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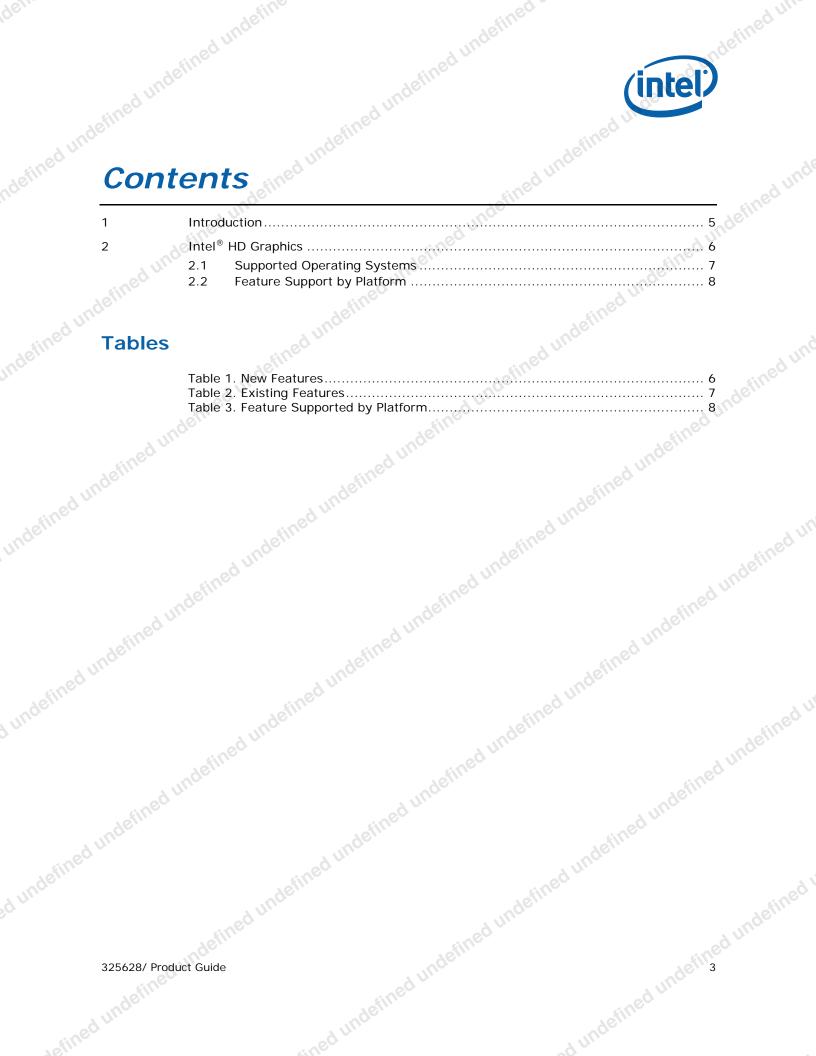
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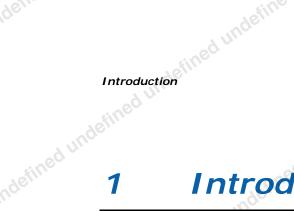
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Document	Revision	Description	Revision Date
Number 325628	001	Initial release.	June 2011
325628	002	Update for 3 rd Gen HD Graphics	November 2012
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Introduction

undefined unde Intel[®] HD Graphics is the next-generation graphics technology available on the nextgeneration Intel[®] micro-architecture codenamed Ivy Bridge. Based on the 22nm process technology with 3D Tri-Gate transistors, it provides improved graphics performance compared to the previous Intel[®] Celeron[®] processor-based platforms. It combines cutting-edge 3D graphics, improved HD visuals, advanced video capabilities a underned and enhanced display connectivity all built-in to the processor without the need of a discrete graphics card. It integrates high-performance graphics and media processing

Intel® HD Graphics



Intel[®] HD Graphics

Intel[®] HD Graphics is graphics built into the CPU, providing superior performance over previous generation Intel[®] HD Graphics while creating additional headroom for tomorrow's embedded usages. It includes features such as accelerated graphics processing, faster 3D rendering and complex shading for increased realism. It delivers a competitive advantage, ideal to suit the needs of a broad embedded market whether that is in the Retail, Digital Signage, Gaming, Industrial, Military, Aerospace, Government, Digital Security/Surveillance or Medical segments.

Table 1 describes the new features introduced in the next-generation graphics engine as well as those best suited for the embedded computing market. Table 2 describes the existing built-in visual features in the 2nd Generation Intel[®] Core™ processor. For tined undefined und a comprehensive list of supported features, refer to the Intel[®] Graphics Software for Intel[®] HD Graphics Family Product Requirements Document (PRD). The latest Intel[®] HD Graphics Driver packages are available for download at http://www.intel.com.

Table 1. New Features

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detin M	edia	ned
In pe	nproved MPEG2/AVC/VC1 decode rformance	HW Accelerated decode for improved media playback for MPEG2, AVC and VC1
30) Graphics	an ^{eo}
Di	rectX* 11	New API support and performance enhancements for improved 3D visuals
Di Di Di Di 3	penGL* 3.1	New API support and performance enhancements for improved 3D visuals
or	penCL 1.1	API support and performance enhancements for improved 3D visuals
Di	splay	stine
3	independent displays	3 non-symmetric independent and concurrent display support
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Table 2. Existing Features

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Intel® HD Gra Table 2. I	aphics Existing Features	ined une (intel)	76.
ndefine	Features	Description and Benefits	ed und
	Post-Processing	nder	1 efine
, und	ProcAmp	Adjust hue, brightness, saturation and contrast of video channels independently of other on screen content	0.
ineo -	Display	inde	
stined underti	Embedded DisplayPort* (eDP)	Dedicated Embedded DisplayPort (eDP) support on low-power CPU's and support for eDP on PCH for low-power and scalable CPU's offers design flexibility	
nde	12bpc Color Depth (DisplayPort* and HDMI)	Increased color depth for improved accuracy and vividness	stined un
	Power Management		
, un	Render Standby	Impressive power savings allows reduction of core graphics voltage down to 0V	
undefined	Extended Power Saving State (Power Reduction During Idle)	Power savings technology allowing powering down of High Definition Audio bus when not in use to help meet Energy Star requirements	

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Supported Operating Systems

The following operating systems are supported:

- Microsoft* Windows* XP
- Microsoft* Windows* 7 Starter/Home Basic/Home Premium/Professional/Ultimate
- Microsoft* Windows* Embedded Standard 7
- Microsoft* Windows* 8
- Microsoft* Windows* Embedded Standard 2009
- Microsoft* Windows* Embedded POSReady 2009
- Linux* 1,2

Notes:

1. Intel does not develop distribution specific drivers for Intel[®] HD Graphics. All Linux driver components are up-streamed to their respective repositories once a quarter. Information on these components is posted on www.intellinuxgraphics.com under the Downloads section. Distributions may pick up components as they choose.

A undefined undefined undefined 2. Linux driver features represent only a subset of those supported by the Intel[®] HD Graphics driver. For additional information, visit www.intellinuxgraphics.com.

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Feature Support by Platform 2.2

Table 3. Feature Supported by Platform s. undefined undefined und

2	Feature Supported by Platfo	rm 2010 Intel®	Intel [®] Processor	Intel [®] Processor	
idefined uno	ndefin	Core™ Processor Family with Intel [®] 5 Series Chipset	Graphics for Pentium and Celeron with Intel [®] 6 Series Chipset	Graphics for Pentium and Celeron with Intel [®] 7 Series Chipset	
	Media		, uno		
	Hardware Accelerated MPEG2 Decode	Y	definer	Y	
	Hardware Accelerated VC1 Decode	Y	YINC Y	Y	ge.
ned un	Hardware Accelerated AVC/H.264 Decode	under	Y	Y etimet	
ndefineo	Hardware Accelerated Decode (MPEG2, VC1, AVC/H.264) in All Rotated Modes	Nec A	Y	Ined Ury	
	Multi-Function Decode + De- blocking	N	Y UNC	Y	
	Dual Video Hardware Accelerated Decode	Y	undefilly	Y	
	Accelerated MPEG2 Encode	N	Ν	N	
A UT	Accelerated AVC/H.264 Encode	N	Ν	N	
	Advanced Deinterlacing	Y	Y	UIYOU	
	SD/HD Sharpness Control (Post Processing)	Y Y	Y	tineo y	
	Adaptive Contrast Enhancement (Post Processing)	Ν	y unc	Y	
	Skin Tone Enhancement (Post Processing)	N	underly	Y	undef
	Total Color Control (Post Processing)	N	Ŷ	5000	01
	12bpc Color Depth (DisplayPort* and HDMI)	ned upor	Y	Yden	
	Display/Audio			Ainer	
	DisplayPort 1.1a Audio Support (LPCM 2 channel & AC3)	Y	Y und	Y	
idefined u	HDMI v1.4 with Stereoscopic 3D	N	defnie	N	unde
Indefined	Dual Stream Audio	Y entired undefine	A UII Y	Y	'no.



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ndefined undefined	ndefined unac	2010 Intel [®] Core™ Processor Family with Intel [®] 5 Series Chipset	Graphics for Pentium and Celeron with Intel [®] 6 Series Chipset	Intel® Processor Graphics for Pentium and Celeron with Intel® 7 Series Chipset	ined und
	Embedded DisplayPort*	Y V	Y	Y	dein
ndefined undefined und	Dual LVDS (Integrated LVDS + SDVO LVDS)	Yinec	Y	y ned u	
ined the	EDID-less display support	y nu Y	Y	nCY .	
detri	Wireless Display ¹	Y	Ν	N N	
d un	SDVO-DVI Support	Y	Y	Y	
lefine .	SDVO-LVDS Support	Y	Y UNC	Y	Inc
no-	SDVO-HDMI Support	Ν	SINN	N	ndefined und
-	SDVO-TVOut Support	Y	IN NO	N	defin
-	SDVO-CRT Support	Y	Y	Y	
4 UNP	Support for Analog CRT	As III	Y	Y	
undefined undefined un	Support for External Digital Displays (DVI, HDMI, DP)	red un y	Y	ed une	
dunc	Three active displays	Ν	N	Y Y	
stinet	3D Graphics		uno-		2.
inde.	DirectX* 10.0	Y	ALL RO	Y	ed u
P	DirectX* 10.1	Ν	de' Y	Y	define
-	DirectX* 11.0	N	Y	Y	JUL
10	OpenGL* 2.1	Y	Y	Y	
ined t	OpenGL* 3.0	N	Y	Ne.	
defin	OpenGL* 3.1	N N	Ν	ed ^{UY} Y	
d une	OpenCL 1.1	Ν	N	Y	
Jefine-	Power Management		-d une		
undefined undefined un	Intel [®] Graphics Dynamic Frequency	Y	define	Y	undefined u
F	Render Standby	Y	Une Y	Y	unde
24	Intel [®] Display Refresh Rate Switching – For Seamless and Static Panel Displays	y indefine	Y	y adefined	
a undefined undefined u	Intel [®] Graphics Performance Modulation Technology	tined y	Y	aned whit	
stined ut.	Intel [®] Display Power Savings Technology (DPST)	Y	Y und	Y	
unde	Intel [®] Smart 2D Display Technology (S2DDT)	Y	delthec	Y	sined
	Intel [®] Rapid Memory Power	Y	d une Y	Y	Inde
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	Management Intel [®] Automatic Display	Y. eo	Y	Y
ed une	Brightness (ADB) Extended Power Saving State	UNUN N	Y	dytinec
undefined undefine	¹ Intel [®] Wireless Display is not Pla WiFi Technology and is only supp this feature.			

a undermed ¹Intel[®] Wireless Display is not Plan of Record for embedded long life support, requires Intel[®] My WiFi Technology and is only supported on Mobile products. Contact your local FAE for interest in

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