written specifically for the Intel740™ graphics accelerator. PAL is popular in Europe, Australia, and China

Implication: Users will not be able to use 720x480 and 720X576 in PAL.

Status: See Summary Table Of Changes at the beginning of the document.

18.   TV-Out is too wide on some PAL monitors

Problem: When in full screen DOS text mode, several characters on either side of the tv monitor disappear from view. This can be seen when booting up the system or when in a full screen DOS text mode session. It does not appear when playing games. It occurs on the TV monitor (only) and does not occur on the display monitor.

Implication: User may not be able to see the entire video image. For example, in DOS, the prompt will be cut off. Note: both sides (left and right) will be cut, since most DOS text is usually only on the left side, it looks like only the left side is cut.

Status: See Summary Table Of Changes at the beginning of the document.

19.   Video overlay is off by a pixel

Problem: Video overlay is off by a pixel when TV-Out is enabled. There will be a magenta line (one pixel) at the bottom of the video overlay window.

Implication: Visual anomaly. Applications using video overlays, such as DVD (hardware or software) and video capture, will have a magenta line at the bottom of the overlay window.

Status: See Summary Table Of Changes at the beginning of the document.

20.   Distorted splash screen

Problem: Launching Windows* shows distorted splash screen for a small time (less than 1sec) on PAL TV: When booting up with the TV enabled and booting in PAL mode, the Windows* splash screen becomes distorted (appears diagonally on the screen for less than a second). This occurs about 75% of the time. Also, it occurs just before the end of the OS load cycle, so the Microsoft splash screen is normal for the majority of the boot. When TV-Out is enabled, a distorted splash screen appears for a short time on PAL TVs.

Implication: Visual anomaly. Distorted splash screen, corruption does not stay.

Status: See Summary Table Of Changes at the beginning of the document.

21.   Jamming

Problem: On any mode change, half the screen on TV and monitor may black out. Error happens very infrequently. Mode changes may occur from user changing the desktop mode, applications changing modes, or OS changing modes. Adjusting flicker filter will also cause jamming.

Implication: User can only seen half the screen when error occurs. User will need to reboot to recover from error.

Status: See Summary Table Of Changes at the beginning of the document.

22.   Scrambled screen

Problem: With TV-Out enabled, when the user sets the screen size greater than the video size, the TV screen will become scrambled.

Implication: Visual anomaly. User will not be able to use the TV if the screen size is greater than the video size, for it will be scrambled.

Status: See Summary Table Of Changes at the beginning of the document.

23.   Using Intel740™ graphics accelerator copy protection GetMovieMode returns incorrect result

Problem: The TV-Out driver function "GetMovieMode" returns the wrong value. It always returns "0" (zero), which means copy protection is not enabled, even if copy protection is enabled. This has not seem to be an issue on Zoran or C-Cube DVD players.

Implication: Copy protection will not work correctly for those applications written specifically for the Intel740™ graphics accelerator.

Status: See Summary Table Of Changes at the beginning of the document.

24.   Disabling Copy Protection returns error message

Problem: The function "Set TV-OutMode" when used to disable copy protection, copy protection is disabled, but it indicates with an error that the hardware does not support copy protection.

Implication: Copy protection will not work correctly. Not an issue on Zoran or C-Cube DVD players.

Status: See Summary Table Of Changes at the beginning of the document.

25.   User must use mouse to adjust

Problem: In display properties, under the TV Out tab (TV-Out config applet), the Position controls are not included in the tab order. The user must use the mouse to adjust the TV-Out position controls in the TV-Out properties page.

Status: See Summary Table Of Changes at the beginning of the document.

26.   Scrambled DOS full window in TV only configuration

Problem: This issue only occurs when you just have a tv monitor attached (no PC display monitor). If the user goes to a DOS box from Windows* and then goes to a full screen DOS window (by hitting ALT-enter or hitting the full screen icon provided on the tool bar), the screen will become completely scrambled. The corruption will disappear if window size is changed from full screen to windowed mode.

Implication: Visual anomaly. Corruption on the prompt in full screen

Status: See Summary Table Of Changes at the beginning of the document.

27.   WinBench98 hangs

Problem: When running WinBench98*, Business Graphics Winmark, a page fault may occur when the test is run multiple times. This has been observed on Windows* 98 during normal operation, and on Windows* 95 (OSR2.1), only when softice is running.

Implication: User may not be able to run WinBench98 due to page fault.

Status: See Summary Table Of Changes at the beginning of the document.

28.   Banked mode support

Problem: Not all banked modes are supported by the Intel740^{TM} graphics accelerator drivers/BIOS. If an old DOS application requires a banked mode that is not supported, an error may result. Most likely, the application will not run. Or the application will run regardless, then cause an error.

Implication: Applications that use banked modes may not work correctly.

Status: See Summary Table Of Changes at the beginning of the document.

ERRATA (Windows* NT 4.0)

1.   OpenGL screen saver causes system failure

Problem: The Intel740™ graphics accelerator display driver, in response to an OpenGL application request, generates a pointer to a flag that is used to indicate that the primary surface has pending OpenGL operations to perform. This pointer, when an OpenGL application is running, may be initialized incorrectly (points to the wrong address). This erratum has been seen to manifest itself in the following way: when using an OpenGL screen saver, while an OpenGL application is running in the background, the system may hang. Specifically, during the time the screen saver is active, if normal operation is requested by either moving the mouse or hitting a key on the keyboard, the system may hang. The frequency of system hangs is indeterminate, and depends on the specific OpenGL screen saver selected and the OpenGL application running in the background.

Implication: A system failure may occur if two or more OpenGL applications are running simultaneously, or a single OpenGL application is running in a window (windowed mode) and the window is moved across the screen. The system must be reset to continue normal operation.

Status: See Summary Table Of Changes at the beginning of the document.

2.   Booting Windows* NT 4.0 In VGA mode causes a blue screen

Problem: The Intel740™ graphics accelerator MiniPort driver is not initializing the pointer to shared memory correctly. Shared memory is used in the MiniPort environment to store global information (e.g. display mode information) for driver use. This issue will manifest itself in the following way: when loading the standard Windows* NT 4.0 VGA drivers after the Intel740™ drivers are already loaded, a blue screen may appear just prior to when the NT desktop would normally become visible. Along with the blue screen, is an error message stating the following: "IRQL_NOT_LESS_OR_EQUAL". The frequency of failure of this erratum is indeterminate.

Implication: A system hang may occur when loading the standard NT VGA drivers after the Intel740™ drivers. The system must be reset to continue operation.

Status: See Summary Table Of Changes at the beginning of the document.

3.   Multiprocessor support

Problem: The Intel740™ graphics accelerator drivers do not function properly in a multiprocessor environment. In systems with two or more processors, or a single processor environment that runs with a multiprocessor, Windows* NT 4.0 kernel, will not run correctly when used in conjunction with the Intel740™ drivers. Results will be unpredictable. Drivers will load, but system may become unresponsive to keyboard and mouse inputs, and eventually will hang.

Implication: No multiprocessor support in a Windows* NT 4.0 environment

Status: See Summary Table Of Changes at the beginning of the document.

4.   TV-Out support

Problem: The Intel740™ graphics accelerator drivers do not support TV-Out. The TV-Out portion of the code has not been enabled in the drivers.

Implication: No support for TV-Out applications.

Status: See Summary Table Of Changes at the beginning of the document.

5.   Video for Windows* (VFW) support

Problem: VFW applications are not supported. This includes all video for Windows* (VFW) video capture, tv-in, intercast, and video conferencing type applications.

Implication: No support for VFW applications.

Status: See Summary Table Of Changes at the beginning of the document.

6.   Overlay corruption on mode change to 1600x1200

Problem: On a mode change from a resolution setting of less than 1600x1200 to 1600x1200 when there is an overlay present, the overlay becomes corrupted after the mode change. Overlays are not supported in 1600x1200 modes.

Implication: Objects used as an overlay may become corrupted when changing mode to 1600x1200 mode.

Status: See Summary Table Of Changes at the beginning of the document.

7.   Testing modes multiple times in VGA mode

Problem: Testing modes multiple times may cause the system to crash and leave a blank screen. In the display properties page (settings tab), 'test' several display modes in a row and the test fails.

Implication: Multiple mode tests will crash the system. To recover, the user will have to reboot.

Status: See Summary Table Of Changes at the beginning of the document.

8.   Mode preview test screen shows corruption

Problem: Start in 1024x768x16 bpp mode. Do a 'test' in the settings page of the display properties. During the 5 second preview test mode screen, a line appears in the green area.

Implication: Corruption on preview screen when animated icons are running.

Status: See Summary Table Of Changes at the beginning of the document.

9.   Cannot change modes if running SoftICE

Problem: While SoftICE is running and the user tries to change resolutions, it will result in a kernel level error . This is a Blue Screen type error. This does not occur if SoftICE is not running.

Implication: User may not be able to change resolutions while running SoftICE without getting an error.

Status: See Summary Table Of Changes at the beginning of the document.

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ERRATA (Video BIOS)

1.   **Low resolution modes are being set to wrong refresh rate**

Problem: The Intel740™ graphics accelerator video BIOS is setting the following low resolution modes to 60Hz when they should be set to 70Hz:.

320x200x8(256 colors), 320x200x16(64K colors), 320x200x24(16M colors)

400x300x8(256 colors), 400x300x16(65K colors), 400x300x24(16M colors)

512x384xx(256 colors), 512x384x16(64K colors), 512x384x24(16M colors)

A call to function EnumDisplayModes() returns the correct setting (70Hz), however, the video BIOS is actually setting the modes to 60Hz. This function is used to determine which modes are supported.

Implication: The refresh rates for the above modes will be set to 60Hz, when 70Hz is requested.

Status: See Summary Table Of Changes at the beginning of the document.

2.   **Display Data Channel not detected on some monitors**

Problem: The video BIOS waits a determined amount of time when detecting whether a monitor supports DDC. This delay has been determined to be too great for some older monitors. In this case, some DDC capable display monitors will not be detected properly by the operating system. This is because DDC can not be detected. This has been observed on a limited number of older display monitors.

Implication: Since DDC is not detected, the monitor plug-n-play feature will not function properly, and the operating system will not be able to detect the monitor type. In this case, the user will have to manually set the monitor type through the Windows* properties.

Status: See Summary Table Of Changes at the beginning of the document.

3.   **Screen corruption in mode 6A (800x600x16 colors)**

Problem: When a DOS application sets the mode to 6A, the video BIOS does not clear the memory upon setting the mode. Screen corruption can be seen since the memory was not cleared- what will be displayed is whatever was last in video memory. Once the application updates the screen, the corruption will disappear.

Implication: Temporary, corruption may appear on the screen when a DOS application first executes.

Status: See Summary Table Of Changes at the beginning of the document.

4.   **DOS application corrupt on title screen**

Problem: Some DOS applications title screen may appear corrupted. This may appear upon returning to the title screen after playing the application.

Implication: Some DOS applications title screen may appear corrupted.

Status: See Summary Table Of Changes at the beginning of the document.

5.   Screen corruption with 640x400x16,24 bpp in DOS

Problem: Some DOS applications may have screen corruption if the resolution is set to 640x400x16bpp or 640x400x24 bpp.

Implication: Possible screen corruption if user executes DOS applications that are in 640x400x16bpp or 640x400x24bpp modes.

Status: See Summary Table Of Changes at the beginning of the document.

6.   Red border around screen

Problem: On some applications, a red border around the screen may appear. This has been seen on the game Heavy Gear.

Implication: Red border appears around screen on some applications.

Status: See Summary Table Of Changes at the beginning of the document.

7.   Corrupted Screen before ScanDisk Blue Screen

Problem: If the user has an improper shut-down, caused by either powering off your system while Windows* is running or by Windows* freezing up, Windows* brings up a ScanDisk Blue screen after the system is restarted. Before this blue screen, the screen is corrupted - vertical bars are shown on the screen.

Implication: Visual anomaly. Vertical lines can be seen before Scandisk executes after improper shutdown.

Status: See Summary Table Of Changes at the beginning of the document.

8.   Application flashes in two modes on 2MB card only

Problem: When running Hexen II at 400x300 or 512x384 with a 2Mb card, the screen flashes. All other modes work fine. All modes work with a 4Mb card.

Implication: Visual anomaly. With a 2MB card installed, the screen flashes.

Status: This issue is being investigated to see if it can occur on other applications. See Summary Table Of Changes at the beginning of the document.

Specification Changes

There are no known Intel740™ Graphics Accelerator Software specification changes at time of this document's release.

Specification Clarification

1.   **For optimal performance:**

Windows* NT 4.0 environment:

It is recommended that either a 4 Mbyte or an 8 Mbyte local memory configuration be used in a Windows* NT 4.0 environment.

Software DVD:

CPU: Pentium II 300MHz (or higher)
System Memory: 32 MB
Local Video Memory: 4MB
Generation 2 DVD-ROM w/DMA*

Note: Always refer to the user manual and/or readme files that are included with the application for system setup.

*Bus mastering DMA required

2.   **TV-Out**

For TV-Out erratum, refer to errata #16-27.

Mode X applications, which can change registers, or any other modes that can change timing registers may stop the system when TV-Out is enabled. This impacts DOS ModeX games and possibly DirectX ModeX games.

PC Monitor (VGA) display timings will change while TV-Out is on. User will see different position and size then they might expect.

3.   **Operating System support:**

The following operating systems are currently supported with the standard VGA drivers(only). If the Intel740^{TM} drivers are loaded onto on of the following legacy operating systems, the operating systems Standard VGA driver will be loaded.
    Windows* 3.1, 3.11
    Windows* NT 3.51
    OS/2

Note: When loading the Intel740™ drivers and OSR2.1 or OSR 2.5 for the first time, the software should be loaded in the following order:

   (1) Load OSR2.0 or OSR 2.5
   (2) Load The "USB Supplement" (brings it up to OSR2.1 level or OSR2.5)
   (3) Load The Intel740™ drivers.

   Note: If this is not done in this order, then the standard Microsoft VGA drivers will be loaded.

Document Changes

There are no known Intel740™ Graphics Accelerator Software Document Changes at time of this document's release.

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