Motherboard Logo Program (MLP)

Intel® Desktop Board DG41KR

MLP Report

4/20/2011

Purpose:

This report describes the DG41KR Motherboard Logo Program testing run conducted by Intel Corporation.

Contents

Introduction

Terms and Definitions

Term	Definitions
WHQL	Windows* Hardware Qualification Lab
WLK	Windows Logo Kits
MLP	Motherboard Logo Program. For further information see: http://www.microsoft.com/whdc/hwtest/default.mspx
AP Machine	Audio Precision Machine
Winqual	Windows Qualification
MSFT Tested Product List	Tested Products List. You can view the Windows Marketplace for tested products list at: http://winqual.microsoft.com/HCL/ProductList.aspx?m=v&cid=105&g=s

Desktop Board Configuration

Desktop Board DG41KR Final Configuration Report: Completion of MLP

Data in this section reflects system configuration at time of MLP submission.

Board Information

Product Code[1]	BIOS String/Model	Technologies NOT Logo'd (yet)
DG41KR	KRG4110H.86A.0026.2009.0923.1817	N/A - all technologies logo'd
Processor		
Speed	3.00GHz	
Family	Intel® Core™2 Quad Q9650	
Bus Speed	1333 MHz	
Motherboard		
Board AA #	E62839	
Board FAB #	303	
* This report applies to the production FAB revision; Please consult your Intel Corporation representative to clarify the motherboard revision you intend to perform logo testing if not the same.		
System Memory		
Speed	Dual Channel, DDR3, 1066MHz	
Memory Type	DIMM	
Connector Type	DDR3, 240 Pin	
Power Management		
BIOS Default	S3	
Operating System Tested		
	Check Tested	**Comments**
Windows 7 and 64-bit	☑	Windows 7 Ultimate
Windows 7 and 32-bit	☑	Windows 7 Ultimate
Windows Vista and 64-bit	☑	Vista Ultimate with Service Pack 2
Windows Vista and 32-bit	☑	Vista Ultimate with Service Pack 2

[1] These are the product names to enter in the "Submission ID of previously logo'd qualified PC system or server" field during your "System Using a Previously Logo'd Motherboard" submission to Microsoft.

Onboard Integrated Devices and Driver for Vista 32-bit and 64-bit

Technology	OS	Version	Package version
Chipset Update Utility Intel® Chipset Software Utility	**Windows Vista**	9.1.1.1016	9.1.1.1016
	Windows Vista 64-bit	9.1.1.1016	9.1.1.1016
Graphics Intel® Graphics Media Accelerator	**Windows Vista**	8.15.10.1994	15.16.3.1994
	Windows Vista 64-bit	8.15.10.1994	15.16.3.1994
Audio Realtek	**Windows Vista**	6.0.1.5964	5964
	Windows Vista 64-bit	6.0.1.5964	5964
LAN Realtek	**Windows Vista**	6.227.0902.2009	6.227
	Windows Vista 64-bit	6.227.0902.2009	6.227

Onboard Integrated Devices and Driver for Windows 7 32-bit and 64-bit

Technology	OS	Version	Package version
Chipset Update Utility Intel® Chipset Software Utility	**Windows 7**	9.1.1.1016	9.1.1.1016
	Windows 7 64-bit	9.1.1.1016	9.1.1.1016
Graphics Intel® Graphics Media Accelerator	**Windows 7**	8.15.10.1994	15.16.3.1994
	Windows 7 64-bit	8.15.10.1994	15.16.3.64.1994
Audio Realtek	**Windows 7**	6.0.1.5964	5964
	Windows 7 64-bit	6.0.1.5964	5964
LAN Realtek	**Windows 7**	7.6.820.2009	7.006
	Windows 7 64-bit	7.6.820.2009	7.006

Windows Logo Kits Used (WLK)

Microsoft website: http://www.microsoft.com/whdc/DevTools/WDK/DTM.mspx

Please check regularly for test kit updates from Microsoft. Please ensure latest filters updated prior to WHQL run.

Operating Systems	Notes	WHQL Testkit
Windows 7 Windows 7 64-bit	WLK1.5 for Windows 7	WLK1.5 for Windows 7
Windows Vista Windows Vista 64-bit	WLK1.5 for Windows Vista SP2	WLK1.5 for Windows Vista SP2

Errata and Contingencies

Operating System	Failing Test	Expiry Date	ID Number	Type	Error Description
Windows 7 Windows 7 64-bit Windows Vista Windows Vista 64-bit	1) Class Driver AC3 Test - Win7 (System) 2) HDAudio Class Driver Test - Vista or Server08 (System)	06/01/2010	1256	Erratum	The HD Audio class driver hdaudio.sys exposes AC-3 data ranges on S/PDIF Kernel Streaming pins incorrectly. The compressed AC-3 transport is "stereo", "16-bit", and at the same sample rate as the uncompressed format. As such, AC-3 data ranges are expected to have MaximumChannels = 2, and MinimumBitDepth = MaximumBitDepth = 16. However, the HD Audio class driver sometimes incorrectly exposes a MaximumBitDepth of 24 or even 32.
Windows Vista Windows Vista 64-bit	HDAudio Class Driver Test - Vista or Server08 (System)	01/31/2011	142	Erratum	HDMI is required to support 44.1 kHz on Windows 7 The Windows Vista HD Audio class driver does not support 44.1 kHz sample rates. There is an errata to cover this violation of AUDIO-0023. It was mistakenly applied to third-party drivers. As of Windows 7, the Windows Vista HD Audio class driver supports 44.1 kHz sample rates on hardware that advertises support for it. AUDIO-0023 is applicable. This is a filter to allow vendors to ship with systems that violated AUDIO-0023 but were incorrectly filtered by the Vista filter. Hardware that does not support 44.1 needs to be updated to support 44.1, and advertise that support in a way that the Microsoft HD Audio class driver can pick up on. Third-party drivers need to relay this support to the OS correctly.
Windows 7 Windows 7 64-bit Windows Vista Windows Vista 64-bit	1) Class Driver Fidelity Test - Win7 (System, Manual) 2) HDAudio Class Driver Fidelity Test- Vista (System, Manual)	-	1238	Erratum	Preview Filter: Fidelity Render Power Transition Test Test now enforces SYSFUND-0050 - pop/click supporession is required to avoid noise during power state transitions. For further details visit: https://winqual.microsoft.com/ec/
Windows 7 Windows 7 64-bit Windows Vista Windows Vista 64-bit	1) Class Driver Fidelity Test - Win7 (System, Manual) 2) HDAudio Class Driver Fidelity Test- Vista (System, Manual)	07/31/2011	598	Erratum	The European Union requires the headphone output level to be <= 150 mVrms for headphone jacks. There's a note in WLP requirement AUDIO-0006 that states, in the presence of regional regulations, the output level requirement for headphones is dropped from >= 1000 mVrms to >= 120 mVrms. This provides freedom for manufacturers to meet both the EU <= 150 mVrms @ 32 Ohms and the WLP >= 120 mVrms @ 32 Ohms requirements. The Fidelity Test tests headphones at 300 Ohm load, though. Without knowledge of the output impedance at the jack, the test cannot extrapolate what the output level at 32 Ohms would have been from the output level at 300 Ohms. The test assumes that the output level at 32 Ohms will be *less* than the output level at 300 Ohms, though. So any measurement >= 120 mVrms at 300 Ohms "could be" a passing result, depending on the output impedance.

Windows 7 Windows 7 64-bit Windows Vista Windows Vista 64-bit	1) Class Driver Fidelity Test - Win7 (System, Manual) 2) HDAudio Class Driver Fidelity Test- Vista (System, Manual) 3) Fidelity Test (System, Manual)	08/09/2010	1801	Erratum	There is a test bug which causes the measurement of system noise during Render Power Transition Test to be about 3 dB worse than it should be. This filter forgives errors up to 6 dB.
Windows Vista Windows Vista 64-bit Windows 7 Windows 7 64-bit	PCI Hardware Compliance Test For Systems	06/01/2010	1241	Erratum	This happens because the PCI Compliance test assumes that if the Data Link Layer Link Active Reporting Capable bit in the Link Capabilities register for a given PCIe port is set then that indicates that the Data Link Layer Link Active bit will also be set. This is an incorrect assumption because the Data Link Link Layer Link Active bit can be reset when there is no device below the port. This assertion needs to be removed from the PCIHCT. The current architecture of the PCIHCT prevents it from knowing whether devices exist below a bridge/port.
Windows Vista Windows Vista 64-bit Windows 7 Windows 7 64-bit	1)UAA Test - Win7 (System) 2)UAA Test – Vista or Server08 (System)	08/09/2010	1198	Erratum	"High Definition Audio Device" devices need to comply with the Intel High Definition Audio spec, as well as revisions (known as Document Change Notifications, or DCNs.) One such DCN - in particular, DCN 34-A2 - clarified the behavior of "pin sense" verbs as applied to digital pins (S/PDIF, HDMI, and DisplayPort.) Prior to the DCN, the language of the spec was unclear and mistakenly implied that the "Impedance" bits could be used by digital pins. The DCN clarified this to say that Impedance bits are reserved for digital pins.
Windows Vista Windows Vista 64-bit Windows 7 Windows 7 64-bit	1)UAA Test - Win7 (System) 2)UAA Test – Vista or Server08 (System)	08/09/2010	1299	Erratum	The original HD Audio 1.0 specification contains a notion of "presence detect", using electrical impedance which was intended to apply only to analog pins. However, the language of the specification was such that it could be read to apply to digital pins as well - in particular, to S/PDIF pins. A DCN was released to extend the notion of presence detect to digital pins - in particular, to HDMI pins. This repurposed one of the impedance bits, which were thought to be unused in digital pins, to mean "ELD valid." The correct way for a S/PDIF pin to respond to a Pin Sense verb is to set the highest bit (Presence Detect) to 1 or 0 corresponding to whether a S/PDIF connection is active; set the ELD Valid bit to 0 (since there is no such thing as ELD for S/PDIF); and set the rest of the bits, which are reserved for digital pins, to 0. This errata filter is a preview filter to allow hardware manufacturers time to update any hardware that used the impedance bits on digital pins.
Windows Vista Windows Vista 64-bit Windows 7 Windows 7 64-bit	1)UAA Test - Win7 (System) 2)UAA Test – Vista or Server08 (System)	06/01/2010	1300	Erratum	HD Audio pin configuration document calls out setting Port Connectivity to No Connection as the way to turn a pin off in a particular system. UAA Test incorrectly tests such pins.

Windows Vista Windows Vista 64-bit Windows 7 Windows 7 64-bit	1)UAA Test - Win7 (System) 2)UAA Test – Vista or Server08 (System)	07/01/2011	1466	Erratum	Preview Filter: UAA Test - Intel Low Power DCN says "EPSS implies KeepAlive, but only after July 1st 2011"
Windows Vista Windows Vista 64-bit Windows 7 Windows 7 64-bit	1)UAA Test - Win7 (System) 2)UAA Test – Vista or Server08 (System)	06/01/2010	513	Erratum	UAA Test requires the Traffic Priority bit to be read/write - however there are two specs that apply, and they conflict. One says the bit must be read/write, the other says it must be read-only. Contact has been made with the author of both specs (Intel) but until this point is clarified we cannot fail submissions containing this test failure.
Windows 7 64-bit	Graphics HDMI System Test (Manual)	03/31/2010	2247	Conting ency	Intel HDMI solutions follow the Intel HD Audio HDMI DCNs - 34-A, 39-A, available at http://www.intel.com/standards/hdaudio/ This includes a notion of EDID-Like-Data which is programmed by the video driver into hardware, and read from hardware by the audio driver. ELD v2, which is required for logo, contains a Port_ID field which is expected to contain the AdapterLUID. This is exposed to third-party apps via the audio driver by means of the Kernel Streaming property KSPROPERTY_JACK_SINK_INFO Intel's graphics driver leaves the Port_ID field of the ELD unset - that is, all zeros. Intel will update their graphics driver to correctly populate the Port_ID.

Test Notes

Operating System	Test	Description
Windows 7 and Vista	BIOS download	Internal: http://bios.intel.com/downloads/ External: http://www.intel.com/ click on Support and Download
Windows 7 and Vista	BIOS setup	Please make sure the BIOS setting are as below, otherwise use default settings. System Date and Time: Current date and time Peripheral Configuration: Enable all onboard component Drive Configuration: Set to IDE Chipset Configuration: Enable HPET ACPI Suspend State: Set to <S3 State> Boot Device Priority: set <Hard Disk Driver> to first
Windows 7 and Vista filter update	WLK WHQL test	http://winqual.microsoft.com/member/SubmissionWizard/LegalExemptions/filterupdates.cab
Special H/W that use to PASS the test	None	None