Thin Mini-ITX Form Factor

Intel® Desktop Board
DH61AG Media Series

Supports the 2nd generation Intel® Core™ processors in the LGA1155 package
The Intel® Desktop Board DH61AG is based on the Intel® H61 Express Chipset and supports 2nd generation Intel® Core™ processors, including the Intel® Core™ i5, Intel® Core™ i3, and other Intel® processors in the LGA1155 package. The 2nd generation Intel Core processors feature optimized Intel® Turbo Boost Technology® and enhanced Intel® Hyper-Threading Technology, which provide smarter performance and a seamless visual experience. The innovative low z-height Thin Mini-ITX form factor with external power supply support provides maximum design flexibility to support system designs ranging from slim high performance AIO systems to Tiny FF systems and Home Theatre PC systems.

Dual independent display for processors with Intel® HD Graphics
The Intel Desktop Board DH61AG is equipped with DVI-I and HDMI® display connectors for flexible dual independent displays. In addition, the DH61AG also provides second generation internal flat panel display support for LVDS as well as eDP. Maximum flexibility is provided for 18/24 bits/pixel, panel and inverter voltage selection, single cable connectivity (for panels with integrated inverter), brightness control, custom EDID payloads, and more. Powered by 2nd generation Intel Core processors with Intel® HD Graphics, the Intel Desktop Board DH61AG delivers a superb visual performance for sharper images, richer color, and lifelike audio and video as well as best-in-class media processing features. Enjoy a rich, immersive, liquid-smooth visual experience on your AIO system or monitor or HDTV.

Premium features
The Intel Desktop Board DH61AG supports low profile SO-DIMM and PCI Express® mini-card connectors and offers premium features such as dual-channel DDR3 1333 MHz memory with two SO-DIMMs (16 GB max), SuperSpeed USB 3.0, and fast charging hi-current USB 2.0 connectors. There is also support for one full size PCI Express® mini-card and one half size PCI Express® mini-card connectors. The mini-card connectors are ideal for support of Intel® mSATA modules as well as Intel® WiFi and third party TV Tuner modules. In addition, the DH61AG board supports Intel® High Definition Audio with 7.1 surround sound and multi-streaming capability, and an integrated Intel® PRO 10/100/1000 Network Connection in a low-power design.

The Intel Desktop Board DH61AG supports 1.5 V (standard voltage) as well as 1.35 V (low voltage) JEDEC-compliant SO-DIMM memory.

Two back panel SuperSpeed USB 3.0 ports address the needs of higher performance connections between the PC and increasingly sophisticated peripherals by offering a higher transferring rate of 5.0 Gb/s. There are also two USB 2.0 connectors which are designed to support Hi-Current and fast charging of external devices.
The boxed Intel Desktop Board DH61AG solution includes:

- Half-Height as well as Standard-Height I/O shields
- Right-angled SATA data and SATA power cables
- Board and back panel I/O layout stickers
- Quick reference guide
- Intel® Express Installer driver and software DVD

Software Included:

<table>
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<tr>
<th>Capability</th>
<th>Software Included</th>
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| Utilities  | • Intel® Core Utilities Bundle
|            | • Intel® Desktop Utilities |
| Productivity | • Laplink® PCmover Express* |
| Antivirus   | • ESET® Smart Security 4 (1-year license) |
Intel® Desktop Board DH61AG Media Series
Features and Benefits

1. Supports the 2nd generation Intel® Core™ processors, including the Intel® Core™ i5, Intel® Core™ i3, and other Intel® processors in the LGA1155 package up to 65W TDP for exceptional performance.¹

2. Intel® H61 Express Chipset PCH.

3. Dual-channel DDR3 with two connectors for 1333/1066 MHz memory support (16 GB² max).

4. PCI Express® 2.0 x4 connector.

5. One half size PCI Express® mini-card connector.

6. One full size PCI Express® mini-card connector.

7. Two SATA 3.0 Gb/s ports.

8. One eSATA 3.0 Gb/s port.

9. Two SuperSpeed USB 3.0 ports: 5.0 Gb/s signaling rate for high speed connections to peripherals.

10. Two Hi-Current/Fast Charging USB 2.0 ports.

11. Eight Internal USB 2.0 ports (5 via headers, 1 via HMC, 2 via FMC).

12. Integrated Intel® PRO 10/100/1000 Network Connection for high speed and low power consumption.

13. Ten-channel Intel® High Definition Audio¹ with multi-streaming capability.

14. DVI-I + HDMI*: Supports dual independent display and allows for the most flexible display output for Intel processors with Intel® HD Graphics.

15. Flexible eDP/LVDS flat panel display support.


¹Requires Intel® Motherboard Utility for managing system configuration.

²Based on system memory support requirements.
Intel® Desktop Board DH61AG Media Series
Technical Specifications

**PROCESSOR**
Processor Support
- Intel® Core™ i5, Intel® Core™ i3, and other Intel® processors in the LGA1155 package† with up to 65W TDP
- Supports Intel® 64 architecture

**CHIPSET**
Intel® H61 Express Chipset
- Intel® BD82H61 Platform Controller Hub (PCH)

**PERIPHERAL CONNECTIVITY**
- Two SATA 3.0 Gb/s ports with one SATA ports
- Two SuperSpeed USB 3.0 ports with 5.0 Gb/s link speed
- Eight internal USB 2.0 ports (5 via headers, 1 via HMC, 2 via FMC)

**SYSTEM BIOS**
- 32 MBit Flash EEPROM with Intel® Platform Innovation Framework for EFI Plug and Play
- Advanced configuration and power interface
- V30b, SMBIOS 2.5
- Intel® Express BIOS update support

**HARDWARE MANAGEMENT FEATURES**
- Processor fan speed control
- Front and rear system chassis fan speed control
- Voltage and temperature sensing
- Fan sensor inputs used to monitor fan activity
- ACPI-compliant power management support

**INTEL® PRO 10/100/1000 NETWORK CONNECTION**
- Low-power design

**EXPANSION CAPABILITIES**
- One PCI Express® 2.0 x4 connector

**AUDIO**
- 7.1 Intel® HD Audio via HDMI®
- 7.1+2 Intel® HD Audio via codec
- Digital/analog stereo line-out (back panel jack)
- In-chassis stereo speakers output (internal header)
- AV-compliant 7.1 surround (internal header)
- Secondary S/PDIF output (internal header)
- OMC digital microphone input (internal header)
- Analog line-in (back panel jack)
- Front panel HD Audio/AudioC97 (internal header)

**VIDEO**
- DVI-I + HDMI*: supports dual independent display
- Flexible eDP/LVDS for flat panel display support

**SYSTEM MEMORY**
Memory Capacity
- Two SO-DIMM connectors
- Maximum system memory up to 16 GB* using 8 GB* double-sided SO-DIMMs

Memory Types
- DDR3 1333/1066 SDRAM memory support
- Non-ECC Memory
- Dual- or single-channel operation support

Memory Voltage
- Support for 1.5 V and 1.35 V JEDEC-compliant SO-DIMM memory

**JUMPERS AND FRONT PANEL CONNECTORS**
Jumpers
- Jumper access for BIOS maintenance mode

Front Panel Connectors
- Reset, HD LED, Power LEDs, power on/off
- Front-panel mic/headphone header

Other Connectors
- Consumer IR receiver header
- HTPC header (for DVR usage models)

**MECHANICAL**
Board Style
- Thin Mini-ITX

Board Size
- 6.7 x 6.7 (172 cm x 172 cm), 20 mm height

Power Requirements
- External 19VDC power supply

**ENVIRONMENT**
Operating Temperature
- 0°C to +55°C

Storage Temperature
- -20°C to +70°C

**REGULATIONS AND SAFETY STANDARDS**
United States
- UL 60950-1

Canada
- CAN / CSA-C22.2 No. 60950-1

Europe (Low Voltage Directive 2006/95/EC)
- EN 60950-1

International
- IEC 60950-1

EMC Regulations (Class B)
United States
- FCC CFR Title 47, Chapter I, Part 15, Subparts A/B

This could result in a reduction of as much as 1 GB or more of physical addressable memory being available to the operating system and applications, depending on the system configuration and operating system.

4 Intel® High Definition Audio requires a system with an appropriate Intel® chipset and a motherboard with an appropriate codec and the necessary drivers installed. System sound quality will vary depending on actual implementation, controller, codec, drivers, and speakers. For more information about Intel® HD Audio, refer to www.intel.com/design/chipssets/hdaudio.htm.

5 The Intel® Core™ Processor System Requirements and Options document is available online for detailed information. Please visit http://www.intel.com/design/chipssets/hdaudio.htm.

6 Intel® Hyper-Threading Technology requires a computer system with a processor supporting HT Technology and an HT Technology-enabled chipset, BIOS, and operating system. Performance will vary depending on the specific hardware and software you use. See www.intel.com/inf/hyperthreading for more information.

7 Based on availability of 8 GB SO-DIMMs. Also, system resources and hardware (such as PCI and PCI Express*) require physical memory address locations that can reduce available addressable system memory.

For ordering information, visit: www.intel.com

For the most current product information, visit: http://developer.intel.com/products/desktop/motherboard/

Canada
- ICES-003

Europe
- (EMC Directive 2004/108/EC)
- EN 55022 and EN 55024

Australia/New Zealand
- EN 55022

Japan
- VCCI V-3, V-4

South Korea
- KN-22 and KN-24

Taiwan
- CNS 1343B

International
- C-22.2

Environmental Compliance
Europe
- Europe RoHS (Directive 2002/95/EC)
- WEEE (Directive 2002/96/EC)

China
- China RoHS (MII Order # 39)

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

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