



Motherboard Logo Program (MLP)

# Intel® Desktop Board DG43NB

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## MLP Report

9/25/2009

**Purpose:**

This report describes the DG43NB Motherboard Logo Program testing run conducted by Intel Corporation.

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# Contents

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|   |          |
|---|----------|
| <b>Introduction .....</b>   | <b>4</b> |
| Terms and Definitions.....  | 4        |
| <b>Desktop Board Configuration .....</b>                                    | <b>5</b> |
| Desktop Board DG43NB Final Configuration Report: Completion of MLP .....    | 5        |
| Board Information .....   | 5        |
| Product Code.....   | 5        |
| Processor .....   | 5        |
| Motherboard .....   | 5        |
| System Memory .....   | 5        |
| Power Management .....  | 5        |
| Operating System Tested .....   | 5        |
| Onboard Integrated Devices and Driver for Vista 32-bit and 64-bit .....     | 6        |
| Onboard Integrated Devices and Driver for Windows 7 32-bit and 64-bit ..... | 6        |
| Windows Logo Kits Used (WLK) .....  | 7        |
| Errata and Contingencies .....  | 8        |
| Test Notes .....  | 10       |

# Introduction

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## Terms and Definitions

| Term                     | Definitions   |
|--------------------------|---|
| WHQL                     | Windows* Hardware Qualification Lab   |
| WLK                      | Windows Logo Kits   |
| MLP                      | Motherboard Logo Program. For further information see:<br><a href="http://www.microsoft.com/whdc/hwtest/default.msp">http://www.microsoft.com/whdc/hwtest/default.msp</a>   |
| 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: <a href="http://winqual.microsoft.com/HCL/ProductList.aspx?m=v&amp;cid=105&amp;q=s">http://winqual.microsoft.com/HCL/ProductList.aspx?m=v&amp;cid=105&amp;q=s</a> |

# Desktop Board Configuration

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## Desktop Board DG43NB Final Configuration Report: Completion of MLP

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

### Board Information

|  |                                     |                                    |
|--|-------------------------------------|------------------------------------|
| Product Code <sup>1</sup>  | BIOS String/Model                   | Technologies NOT Logo'd (yet)      |
| DG43NB   | NBG4310H.86A.0086.2009.0618.1749    | N/A - all technologies logo'd      |
| <b>Processor</b>   |                                     |                                    |
| Speed  | 3.0GHz                              |                                    |
| Family   | Intel® Core™2 Quad                  |                                    |
| Bus Speed  | 1333 MHz                            |                                    |
| <b>Motherboard</b>   |                                     |                                    |
| Board AA #   | E34877                              |                                    |
| Board FAB #  | 402                                 |                                    |
| * 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. |                                     |                                    |
| <b>System Memory</b>   |                                     |                                    |
| Speed  | Dual Channel, DDR2, 800MHz          |                                    |
| Memory Type  | DIMM                                |                                    |
| Connector Type   | DDR2, 240 Pin                       |                                    |
| <b>Power Management</b>  |                                     |                                    |
| BIOS Default   | S3                                  |                                    |
| <b>Operating System Tested</b>   |                                     |                                    |
|  | <b>Check Tested</b>                 | <b>Comments</b>                    |
| Windows 7 and 64-bit   | <input checked="" type="checkbox"/> | Windows 7 Ultimate                 |
| Windows Vista and 64-bit   | <input checked="" type="checkbox"/> | Vista Ultimate with Service Pack 1 |
| Windows Vista Basic and 64-bit   | <input type="checkbox"/>            | Vista Basic with Service Pack 1    |

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<sup>1</sup> 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 |
|--|----------------------|--------------|-----------------|
| <b>Chipset Update Utility</b><br>Intel® Chipset Software Utility | Windows Vista        | 9.0.0.1009   | 9.0.0.1009      |
|  | Windows Vista 64-bit | 9.0.0.1009   | 9.0.0.1009      |
| <b>Graphics</b><br>Intel® Graphics Media Accelerator             | Windows Vista        | 7.15.10.1537 | 15.11.3.1537    |
|  | Windows Vista 64-bit | 7.15.10.1537 | 15.11.3.64.1537 |
| <b>Audio</b><br>Realtek  | Windows Vista        | 6.0.1.5605   | 5605            |
|  | Windows Vista 64-bit | 6.0.1.5605   | 5605            |
| <b>LAN</b><br>Intel® PRO Network Connections                     | Windows Vista        | 9.52.9.0     | 13.1.1          |
|  | Windows Vista 64-bit | 9.52.9.0     | 13.1.1          |
| <b>MEI</b><br>Intel® Management Engine Interface                 | Windows Vista        | 5.0.1.1055   | 5.0.0.1081      |
|  | Windows Vista 64-bit | 5.0.1.1055   | 5.0.0.1081      |

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

| Technology   | OS               | Version      | Package version |
|--|------------------|--------------|-----------------|
| <b>Chipset Update Utility</b><br>Intel® Chipset Software Utility | Windows 7        | 9.1.1.1015   | 9.1.1.1015      |
|  | Windows 7 64-bit | 9.1.1.1015   | 9.1.1.1015      |
| <b>Graphics</b><br>Intel® Graphics Media Accelerator             | Windows 7        | 8.15.10.1808 | 15.15.1.1808    |
|  | Windows 7 64-bit | 8.15.10.1808 | 15.15.1.1808    |
| <b>Audio</b><br>Realtek  | Windows 7        | 6.0.1.5892   | 5892            |
|  | Windows 7 64-bit | 6.0.1.5892   | 5892            |
| <b>LAN</b><br>Intel® PRO Network Connections                     | Windows 7        | 10.0.6.0     | 14.2            |
|  | Windows 7 64-bit | 10.0.6.0     | 14.2            |
| <b>MEI</b><br>Intel® Management Engine Interface                 | Windows 7        | 5.2.0.1008   | 5.2.0.1018      |
|  | Windows 7 64-bit | 5.2.0.1008   | 5.2.0.1018      |

## Windows Logo Kits Used (WLK)

Microsoft website: <http://www.microsoft.com/whdc/DevTools/WDK/DTM.mspix>

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

| Operating Systems                     | Notes  | WHQL Testkit                                 |
|---------------------------------------|--|--|
| Windows Vista<br>Windows Vista 64-bit | <a href="#">WLK1.4 for Windows Vista SP1</a> | <a href="#">WLK1.4 for Windows Vista SP1</a> |
| Windows 7<br>Windows 7 64-bit         | <a href="#">WLK1.4 for Windows 7</a>         | <a href="#">WLK1.4 for Windows 7</a>         |

## Errata and Contingencies

| Operating System              | Failing Test   | Expiry Date | ID Number | Type    | Error Description  |
|-------------------------------|--|-------------|-----------|---------|--|
| Windows 7<br>Windows 7 64-bit | Class Driver<br>AC3 Test - Win<br>7 (System)   | 06/01/2010  | 1572      | Erratum | <p>The HD Audio class driver hdaudio.sys exposes AC-3 data ranges on S/PDIF Kernel Streaming pins incorrectly.</p> <p>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.</p> <p>However, the HD Audio class driver sometimes incorrectly exposes a MaximumBitDepth of 24 or even 32.</p>   |
| Windows 7<br>Windows 7 64-bit | 1) Class Driver<br>Fidelity Test -<br>Win7 (System,<br>Manual)<br><br>2) Fidelity Test<br>- Win7 (System,<br>Manual) | 12/31/2009  | 1547      | Erratum | <p>Fidelity test now enforces SYSFUND-0050 - pop/click suppression is required to avoid noise during power state transitions.</p>  |
| Windows 7<br>Windows 7 64-bit | Class Driver<br>Fidelity Test -<br>Win7 (System,<br>Manual)  | 12/1/2009   | 1670      | Erratum | <p>EU restrictions place a cap on the output level of headphone jacks at 32 Ohm load: headphones are not allowed to have an electrical output of more than 150 mV at that load.</p> <p>We test headphone jacks at 300 Ohm load; the relationship between the output at 32 Ohms and the output at 320 Ohms depends on the output impedance of the headphone jack.</p> <p>In particular, if a headphone jack meets the EU requirement of <math>X \leq 150</math> mV at 32 Ohms, depending on the output impedance, it could output a huge amount of power at 300 Ohms, or very slightly over <math>X</math> mV. Since we require <math>X \geq 120</math> mV at 32 Ohms, absent knowledge of the output impedance we can only require <math>X \geq 120</math> mV at 300 Ohms.</p> <p>120 mV is -18.42 dBV. Any headphone output level at 32 Ohms that is less than -18.42 dBV is a legitimate failure, even if it is targeted at EU compliance. Any headphone output level greater than 1 Vrms (0.707 Vrms for mobile systems) is a legitimate pass, regardless of EU compliance.</p> <p>This errata covers output level failures for headphone jacks between -18.42 dBV and 1 Vrms/0 dBV (0.707 Vrms/-6.93 dBV for mobile systems) in accordance with note 6 of the WLP fidelity requirements.</p> |
| Windows 7<br>Windows 7 64-bit | Class Driver<br>Round Trip<br>Test - Win7<br>(System,<br>Manual)   | 11/1/2009   | 1709      | Erratum | <p>This test case is in preview mode for WLK 1.4. It will be enforced in November 2009.</p>  |
| Windows 7<br>Windows 7 64-bit | PCI Hardware<br>Compliance<br>Test For<br>Systems  | 12/31/2009  | 385       | Erratum | <p><u>The following PCI Compliance test failure is acceptable: Bit 15 (Bridge Configuration Retry Enable) in the Device Control register (offset 8h) in the PCI Express Capability table must be read-only and always return 0 as it is reserved for devices other than PCI Express to PCI/PCI-X Bridges. Assertion 13A41D3E-2576-41DC-A67C-525DA3637CEA This failure is acceptable because this is a PCIe 1.1 feature and the WLP requires compliance with only PCIe 1.0a.</u></p>  |



| Operating System              | Failing Test                             | Expiry Date | ID Number | Type    | Error Description  |
|-------------------------------|--|-------------|-----------|---------|--|
| Windows 7<br>Windows 7 64-bit | PCI Hardware Compliance Test For Systems | 12/31/2009  | 759       | Erratum | Assertion 5CAF4993-B8D1-4E4E-99EC-CC5895364E32 Bit range 11:10 (ASPM Support) in the Link Capabilities register (offset Ch) in the PCI Express Capability table is 0h. It cannot be in the set of values {0x0, 0x2}.   |
| Windows 7<br>Windows 7 64-bit | PCI Hardware Compliance Test For Systems | 06/01/2010  | 1543      | Erratum | Assertion 0E36472A-0EDB-4685-A67D-7AF1FFBFA81B Data Link Layer Link Active Reporting Capable bit is set but Data Link Layer Link Active is not.  |
| Windows 7<br>Windows 7 64-bit | UAA Test - Win7 (System)                 | 12/01/2009  | 1394      | 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<br>Windows 7 64-bit | UAA Test - Win7 (System)                 | 12/01/2009  | 1507      | Erratum | <p>Preview Filter - Reserved "Impedance" bits in Pin Sense response to digital pin widgets</p> <p>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.</p> <p>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."</p> <p>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.</p> <p>This errata filter is a preview filter to allow hardware manufacturers time to update any hardware that used the impedance bits on digital pins.</p> |
| Windows 7<br>Windows 7 64-bit | UAA Test - Win7 (System)                 | 07/01/2011  | 1793      | Erratum | <p>Preview Filter - Keepalive on low power digital outputs</p> <p>AUDIO-0062, effective June 1 2009, requires that any HD Audio codec that advertises EPSS support comply with the Intel HD Audio Low Power DCN.</p> <p>The Low Power DCN, in turn, says that support for EPSS is mandatory after July 1st 2011.</p>   |
| Windows 7<br>Windows 7 64-bit | UAA Test - Win7 (System)                 | 06/01/2010  | 1794      | Erratum | <p>UAA Test wrongly tests pin widgets that have their Configuration Default register's Port Connectivity field set to No Connection.</p> <p>The Microsoft HD Audio Pin Configuration guidelines specifically call out "set Port Connectivity to No Connection" as the official way to turn a pin off. UAA Test should ignore any such pins, as will the Microsoft HD Audio class driver.</p>   |

| Operating System              | Failing Test              | Expiry Date | ID Number | Type    | Error Description  |
|-------------------------------|---------------------------|-------------|-----------|---------|--|
| Windows 7<br>Windows 7 64-bit | Wave Test - Win7 (System) | 06/01/2010  | 1584      | Erratum | WaveTest false-fails DEVICE_STATE_DISABLED endpoints like CD In and Stereo Mix.<br><br>This is because it only considers DEVICE_STATE_ACTIVE endpoints when attempting to decide whether communications-class requirements should apply. |

## Test Notes

| Operating System                      | Test          | Description  |
|---------------------------------------|---------------|--|
| Windows 7 and Vista                   | BIOS download | Internal: <a href="http://bios.intel.com/downloads/">http://bios.intel.com/downloads/</a><br>External: <a href="http://www.intel.com/">http://www.intel.com/</a> click on Support and Download   |
| Windows 7 and Vista                   | BIOS setup    | Please make sure the BIOS settings are as below, otherwise use default settings.<br><br>System Date and Time: Current date and time<br>Peripheral Configuration: Enable all onboard component (Except CIR)<br>Drive Configuration: Set to IDE<br>Chipset Configuration: Enable HPET<br>ACPI Suspend State: Set to <S3 State><br>Boot Device Priority: set <Hard Disk Driver> to first<br><br>Note: Enhanced Consumer IR (CIR) component is not supported under Windows7. |
| Windows 7 and Vista filter update     | WLK WHQL test | <a href="http://winqual.microsoft.com/member/SubmissionWizard/LegalExemptions/filterupdates.cab">http://winqual.microsoft.com/member/SubmissionWizard/LegalExemptions/filterupdates.cab</a>  |
| Special H/W that use to PASS the test | None          | None   |