Release Notes

DRIVER VERSION: 15.36.21.4222 & 15.36.21.64.4222

DATE: June 2, 2015

SUMMARY:

New driver released with support for the newly launched H-series, R-series, and S-series Intel 5th Generation Intel® Core processors with Intel® Iris™ Pro Graphics 6200. This driver also provides some new enhancements and critical fixes for issues seen in games and display support.

On the new socketed Desktop LGA product with Intel® Iris™ Pro Graphics 6200, expect to see up to 2X better graphics performance, up to 35% Faster Video Conversion, and up to 20% Compute Performance. *(Intel® Core™ i7-5775C with Intel® Iris® Pro graphics 6200 compared to 65W Intel® Core™ i7-4790S with Intel® HD graphics 4600, See benchmark configurations section in release notes for details)*

On the mobile Core i7 Processor with Intel® Iris™ Pro Graphics 6200, expect to see up to 20% better graphics performance, up to 35% Faster Video Conversion, and up to 20% Compute Performance. *(Intel® Core™ i7-5950HQ with Intel® Iris® Pro graphics 6200 compared to Intel® Core™ i7-4950HQ with Intel® Iris™ Pro graphics 5200, See benchmark configurations section in release notes for details)*

Intel's fastest and most responsive mobile processors have Intel® Iris™ Pro Graphics 6200.

See http://www.intel.com/content/www/us/en/processors/core/5th-gen-core-family-mobile-brief.html for more details about the 5th Generation Intel® Core family including the newly launched H-series, R-series, and S-series with Intel® Iris™ Pro Graphics 6200.

This document provides information about Intel's Graphics Driver for:

- 5th Generation Intel® Core Processors with Intel HD graphics, Intel Iris™ graphics, Intel Iris™ Pro graphics and select Pentium®/ Celeron® Processors with Intel® HD graphics for Microsoft Windows* 8.1, Microsoft Windows* 8 and Microsoft Windows* 7 operating systems.
- Intel® Core™ M with Intel HD graphics 5300 for Microsoft Windows* 8.1, Microsoft Windows* 8 and Microsoft Windows* 7 operating systems.
- 4th Generation Intel® Core™ Processors with Intel HD graphics, Intel Iris™ graphics and Intel Iris Pro graphics and select Pentium®/ Celeron® Processors with Intel® HD graphics for Microsoft Windows* 8.1, Microsoft Windows* 8 and Microsoft Windows* 7 operating systems.

NEW FEATURES:

New driver support for the newly launched H-series, R-series, and S-series 5th Generation Intel Core processors.

Display Scaling Option is Now "Sticky" User Preference

Scaling support in control panel has been changed to improve user experience. Previously, the set of scaling options available to the user was tied to the currently selected resolution and any change to the resolution caused the user

selected scaling option to be lost. In the new implementation, the user selected scaling option is orthogonal to the current resolution and expresses the user's preference/intent for scaling behavior, regardless of the current resolution. The driver will remember this scaling preference and apply it for future display mode sets performed either in the graphics control panel OR via OS control panel.

Forced Application Scaling

The control panel also offers a new "forced application scaling" option where the user selected scaling option above for desktop will also be applied for full screen applications (generally games or media players), overriding whatever scaling mode the application and/or DirectX runtime/Operating System specify. This is intended to allow users to force "Stretch Full Screen" or "Maintain Aspect Ratio" scaling to address problems reported by users with games running in "Centered" scaling mode - particularly DirectX10 and 11 games and/or on Windows 8/8.1. Centered mode gives a bad user experience when running games as significantly lower than native resolution (e.g. to improve frame rate) on displays with very high resolutions.

Intel has identified several root causes for this behavior:

a) Some games request "Unspecified" scaling to the DirectX runtime upon full screen mode set. On Windows 8 and 8.1, for touch enabled systems, Windows converts this to "centered" scaling in the mode set call into the display driver. Microsoft has acknowledged this issue (CSS case 115021712411905/MSBU bug 5500783); the forced scaling option provided in this driver is a workaround for this Win8/8.1 operating system issue.
b) Several games explicitly request "Centered" scaling. Intel has reached out to the game developers to educate them to request "Stretched" scaling instead and several games (such as Call of Duty: Advanced Warfare) have been patched to correct this behavior, but other applications may still have this issue.

In both cases, the new forced application scaling option provides a solution to allow the user to specify their preferred scaling mode.

This option is not enabled by default because it technically means that the graphics driver is not honoring operating system requests for mode sets and would cause WHCK test failures during driver certification. However, Intel strongly recommends users set this option when playing games at non-native resolutions, especially on Windows 8/8.1, especially for DirectX10/11 games.

Dedicated Memory Reporting

The graphics driver now reports some amount of fictitious "dedicated" graphics memory to the operating system (128MB by default) to work around applications issues in a number of games. These games incorrectly look for some amount of "dedicated" graphics memory because they weren't coded with the unified memory architecture for processor graphics.

The amount reported can be modified or disabled if desired by changing the following registry value:

HKEY_LOCAL_MACHINE\Software\Intel\GMM, create a REG_DWORD value named "DedicatedSegmentSize". The value is interpreted as number of MB to report (0-512MB). A value of 0 disables reporting the dummy memory segment. If the registry key/value is not found, the driver will report the default 128MB.

CONTENTS OF THE PACKAGE:

- Intel® Iris™, Iris™ Pro and HD Graphics Driver
- Intel® Display Audio Driver
- Intel® Media SDK Runtime
- Intel® OpenCL* Driver
- Intel® Graphics Control Panel

KEY ISSUES FIXED:

Screen corruption may be observed while playing Call of Duty: Black Ops 2* game	Windows* 8.1 - 64
Screen garbage may be observed while playing Jo's Dream Organic Coffee 2* game	Windows* 8.1 - 64
Display flickering may be observed while playing Wolfenstein: The New Order* game	Windows* 8.1 - 64
Frame stuttering may be observed while playing Dead Rising 3* game	Windows* 8.1 - 64
Unable to start Dragon Age: Inquisition* game on some systems	Windows* 8.1 - 64
Need for Speed Rivals game may hang during game play	Windows* 8.1 - 64
Game hang may be observed while playing Galactic Civilizations III* game	Windows* 8.1 - 64
The display may show black screen when changing gamma color settings in Intel Graphics control panel after exiting from Diablo 3* game play	Windows* 8.1 - 64
Video playback using Canon Cinema RAW* application does not work	Windows* 8.1 - 64
In different scenarios such as resuming system from sleep and plug-unplug cases, the display resolution may not be retained while in multi-display configuration	Windows* 8.1 - 64
While using HDMI based display monitors that do not support HDCP, lag may be observed during video playback	Windows* 8.1 - 64
Applying Single Display configuration on the 'Built-in Display' may not work while specific HDMI display panels are connected to the system	Windows* 8.1 - 64
Some Hot Key combinations do not work when assigned to open Intel® HD Graphics control Panel	Windows* 7 - 64
Hang may be observed during HDMI hotplug on H-Series 5th Generation Intel Core processors	Windows* 7 - 64
Flicker may occur when changing resolutions on systems that support 4K.	Windows* 8.1 - 64
Support for headless virtual displays equal to number of physical display adapters	Windows* 8.1 Windows* 8 Windows* 7
Support and compliance for HDCP 2.2 IIA Spec for Wireless Display.	Windows* 8.1 Windows* 8 Windows* 7
Vbios Blocking KVM with 4th Generation Intel Core Processor	Windows* 8.1 - 64
Dragon Age: Inquisition Game Does Not Start	Windows* 8.1 - 64
Hang on Galactic Civilizations III	Windows* 8.1 - 64
GTA V Graphics Corruption	Windows* 8.1 - 64
Far Cry 4 Shadow Corruptions	Windows* 8.1 - 64
Developer Issue: glGetProgramiv returns GL_INVALID_ENUM for GL_ACTIVE_UNIFORM_BLOCK_MAX_NAME_LENGTH	Windows* 8.1 - 64

SUPPORTED PRODUCTS:

SOFTWARE
This driver supports 64-bit and 32-bit variants of operating systems -
- Microsoft Windows* 8.1
- Microsoft Windows* 8
- Microsoft Windows* 7

HARDWARE
All platforms with the following configurations are supported:

Intel® Graphics[1]	DirectX*[2]	OpenGL*	OpenCL*	Intel® Quick Sync Video	Intel® Wireless Display	Intel® Insider™	InTru™ 3D	Intel® Clear Video HD Technology
5th Generation Intel® Core™ Processors with HD Graphics 5500	11.2	4.3	2.0	Yes	Yes[3,4]	Yes	Yes	Yes
5th Generation Intel® Core™ Processors with HD Graphics 5600	11.2	4.3	2.0	Yes	Yes[3,4]	Yes	Yes	Yes
5th Generation Intel® Core™ Processors with HD Graphics 6000	11.2	4.3	2.0	Yes	Yes[3,4]	Yes	Yes	Yes
5th Generation Intel® Core™ Processors with Iris™ Graphics 6100	11.2	4.3	2.0	Yes	Yes[3,4]	Yes	Yes	Yes
5th Generation Intel® Core™ Processors with Iris™ Pro Graphics 6200	11.2	4.3	2.0	Yes	Yes[3,4]	Yes	Yes	Yes
Intel® Core™ M with Intel® HD Graphics 5300	11.2	4.3	2.0	Yes	Yes[3,4]	Yes	Yes	Yes
4th Generation Intel® Core™ Processors with Intel® Iris™ Pro Graphics 5200	11.2	4.3	1.2	Yes	Yes[3,4]	Yes	Yes	Yes
4th Generation Intel® Core™ Processors with Intel® Iris™ Graphics 5100	11.2	4.3	1.2	Yes	Yes[3,4]	Yes	Yes	Yes
4th Generation Intel® Core™ Processors with Intel® HD Graphics 5000/4600/4400/4200	11.2	4.3	1.2	Yes	Yes[3,4]	Yes	Yes	Yes
Intel® Pentium® Processor 3805U/3825U	11.2	4.3	1.2	Yes	Yes[3,4]	Yes	Yes	No
Intel® Celeron® Processor 3755U/3205U/3765U/3215U	11.2	4.3	1.2	Yes	Yes[3,4]	Yes	Yes	No
Intel® Pentium® Processor 3558U/3560M/3561Y/G3220/G3220T/ G3240/G3240T/G3250/G3250T/G3258/ G3320TE/G3420/G3420T/G3430/ G3440/G3440T/G3450/ G3450T/ G3460 with Intel® HD Graphics	11.2	4.3	1.2	Yes	No	No	No	No
Intel® Pentium® Processor 3550M/3556U/ 3560Y with Intel® HD Graphics	11.2	4.3	1.2	No	No	No	No	No
Intel® Celeron® Processor 2957U/2961Y/ 2970M/2981U/G1820/G1820T/G1820TE/ G1830/ G1840/G1840T/G1850 with Intel® HD Graphics	11.2	4.3	1.2	Yes	No	No	No	No
Intel® Celeron® Processor 2000E/2002E/ 2950M/2955U/2980U with Intel® HD Graphics	11.2	4.3	1.2	No	No	No	No	No

Note:

1. If you are uncertain which Intel processor is in your computer, Intel recommends using the Intel Processor Identification Utility or Intel Driver Update Utility to identify your Intel processor.
2. In the Intel® Iris™ and HD Graphics Control Panel (under Options > Options menu > Information Center), the 'Installed DirectX* version' refers to the operating system's DirectX version.   The Information Center's 'Supported DirectX* Version' refers to the Intel Graphics Driver's supported DirectX version.   The DirectX 11.2 API is supported but some optional features may not be available. Applications using the DirectX 11.2 API should query for feature support before using specific hardware features.
3. The Intel® Wireless Display software application is available only for Microsoft Windows 7 and Windows 8 operating systems.
4. Intel Wireless Display native Miracast* support under Windows 8.1 is now supported through the operating system's Charms menu. For more information, see the Miracast FAQ.

KNOWN ISSUES:

- Display corruption may be observed while playing GRID Autosport* game
- Star Trek Online* game hangs during game play
- Arma 3 game stopped with "device removed"
- Runescape* game may crash during game play
- Display corruptions may be observed at the bottom of the screen in the options menu while playing the game Doom 3*
- Display flickering may be observed while adjusting brightness on the main menu of the Rage* game
- Two active taskbars may appear when DisplayPort monitor attached to the system is unplugged while in extended desktop display configuration
- OS does not properly enabling/disabling DPST if AC/DC switch occurs while system is in standby (win8/8.1). See http://support.microsoft.com/kb/3046889
- Arma 2 may have game error message at startup

More about 5th Generation Intel® Core™ processors with Intel Graphics

Manufacturing innovation and processor efficiency take huge leaps forward with 5th Gen Intel® Core™ processors - (codename Broadwell). Based on Intel's 14nm manufacturing process, 5th Gen Intel Core processors create the basis for a new generation of platforms capable of transforming the computing experience. U series processors deliver the performance needed to power an amazing experience on the latest capabilities like gesture, voice, and facial recognition. The newly launched H series, R series, and S series processors deliver the performance that enthusiasts, content creators, and gamers crave.

Intel® HD, Intel® Iris™, and Intel Iris Pro graphics deliver an eye-popping visual experience and take Intel® Built in Visuals to the next level. With 5th Gen Intel Core processors, you can watch, game, and create like never before.

- Videos come to life in Ultra HD 4k, so users can enjoy amazing and vibrant multimedia experiences on Ultra HD 4k displays. 5th Gen Intel Core processors include enhanced new codec decode support for VP8, VP9, and HEVC.
- Mainstream games and apps will run effortlessly better graphics performance than 4th Gen Intel Core processors and support for the latest graphics APIs (DX11.2, DX12 ready).
- Intel Quick Sync Video technology accelerates most video capabilities, allowing users to create and share in real-time and multi-task without interruption.
- 5th Gen Intel Core processors also support graphics programmability features like OpenCL 2.0 so programmers can easily take advantage of the graphics compute capabilities

See http://www.intel.com/content/www/us/en/processors/core/5th-gen-core-family-mobile-brief.html for more details about the 5th Generation Intel Core family including the newly launched H-series, R-series and S-series with Intel® Iris™ Pro Graphics 6200.

Benchmark Configurations:

- Desktop: 3DMark11* – Graphics score performance preset, HDxPRT* 2014 Convert Videos, SPECint_rate_base2006*
    - Intel® Core™ i7-4790S processor (up to 4.0GHz, 4C8T, 8M Cache), Intel Reference Board, Memory: 2x4GB DDR3-1600, Storage: 160GB Intel Series 320 SSD, Display Resolution:1920x1080, Intel HD Graphics 4600, Windows* 8.1
    - Intel® Core™ i7-5775C processor (up to 3.7GHz, 4C8T, 6M Cache), Intel Reference Board, Memory: 2x4GB DDR3-1600, Storage: 160GB Intel Series 320 SSD, Display Resolution:1920x1080, Intel Iris™ Pro Graphics 6200, Windows* 8.1
- Mobile: 3DMark11* – Graphics score performance preset, HDxPRT* 2014 Convert Videos, SYSmark* 2014 Overall
    - Intel® Core™ i7-4950HQ processor (up to 3.6GHz, 4C8T, 6M Cache), Intel Reference Board, Memory: 2x4GB DDR3-1600, Storage: 160GB Intel Series 320 SSD, Display Resolution:1920x1080, Intel Iris™ Pro Graphics 5200, Windows* 8.1
    - Intel® Core™ i7-5950HQ processor (up to 3.8GHz, 4C8T, 6M Cache), Intel Reference Board, Memory: 2x4GB DDR3-1600, Storage: 160GB Intel Series 320 SSD, Display Resolution:1920x1080, Intel Iris™ Pro Graphics 6200, Windows* 8.1

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.

For more information go to http://www.intel.com/performance

We continuously strive to improve the quality of our products to better serve our users and appreciate feedback on any issues you discover and suggestions for future driver releases.

*Other names and brands may be claimed as the property of others.