

DELL™

OPTIPLEX™ 9010

ALL-IN-ONE

TECHNICAL GUIDEBOOK

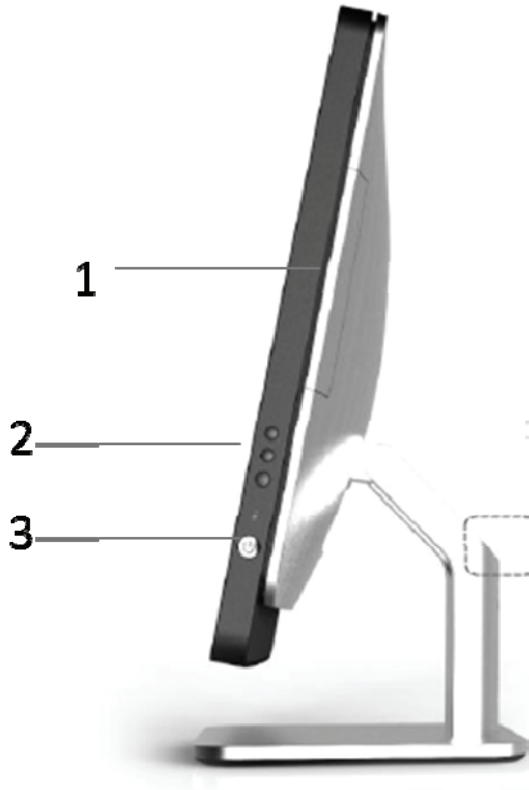
INSIDE THE OPTIPLEX 9010 ALL-IN-ONE



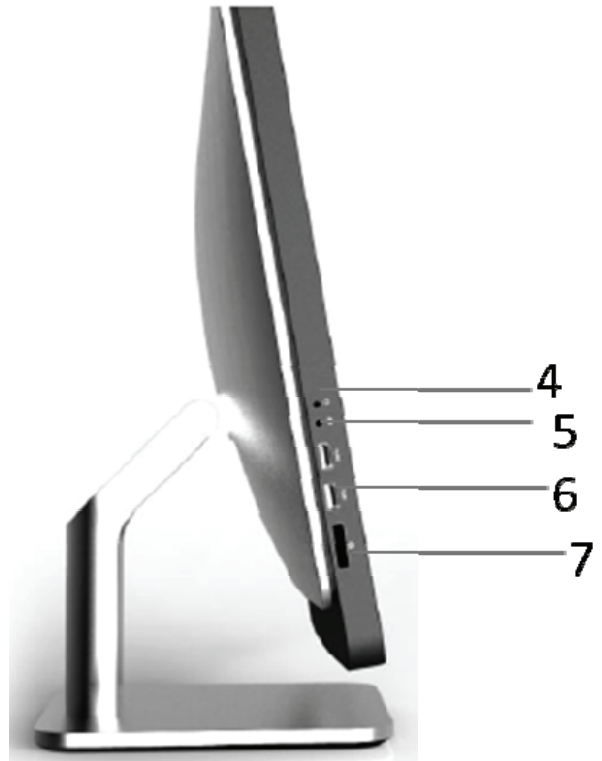
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OVERVIEW

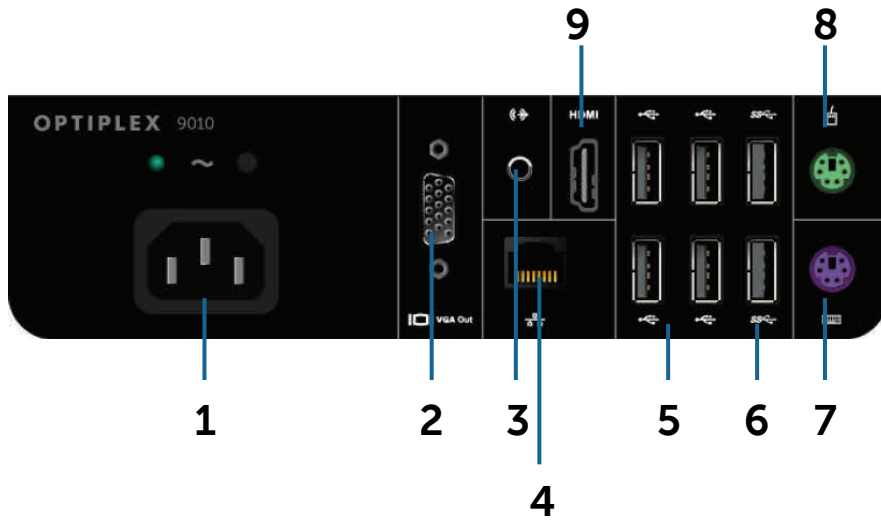


| RIGHT VIEW | |
|------------|----------------------------------|
| 1 | Optical Drive Bay (optional) |
| 2 | Side key Button (up, down, mode) |
| 3 | Power Button, Power Light |



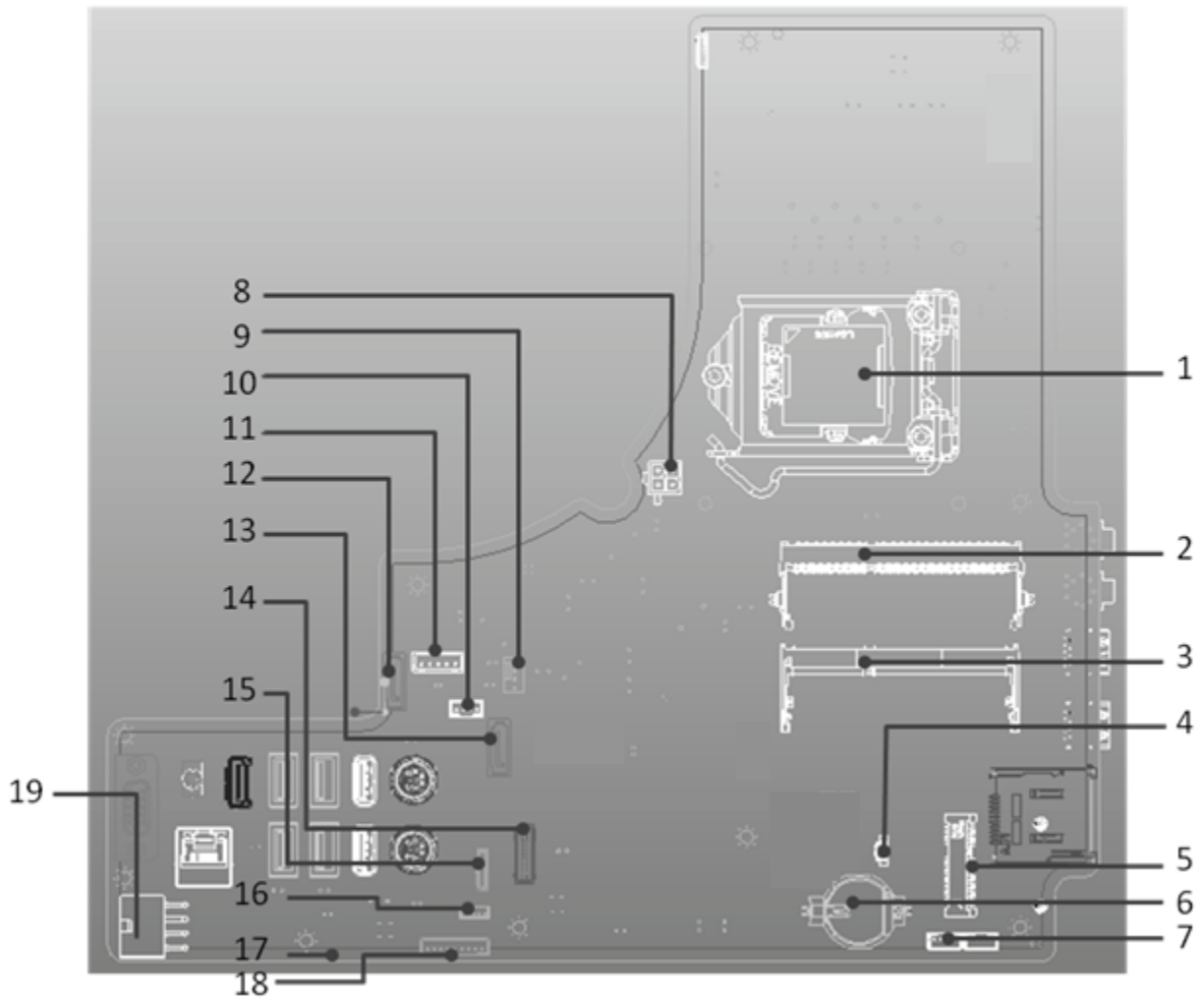
| LEFT VIEW | |
|-----------|--------------------------|
| 4 | Headphone Connector |
| 5 | Microphone Connector |
| 6 | USB3.0 Connectors (2) |
| 7 | 8-in-1 Media Card Reader |

AIO VIEW



| REAR VIEW | | | |
|-----------|-----------------------|---|-------------------------|
| 1 | Power Connector | 6 | USB3.0 Connectors (2) |
| 2 | VGA Connector | 7 | PS/2 Keyboard Connector |
| 3 | Line-out Connector | 8 | PS/2 Mouse Connector |
| 4 | Network Connector | 9 | HDMI Connector |
| 5 | USB2.0 Connectors (4) | | |

AIO SYSTEM BOARD COMPONENTS



| BOARD COMPONENTS | | | |
|------------------|-------------------------------------|----|--------------------------|
| 1 | Processor Socket | 11 | SATA HDD Power Connector |
| 2 | Memory Connector (SO-DIMM Socket B) | 12 | SATA HDD Connector |
| 3 | Memory Connector (SO-DIMM Socket A) | 13 | SATA ODD Connector |
| 4 | Intrusion Switch Connector | 14 | LVDS Connector |
| 5 | Mini-PCI Socket | 15 | Side Key Board Connector |
| 6 | Battery Connector | 16 | Touch Panel Connector |
| 7 | Internal Speaker Connector | 17 | PSU Fan Connector |
| 8 | 12V CPU PWR Connector | 18 | Converter Connector |
| 9 | CPU Fan Connector | 19 | PSU Connector |
| 10 | SATA ODD Power Connector | | |

SYSTEM CONFIGURATIONS

NOTE: Offerings may vary by country. For more information regarding the configuration of your computer, click Start>Help and Support and select the option to view information about your computer.

OPERATING SYSTEM

| | AIO |
|-----------------------------|--|
| Windows operating system | Microsoft® Windows 7® Home Basic SP1 (32 and 64 bit), Microsoft® Windows 7® Home Premium SP1 (32 and 64 bit), Microsoft® Windows 7® Home Premium w/MUI SP1 (32 and 64 bit), Microsoft® Windows 7® Professional w/MUI SP1 (32 and 64 bit), Microsoft® Windows 7® Professional SP1 (32 and 64 bit), Microsoft® Windows 7® Ultimate SP1 (32 and 64 bit), |
| Other | Ubuntu (N-Series DIB) (32bit) Ubuntu (32bit) |
| OS Media Support (optional) | Optional |

CHIPSET

| | AIO |
|--|---|
| Chipset | Intel Q77 Express Chipset |
| Non-volatile memory on chipset | |
| BIOS Configuration SPI (Serial Peripheral Interface) | 64Mbit (8MB) & 32Mbit(4MB) located at SPI_FLASH on chipset |
| TPM 1.2 Security Device (Trusted Platform Module) ¹ | 4KB located at TPM1.2 on chipset |
| Non-TPM | Available in select countries |
| NIC EEPROM | LOM configuration contained within SPI_FLASH – no dedicated LOM EEPROM |

PROCESSOR

NOTE: Global Standard Products (GSP) are a subset of Dell’s relationship products that are managed for availability and synchronized transitions on a worldwide basis. They ensure the same platform is available for purchase globally. This allows customers to reduce the number of configurations managed on a worldwide basis, thereby reducing their costs. They also enable companies to implement global IT standards by locking in specific product configurations worldwide. The following GSP processors identified below will be made available to Dell customers.

NOTE: Processor numbers are not a measure of performance. Processor availability subject to change and may vary by region/country.

| | AIO |
|---|------------|
| Intel® Quad Core Processors | |
| Intel® Core™ i7 3770S / 3.40GHz, 8M, VT-x, VT-d, TXT (vPro™), 65W | GSP |
| Intel® Core™ i5 3550S / 3.00GHz, 6M, VT-x, VT-d, TXT (vPro™), 65W | X |
| Intel® Core™ i5 3450S / 2.80GHz, 6M, VT-x, VT-d, TXT (vPro™), 65W | X |
| Intel® Dual Core Processors | |
| Intel® Core™ i3 2130 / 3.40GHz, 3M, VT-x, 65W | X |
| Intel® Core™ i3 2125 / 3.30GHz, 3M, VT-x, 65W | X |
| Intel® Core™ i3 2120 / 3.30GHz, 3M, VT-x, 65W | X |
| Intel® Core™ G850 / 2.9GHz, 3M, VT-x, 65W | X |
| Intel® Core™ G630 / 2.7GHz, 3M, VT-x, 65W | X |

MEMORY

NOTE: Memory modules should be installed in pairs of matched memory size, speed, and technology. If the memory modules are not installed in matched pairs, the computer will continue to operate, but with a slight reduction in performance. The entire memory range is available to 64-bit operating systems.

| | AIO |
|--|-------------------|
| Type: DDR3 Synch DRAM Non-ECC Memory | 1600 MHz |
| SODIMM Slots | 2 |
| SODIMM Capacities | Up to 8GB |
| Minimum Memory | 2GB |
| Maximum System Memory | 16GB ¹ |
| Memory configurations | |
| 16GB ¹ DDR3, 1600MHz ² (2 x 8 GB) | X |
| 8GB ¹ DDR3, 1600MHz ² (2 x 4GB) | X |
| 6GB ¹ DDR3, 1600MHz ² (2GB + 4GB) | X |
| 4GB ¹ DDR3, 1600MHz ² (2 x 2GB) | X |
| 4GB ¹ DDR3, 1600MHz ² (1 x 4GB) | X |
| 2GB DDR3, 1600MHz ² (1 x 2GB) | X |

¹To fully utilize 4GB or more of memory requires a 64-bit enabled processor and 64-bit operating system. With 32-bit OS, the total amount of available memory will be less than 4GB. The amount less depends on the actual system configuration.

²1600MHz memory will only perform as 1600MHz memory when 3rd generation CPUs are used. It will perform as 1333MHz memory if 2nd generation i3-2130, i3-2125, i3-2120, G860 or G850 CPUs are installed in the system. It will perform as 1066MHz memory if 2nd generation G640 or G630 CPUs are installed in the system.

PANEL

| | AIO |
|-------------------------|-------------------|
| Size | 23" |
| Resolution | FHD (1920 x 1080) |
| Color Gamut | 72% |
| Technology | TN |
| Contrast Ratio | 1000:1 |
| Brightness (Typical) | 250nits |
| Refresh Rate | 60Hz |
| Viewing Angle (Typical) | 85/85/80/80 |
| Coating/Treatment | Anti-Glare |

DRIVES AND REMOVABLE STORAGE

| | AIO |
|--|-----|
| Bays: | |
| 5.25-inch Optical Bay Supported (External) | 0 |
| Optical Drives Supported (maximum) | 1 |
| Hard Drive Bay Supported (Internal) | 1 |
| Hard Drives Supported 3.5"/2.5" (maximum) | 1/1 |
| Interface: | |
| SATA 2.0 | 0 |
| SATA 3.0 | 2 |
| 3.5" Hard Drives: | |
| 1TB ¹ SATA 7200 RPM HDD | X |
| 500GB ¹ SATA 7200 RPM HDD | X |
| 250GB ¹ SATA 7200 RPM HDD | X |
| 2.5" Hard Drives: | |
| 128GB ¹ SATA Solid State drive | X |
| 320GB ¹ SATA 7200 RPM SED HDD | X |
| 500GB ¹ SATA 7200 RPM Hybrid HDD 16MB cache | X |
| Optical Drive: | |
| Blu-ray Writer SATA | X |
| DVD+/-RW ² SATA | X |
| DVD-ROM ³ SATA | X |
| Media Card Reader: | |
| Dell 8 in 1 Media Card Reader | X |

SYSTEM BOARD CONNECTORS

NOTE: See Detailed Engineering Specifications for maximum card dimensions.

| | AIO |
|--|-----|
| Mini PCIe connector ⁴ | 1 |
| Serial ATA (SATA) connector ⁵ | 2 |

¹ For hard drives, GB means 1 billion bytes; actual capacity varies with preloaded material and operating environment and will be less.

² Discs burned with this drive may not be compatible with some existing drives and players; using DVD+R media provides maximum compatibility.

³ DVD-ROM drives may have write-capable hardware that has been disabled via firmware modifications.

⁴ miniPCIe (Support Standard Rev 2.0)

⁵ Serial ATA (2 ports Support Standard Rev 3.0, the rest of ports Support Standard Rev 2.0)

GRAPHICS/VIDEO CONTROLLER

| | AIO |
|--|-------------------|
| Integrated Intel® HD Graphics 2500/4000 (3 rd generation Core i3/i5/i7 CPUs); Integrated Intel® HD Graphics 2000/3000 (2 nd generation Core i3 CPUs); Integrated Intel® HD Graphics (Pentium® Dual Core CPU) | Integrated on CPU |

EXTERNAL PORTS/CONNECTORS

| | AIO |
|-------------------------------------|----------------|
| Data: | |
| USB 2.0 (Side/Rear/Internal) | 0/4/3 |
| USB 3.0 (Side/Rear/Internal) | 2 (side)/2/0 |
| Network Connector (RJ-45) | 1 Rear |
| PS/2 | 2 Rear |
| Video: | |
| VGA | 1 Rear |
| HDMI | 1 Rear |
| Audio: | |
| Line in for microphone | 1 Side |
| Line in for microphone or stereo | 0 |
| Line out for headphones or speakers | 1 Side, 1 Rear |

COMMUNICATIONS - NETWORK ADAPTER (NIC)

| | AIO |
|---|----------------------------|
| Intel® 82579LM Gigabit ¹ Ethernet LAN 10/100/1000 (Remote Wake Up, PXE support and Intel Active Management Technology support) | Integrated on system board |

¹ This term does not connote an actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

COMMUNICATIONS – WIRELESS

| | AIO |
|--|------------|
| Dell Wireless 1530 half miniPCIe WLAN card (802.11n) | Optional |
| Intel Wireless 6235 half miniPCIe WLAN card (802.11n) with Bluetooth | Optional |

AUDIO AND SPEAKERS

| | AIO |
|---|----------------------------|
| Realtek ALC269Q High Definition Audio Codec | Integrated on system board |
| AIO internal speaker | Yes |

KEYBOARD AND MOUSE

| | AIO |
|--|--|
| Dell USB Entry Keyboard with optional palmrest | Optional |
| Dell Multimedia Pro Keyboard | Optional |
| Dell Smart Card Keyboard | Optional |
| Dell Wireless Keyboard | Optional |
| Dell USB Optical Mouse | Optional |
| Dell Laser Mouse | Optional |
| Dell Wireless Mouse | Optional (Bundled with Dell Wireless Keyboard) |

SECURITY

| | AIO |
|---|----------------------------|
| Trusted Platform Module (TPM) 1.2 ¹ | Integrated on system board |
| Chassis Intrusion Switch | Standard |
| Dell Smart Card Keyboard | Optional |
| Chassis lock slot and loop support | Standard |
| Dell Data Protection Hardware Encryption Engine | Optional |

¹TPM is not available in all countries. Depending on your country regulations, no-TPM system boards may be available.

SOFTWARE

| | AIO |
|--|------------------------|
| Dell Client Manager | Available via Dell.com |
| Dell Data Protection Access (DDPA) | Standard |
| Dell Data Protection Encryption (DDPE) | Optional |

ENVIRONMENTAL

NOTE: For more details on Dell Environmental features, please to go to Environmental Attributes section. See your specific region for availability.

| | AIO |
|-------------------------------|-------------------|
| MultiPack packaging | Optional, US only |
| Energy Efficient Power Supply | Standard |

ALL-IN-ONE STANDS AND MOUNTS

| | AIO |
|-----------|--|
| AIO Stand | Standard (can be deselected at order time) |
| No stand | Optional |

SERVICE AND SUPPORT

NOTE: For more details on Dell Service Plans please to go to: www.dell.com/service/service_plans

| | AIO |
|---|----------|
| 3 Year Warranty ¹ Next Business Day On-site ² (3-3-3) | Standard |
| ProSupport | Optional |

¹ For a copy of our guarantees or limited warranties, please write Dell USA L.P., Attn: Warranties, One Dell Way, Round Rock, TX 78682. For more information, visit www.dell.com/warranty.

² Service may be provided by third-party. Technician will be dispatched if necessary following phone-based troubleshooting. Subject to parts availability, geographical restrictions and terms of service contract. Service timing dependent upon time of day call placed to Dell. U.S. only.

DETAILED ENGINEERING SPECIFICATIONS

SYSTEM DIMENSIONS (PHYSICAL)

NOTE: System Weight and Shipping Weight is based on a typical configuration and may vary based on PC configuration. A typical configuration includes: integrated graphics, one hard drive, one optical drive.

| | AIO |
|--|---------------|
| Chassis Weight w/o stand (pounds / kilograms) | 16.8 / 7.6 |
| Chassis Dimensions (system w/o stand): (HxWxD) | |
| Height (inches / centimeters) | 15.2 / 38.6 |
| Width (inches / centimeters) | 22.6 / 57.4 |
| Depth (inches / centimeters) | 2.7 / 6.8 |
| Basic Stand Dimensions | |
| Footprint (inches / centimeters square) | 8.7 / 22 |
| Weight (pounds / kilograms) | 5.3 / 2.4 |
| Packaging Parameters (HxWxD—includes basic stand) | |
| Height (inches / centimeters) | 27.27 / 69.28 |
| Width (inches / centimeters) | 14.05 / 35.68 |
| Depth (inches / centimeters) | 23.37 / 59.37 |
| Shipping Weight (pounds / kilograms - includes packaging materials) | 28.5 / 12.9 |

SYSTEM BOARD CONNECTOR MAXIMUM ALLOWABLE DIMENSIONS

| | AIO |
|---|-----------|
| Mini PCIe x1 Slot (Voltage supported 3.3V/5V/12V/-12V) | 1.5V/3.3V |
| Width (inches/centimeters) | 1.18/3 |
| Length (inches/centimeters) | 1.06/2.68 |
| Maximum Wattage | 4.2W |

SYSTEM LEVEL ENVIRONMENTAL AND OPERATING CONDITIONS

| AIO | |
|--------------------------|--|
| Temperature | |
| Operating | 0° to 35° C (50° to 95° F) |
| Non-Operating (Storage) | -40° to 65° C (-40° to 149° F) |
| Relative Humidity | 20% to 80% (non-condensing) |
| Maximum vibration | |
| Operating | 0.26 Grms at 5~350 Hz |
| Non-Operating | 2.2Grms at 5~500Hz |
| Maximum Shock | |
| Operating | 40G Bottom half-sine pulse with a change in velocity of 49.9cm(19.6inches/sec) |
| Non-Operating | 45G half-sine wave with a change in velocity of 731.5cm(288 inches/sec) |
| Maximum Altitude | |
| Operating | 0 to 3048 m (0 to 10,000 ft) |
| Non-Operating | 0 to 10,668 m (0 to 35,000 ft) |

POWER

NOTE: This machine utilizes a more efficient Active Power Factor Correction (APFC) power supply. Dell recommends only Universal Power Supplies (UPS) based on Sine Wave output for APFC PSUs, not an approximation of a Sine Wave, Square Wave, or quasi-Square Wave. If you have questions, please contact the manufacture to confirm the output type.

| | AIO |
|---|--|
| Power Supply Wattage | 200W High Efficiency |
| AC input Voltage Range | 90 – 264Vac |
| AC input current (low ac range/high AC range) | 2.9A / 1.45A |
| AC input Frequency | 47 – 63 Hz |
| AC holdup time (80% load) | 16 mini sec |
| Average Efficiency (Energy Star 5.0 Compliant) | 87 – 90 – 87% @ 20 – 50 – 100% load |
| Typical Efficiency (Active PFC) | N/A |
| DC parameters | |
| +3.3v output | N/A |
| +5.0v output | N/A |
| +12.0v output | . +12VA – 9.5A & +12BB – 7.2A Note: +12VB Rated at 0.4A when in Standby Mode. |
| +5.0v auxiliary output | N/A |
| -12.0v output | N/A |
| Max total power | 200W |
| Max combined +3.3v / +5.0v power | N/A |
| Max combined 12.0v power (note: only if more than one 12v rail) | 200W |
| BTUs/h (based on PSU max wattage) | 682 BTU |
| Power Supply Fan | N/A |
| Compliance: | |
| Erp Lot6 Tier 2 0.5watt requirement | Yes |
| Climate Savers / 80Plus Compliant | Yes |
| FEMP Standby Power Compliant | Yes |
| CECP Compliant | Yes |

POWER

NOTE: This machine utilizes a more efficient Active Power Factor Correction (APFC) power supply. Dell recommends only Universal Power Supplies (UPS) based on Sine Wave output for APFC PSUs, not an approximation of a Sine Wave, Square Wave, or quasi-Square Wave. If you have questions, please contact the manufacture to confirm the output type.

| 3.0v CMOS battery (Type and estimated battery life) | | | | |
|--|-------------|----------------|--------------------|--|
| Brand | Type | Voltage | Composition | Life |
| JHIH HONG | CR-2032 | 3V | Lithium | Continuous Discharge Under 15 kΩ Load to 2.5V End-Voltage. 20°C±2°C: 940Hrs or longer; 910Hrs or longer after 12 months. |
| MITSUBISHI | CR2032 | 3V | Lithium | Continuous Discharge Under 15 kΩ Load to 2.0V End-Voltage. 20°C±2°C: 1000Hrs or longer; 970Hrs or longer after 12 months. 0°C±2°C: 910Hrs or longer; 890Hrs or longer after 12 months. |

AUDIO

| INTEGRATED REALTEK ALC269Q HIGH DEFINITION AUDIO | AIO |
|---|--|
| High Definition Stereo support | X |
| Number of channels | 2 |
| Number of Bits / Audio resolution | 16, 20, and 24-bit resolution |
| Sampling rate (recording/playback) | Support 44.1K/48K/96K/192 kHz sample rates |
| Signal to Noise Ratio | 98 dB DAC outputs, 90 dB for ADC inputs |
| Analog Audio | X |
| Audio Jack Impedance | |
| Microphone | 40K ohm~60K ohm |
| Line-In | N/A |
| Line-Out | 100~150 ohm |
| Headphone | 1~4 ohm |
| Internal Speaker Power Rating | 7.5Watt (peak) / 5Watt (average) |

COMMUNICATIONS - NETWORK ADAPTER (NIC)

| INTEGRATED INTEL® 82579 GIGABIT1 | AIO |
|--|---|
| External Connector Type | RJ45 |
| Data Rates supported | 10/100/1000 Mbps ¹ |
| Controller Details | |
| Controller bus architecture | PCIe-based interface for S0 state, SMBus for Sx low power state |
| Integrated memory | N/A |
| Data transfer mode (example Bus-Master DMA) | N/A |
| Power consumption (full operation per data rate connection speed) | 711mW (Max.) |
| Power consumption (standby operation) | 227mW (Max.) |
| IEEE standards compliance (example 802.1P) | 802.3 |
| Hardware Certifications (example FCC, B, GS mark...) | N/A |
| Boot ROM Support | EEPROM (located in SPI) |
| Network Transfer Mode (example Full Duplex, Half Duplex) | |
| Network Transfer Rate (example 10BASE-T (half-duplex) 10 Mbps 10BASE-T (full-duplex) 20 Mbps 100BASE-TX (half-duplex) 100 Mbps 100BASE-TX (full-duplex) 200 Mbps) | 10 Mb (full/half-duplex) 100 Mb (full/half-duplex) 1000 Mb (full-duplex) |
| Operating temperature | 0° C to 85° C (32° F to 185° F) |
| Operating humidity | 20% to 80% (non-condensing) |
| Operating System Driver Support | Windows 7 32/64, Windows XP 32/64, Vista 32/64 |
| Manageability (examples WOL, PXE) | WOL, PXE 2.1 |
| Management Capabilities Alerting | Intel® Standard Manageability, Intel Core 2 Duo/Quad Processor with vPro Technology |

¹ This term does not connote an actual operating speed of 1 Gb/sec. For high speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

COMMUNICATIONS – WIRELESS

| DELL WIRELESS 1530 PCIE MINI PCIE WLAN CARD | AIO |
|--|--|
| External Connector Type | Custom WLAN Antenna Connector |
| Controller Details | |
| Controller bus architecture | Electrically compatible with the PCI Express Base Specification v1.2 and PCIe v1.2. |
| WLAN standards supported | 802.11a, 802.11g, 802.11n |
| 802.11b Data Rates supported | 11, 5.5, 2, 1 Mbps |
| 802.11a Data Rates supported | Not support |
| 802.11g Data Rates supported | 54, 48, 36, 24, 18, 12, 9, 6 Mbps |
| 802.11n Data Rates supported | 270, 240, 180, 135, 130, 121.5, 120, 117, 108, 104, 90, 81, 78, 65, 60, 58.5, 54, 52, 40.5, 39, 30, 27, 26, 19.5, 13.5, 13, 6.5 Mbps |
| Encryption | WEP 64-bit and 128-bit, TKIP, AES-CCMP 128-bit |
| Operating temperature | 0–80°C |
| Operating humidity | Max Operating Humidity: 85% |
| Operating System Driver Support | Windows 7 32/64, Windows XP 32/64, Vista 32/64 |

| INTEL WIRELESS 6235 MINI PCIE WLAN CARD (802.11N) | AIO |
|--|--|
| External Connector Type | Custom WLAN Antenna Connector |
| Controller Details | |
| Controller bus architecture | Electrically compatible with the PCI Express Base Specification v1.2 and PCIe v1.2 |
| WLAN standards supported | 802.11a, 802.11n |
| 802.11b Data Rates supported | Not supported |
| 802.11a Data Rates supported | 54, 48, 36, 24, 18, 12, 9, 6 Mbps |
| 802.11g Data Rates supported | 54, 48, 36, 24, 18, 12, 9, 6 Mbps |
| 802.11n Data Rates supported | MCS 0 to 15 for HT20MHz, MCS 0 to 15 for HT40MHz |
| Encryption | WEP 64-bit and 128-bit, TKIP, AES-CCMP 128-bit |
| Operating temperature | 0-80°C |
| Operating humidity | NA |
| Operating System Driver Support | Win7, Win8 |

GRAPHICS/VIDEO CONTROLLER

Onboard Graphics¹
 Integrated Intel® HD Graphics 2500/4000 (3rd generation Core i3/i5/i7 CPUs);
 Integrated Intel® HD Graphics 2000/3000 (2nd generation Core i3 CPUs);
 Integrated Intel® HD Graphics (Pentium® Dual Core CPU);

| |
|------------|
| AIO |
|------------|

| | |
|--|--|
| Bus Type | Integrated |
| GPU core clock | Gen6 Core Intel® HD Graphics /HD Graphics 2000 @ 850MHz Gen7 Core Intel® HD Graphics 2500 / 4000 @ 650MHz |
| Frame Buffer Memory (onboard and shared) Size and Speed | Depends on available system memory(Up to 1.7GB with 4GB system Memory) |
| Overlay Planes | Yes |
| Maximum Color Depth | 32 bit |
| Maximum Vertical Refresh Rate | 75 Hz |
| Multiple Display Support | Yes |
| Operating Systems Graphics/ Video API Support | OpenGL 3.0/DirectX 10.1 |
| Supported Resolutions and Max Refresh Rates (Hz) (Note: Analog and/or digital) | Up to 1920x1200 @ 60Hz (HDMI) Up to 2048x1536 @ 75Hz (VGA only) |
| External Connectors | VGA, HDMI |

VGA

| | |
|---------------|--|
| Bus Type | |
| Audio Support | |

HDMI

| | |
|---------------|--|
| Bus Type | |
| Audio Support | |

¹ Up to 1.7 GB of system memory may be allocated to support integrated graphics, depending on operating system, system memory size and other factors.

HARD DRIVES¹

| 3.5" 1TB SATA 7200 RPM HDD | AIO |
|---|--|
| Capacity (bytes) | 1TB |
| Dimensions inches (W x D x H) | Approximately 4 x 5.87 x 1 inches |
| Interface type and Maximum speed | Up to 6Gb/s (SATA 3.0) |
| Internal buffer size | 32 MB |
| Average Seek Time | 8.5 ms |
| Rotational Speed | 7200 rpm |
| Logical Blocks | 1,953,525,168 |
| Power Source | |
| Power Consumption (reference only) | Idle 5.0W, Active 10.0W(running IOmeter utility) |
| Spin Up Current (reference only) | 5V (1A) ,12V (2A) |
| Environmental Operating Conditions (Non-Condensing): | |
| Temperature Range | 5°C to 60°C |
| Relative Humidity Range | 20% to 80% non-condensing |
| Maximum Wet Bulb Temperature | 29°C |
| Altitude Range | -50 ft to 10000 ft |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Temperature Range | -40°C to 65°C |
| Relative Humidity Range | 10% to 90% non-condensing |
| Maximum Wet Bulb Temperature | 38°C |
| Altitude Range | -50 ft to 35000 ft |

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

| 3.5" 500GB SATA 7200 RPM HDD | AIO |
|---|--|
| Capacity (bytes) | 500,107,862,016 |
| Dimensions inches (W x D x H) | Approximately 4 x 5.87 x 1 inches |
| Interface type and Maximum speed | Up to 6Gb/s (SATA 3.0) Up to 3Gb/s (SATA 2.0) |
| Internal buffer size | 16 MB |
| Average Seek Time | 8.5 ms |
| Rotational Speed | 7200 rpm |
| Logical Blocks | 976,773,168 |
| Power Source: | |
| Power Consumption (reference only) | Idle 5.0W, Active 10.0W(running IOmeter utility) |
| Spin Up Current (reference only) | 5V (1A) ,12V (2A) |
| Environmental Operating Conditions (Non-Condensing): | |
| Temperature Range | 5°C to 60°C |
| Relative Humidity Range | 20% to 80% non-condensing |
| Maximum Wet Bulb Temperature | 29°C |
| Altitude Range | -50 ft to 10000 ft |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Temperature Range | -40°C to 65°C |
| Relative Humidity Range | 10% to 90% non-condensing |
| Maximum Wet Bulb Temperature | 38°C |
| Altitude Range | -50 ft to 35000 ft |

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

| 3.5" 250GB SATA 7200 RPM HDD | AIO |
|---|--|
| Capacity (bytes) | 250,059,350,016 |
| Dimensions inches (W x D x H) | Approximately 4 x 5.87 x 1 inches |
| Interface type and Maximum speed | Up to 6Gb/s (SATA 3.0) Up to 3Gb/s (SATA 2.0) |
| Internal buffer size | 8 MB |
| Average Seek Time | 8.5 ms |
| Rotational Speed | 7200 rpm |
| Logical Blocks | 488,397,168 |
| Power Source | |
| Power Consumption (reference only) | Idle 5.0W, Active 10.0W(running IOmeter utility) |
| Spin Up Current (reference only) | 5V (1A) ,12V (2A) |
| Environmental Operating Conditions (Non-Condensing): | |
| Temperature Range | 5°C to 60°C |
| Relative Humidity Range | 20% to 80% non-condensing |
| Maximum Wet Bulb Temperature | 29°C |
| Altitude Range | -50 ft to 10000 ft |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Temperature Range | -40°C to 65°C |
| Relative Humidity Range | 10% to 90% non-condensing |
| Maximum Wet Bulb Temperature | 38°C |
| Altitude Range | -50 ft to 35000 ft |

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

| 2.5" 128GB¹ SATA SOLID STATE DRIVE | AIO |
|---|--|
| Capacity (GB) | 128 |
| Dimensions inches (W x D x H) | Approximately 2.75 x 3.94 x 0.374 inches |
| Interface type and Maximum speed | Up to 6Gb/s (SATA 3.0) |
| MTBF | 1M hours |
| Average Seek Time | n/a |
| Logical Blocks | 250,069,680 / 500,118,192 |
| Power Source | |
| Power Consumption (reference only) | Idle 0.145W, Active 1.95W |
| Spin Up Current (reference only) | 5V (1000mA) |
| Environmental Operating Conditions (Non-Condensing): | |
| Temperature Range | 0°C to 70°C |
| Relative Humidity Range | 10 to 90% |
| Maximum Wet Bulb Temperature | 29°C |
| Altitude Range | -200 to 5,000 m |
| Op Shock (@0.5ms) | 1,500G |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Temperature Range | -55°C to 95°C |
| Relative Humidity Range | 5 to 95% |
| Maximum Wet Bulb Temperature | 38°C |
| Altitude Range | -200 to 10,600 m |

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

| 2.5" 320GB Opal SED SATA HDD | AIO |
|---|--|
| Capacity (bytes) | 320GB |
| Dimensions inches (W x D x H) | Approximately 2.75 x 3.94 x 0.374 inches |
| Interface type and Maximum speed | Up to 3Gb/s |
| Internal buffer size | 16 MB |
| Average Seek Time | 11 ms (Read) |
| Rotational Speed | 7200 rpm |
| Logical Blocks | 625,142,448 |
| Power Source | |
| Power Consumption (reference only) | Idle 0.7W, Active 3.25W |
| Spin Up Current (reference only) | 5V (1A) |
| Environmental Operating Conditions (Non-Condensing): | |
| Temperature Range | 5°C to 60°C |
| Relative Humidity Range | 20% to 80% non-condensing |
| Maximum Wet Bulb Temperature | 29°C |
| Altitude Range | -50 ft to 10000 ft |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Temperature Range | -40°C to 65°C |
| Relative Humidity Range | 10% to 90% non-condensing |
| Maximum Wet Bulb Temperature | 38°C |
| Altitude Range | -50 ft to 35000 ft |

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

HARD DRIVES¹ (CONT.)

| 2.5" 500GB SATA 7200 RPM HYBRID HDD | AIO |
|---|--|
| Capacity (bytes) | 500GB |
| Dimensions inches (W x D x H) | Approximately (3.93 x 2.75 x 0.374 inches) |
| Interface type and Maximum speed | Up to 6Gb/s |
| Internal buffer size | 16 MB |
| Average Seek Time | 12 ms (Read) |
| Rotational Speed | 7200 rpm |
| Logical Blocks | 976,773,168 |
| Power Source | |
| Power Consumption (reference only) | Idle 0.8W, Active 3.25W |
| Spin Up Current (reference only) | 5V (1A) |
| Environmental Operating Conditions (Non-Condensing): | |
| Temperature Range | 5°C to 60°C |
| Relative Humidity Range | 20% to 80% non-condensing |
| Maximum Wet Bulb Temperature | 29°C |
| Altitude Range | -50 ft to 10000 ft |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Temperature Range | -40°C to 65°C |
| Relative Humidity Range | 10% to 90% non-condensing |
| Maximum Wet Bulb Temperature | 38°C |
| Altitude Range | -50 ft to 35000 ft |

¹ For hard drives, GB means 1 billion bytes ; actual capacity varies with preloaded material and operating environment and will be less.

OPTICAL DRIVES

| DVD +/- RW ¹ | AIO |
|---|--|
| External Dimensions inches/centimeters (Without Bezel – W x H x D) | 128.0 mm (5.04)/ 12.7mm (0.5 in)/ 126.1mm (4.97in) |
| Weight (max) pounds/kilograms | 170g |
| Interface type and speed | SATA 1.5Gbit/s |
| Disc Capacity | Standard |
| Internal buffer size | supplier dependent |
| Access Times (typical) | supplier dependent |
| Maximum Data Transfer Rates | |
| Writes | 8x DVD / 24x CD |
| Reads | 8x DVD/ 24x CD |
| Power Source | |
| DC Power Requirements | 5V |
| DC Current | 2000mA (Max) |
| Environmental Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | 5°C to 50°C |
| Relative Humidity Range | 20% to 80% RH |
| Maximum Wet Bulb Temperature | 29°C |
| Altitude Range | -200 to 3048 |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | -40°C to 65°C |
| Relative Humidity Range | 5% to 95% RH |
| Maximum Wet Bulb Temperature | 38°C |
| Altitude Range | -200 to 10600m |

¹ Discs burned with this drive may not be compatible with some existing drives and players; using DVD+R media provides maximum compatibility.

OPTICAL DRIVES (CONT.)

| DVD-ROM | AIO |
|--|--|
| External Dimensions inches/centimeters (Without Bezel – W x H x D) | 128.0 mm (5.04)/ 12.7mm (0.5 in)/ 126.1mm (4.97in) |
| Weight (max) pounds/kilograms | 165g |
| Interface type and speed | SATA 1.5Gbit/s |
| Disc Capacity | Standard |
| Internal buffer size | supplier dependent |
| Access Times (typical) | supplier dependent |
| Maximum Data Transfer Rates | |
| Writes | N/A |
| Reads | 8x DVD/ 24x CD |
| Power Source | |
| DC Power Requirements | 5V |
| DC Current | 1500mA(Max) |
| Environmental Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | 5C to 50C |
| Relative Humidity Range | 20% to 80% RH |
| Maximum Wet Bulb Temperature | 29C |
| Altitude Range | -200 to 3048m |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | -40C to 65C |
| Relative Humidity Range | 5% to 95% RH |
| Maximum Wet Bulb Temperature | 38C |
| Altitude Range | -200 to 10600m |

OPTICAL DRIVES (CONT.)

| BLU-RAY WRITER | AIO |
|--|--|
| External Dimensions inches/centimeters (Without Bezel – W x H x D) | 128.0 mm (5.04in)/ 12.7mm (0.5 in)/ 126.1mm (4.97in) |
| Weight (max) pounds/kilograms | 165g |
| Interface type and speed | SATA 1.5Gbit/s |
| Disc Capacity | Standard |
| Internal buffer size | supplier dependent |
| Access Times (typical) | supplier dependent |
| Maximum Data Transfer Rates | |
| Writes | 6X BD/8x DVD/24x CD |
| Reads | 6X BD/8x DVD/ 24x CD |
| Power Source | |
| DC Power Requirements | 5V |
| DC Current | 1300mA(Max) |
| Environmental Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | 5°C to 50°C |
| Relative Humidity Range | 20% to 80% RH |
| Maximum Wet Bulb Temperature | 29°C |
| Altitude Range | -200 to 3048m |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | -40°C to 65°C |
| Relative Humidity Range | 5% to 95% RH |
| Maximum Wet Bulb Temperature | 38°C |
| Altitude Range | -200 to 10600m |

MEDIA CARD READER (MCR)

| 8 IN 1 MEDIA CARD READER | AIO |
|---|---|
| External Dimensions inches/(centimeters) (With Bezel – W x H) | |
| Weight (max) pounds/kilograms | |
| Interface type and speed | |
| Media Supported (maximum capacity supported will vary by Flash Media Types) | |
| Media Supported | Secure Digital (SD) SDXC SDHC Hi-Speed SD Multi Media Card (MMC) Memory Stick (MS) Memory Stick Pro(MS Pro) xD-Picture |
| Support Specification Versions: | Compact Flash type I/II Version 4.0 Smart Media (SM) Specification 2003 Multi Media Card (MMC) Specification 4.2 Secure Digital (SD) 2.0 Memory Stick Pro (MS-PRO) Specification 1.02 Memory Stick (MS) Specification 1.43 xD Specification 1.2 |
| Power Source | |
| Max Power Requirements | 2.5W |
| Supply Voltage Range | 4.75V ~ 5.25V |
| Power Consumption: | Standby less than 0.5mA @ 5.0VDC |
| Environmental Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | 5°C to 50°C |
| Relative Humidity Range | 10% to 90% RH |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | -40°C to 65°C |
| Relative Humidity Range | 5% to 95% RH |

WEBCAM

| WEBCAM | AIO |
|---|-------|
| External Dimensions inches/(centimeters) | |
| Weight (max) pounds/kilograms | |
| Interface type and speed | |
| Maximum Resolution | 2.1MP |
| Power Source | |
| Max Power Requirements | |
| Supply Voltage Range | |
| Power Consumption: | |
| Environmental Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | |
| Relative Humidity Range | |
| Environmental Non-Operating Conditions (Non-Condensing): | |
| Operating Temperature Range | |
| Relative Humidity Range | |

BIOS DEFAULTS

| | | |
|----------------------|-------------------------|---|
| General | System Information | Information Only |
| | Boot Sequence | Boot Sequence: Enable (Diskette Drive, HDD, USB Storage Device, CD/DVD/CD-RW Drive) Boot List Option: Enable (Legacy) |
| | Date/Time | Optional User Entry |
| System Configuration | Integrated NIC | Enabled w/PXE |
| | SATA Operation | AHCI |
| | Drives | Enable (SATA-0, SATA-1) |
| | SMART Reporting | Disable |
| | USB Configuration | Enable (Boot Support, Front USB Ports, Rear Dual USB Ports, Rear Quad USB Ports) |
| | Miscellaneous Devices | Enable (Microphone, Camera, Media Card) |
| Security | Admin Password | Optional User Entry |
| | System Password | Optional User Entry |
| | Internal HDD-0 Password | Optional User Entry |
| | Strong Password | Disable |
| | Password Configuration | 4~32 |
| | Password Bypass | Disabled |
| | Password Change | Enable |
| | TPM Security | Disable |
| | Computrace(R) | Deactivate |
| | CPU XD Support | Enable |
| | OPOM Keyboard Access | Enable |
| | Admin Setup Lockout | Disable |
| | Chassis Intrusion | Enabled |
| Performance | Multi Core Support | All |
| | Intel® SpeedStep™ | Enable |
| | C-States Control | Enable |
| | Intel® TurboBoost™ | Enable |
| | HDD Protection Support | Disable |

BIOS DEFAULTS

| | | |
|------------------------|------------------------|--------------------------|
| Power Management | AC Recovery | Power Off |
| | Auto On Time | Disabled |
| | Deep Sleep Control | Enable |
| | Fan Control Override | Disabled |
| | USB Wake Support | Disabled |
| | Wake on LAN/WLAN | Disabled |
| | Block Sleep | Disabled |
| POST Behavior | Numlock Enable | Enable |
| | Keyboard Errors | Enable |
| | POST Hetkeys | Enable |
| | Fastboot | Thorough |
| Virtualization Support | Virtualization | Enable |
| | VT for Direct I/O | Enable |
| | Trusted Execution | Disable |
| Wireless | Wireless Device Enable | Enable (WLAN, Bluetooth) |
| Maintenance | Service Tag | Set by the factory |
| | Asset Tag | Optional User Entry |
| | SERR Messages | Enable |
| Image Server | Lookup Method | DNS |
| | ImageServer IP | 255.255.255.255 |
| | ImageServer Port | 06910 |
| | Client DHCP | DHCP |
| | Client IP | 255.255.255.255 |
| | Client SubnetMask | 255.255.255.255 |
| | Client Gateway | 255.255.255.255 |
| | License Status | Disable |
| System Logs | BIOS Events | Information Only |
| | DellDiag Events | Information Only |
| | Thermal Events | Information Only |
| | Power Events | Information Only |
| | BIOS Progress Events | Information Only |

CHASSIS ENCLOSURE & VENTILATION REQUIREMENTS

ENCLOSURE VENTILATION

If your enclosure has doors, they need to be of a type that allows at least 30% airflow through the enclosure (front and back).

ENCLOSURE MINIMUM CLEARANCE

Leave a 10.2 cm (4 in.) minimum clearance on all vented sides of the computer to permit the airflow required for proper ventilation.

RECOMMENDED ENCLOSURE

Do not install your computer in an enclosure that does not allow airflow. This restricts the airflow and impacts your computer's performance, possibly causing it to overheat.

OPEN DESK MINIMUM CLEARANCE

If your computer is installed in a corner, on a desk, or under a desk, leave at least 5.1 cm (2 in.) clearance from the back of the computer to the wall to permit the airflow required for proper ventilation.



REGULATORY COMPLIANCE AND ENVIRONMENTAL

Product related conformity assessment and regulatory authorizations including Product Safety, Electromagnetic Compatibility (EMC), Ergonomics, and Communication Devices relevant to this product may be viewed at www.dell.com/regulatory_compliance. The Regulatory Datasheet for this product is located at http://www.dell.com/regulatory_compliance.

Details of Dell's environmental stewardship program to conserve product energy consumption, reduce or eliminate materials for disposal, prolong product life span and provide effective and convenient equipment recovery solutions may be viewed at www.dell.com/environment. Product related conformity assessment, regulatory authorizations, and information encompassing Environmental, Energy Consumption, Noise Emissions, Product Materials Information, Packaging, Batteries, and Recycling relevant to this product may be viewed by clicking the Design for Environment link on the webpage.

ACOUSTIC NOISE EMISSION INFORMATION**OPTIPLEX 9010 AIO**

| Component | Typical Configuration | High-end Configuration |
|-------------------|-----------------------|------------------------|
| CPU | Intel 2nd Gen 2c 65W | Intel 3rd Gen 4c 65w |
| Memory | 8G DDR3 1600MHz | 16G DDR3 1600MHz |
| HDD (#, capacity) | 500G 7200RPM SATA3 | 2T 7200RPM SATA3 |
| RMSD | BD-RE,6X,SATA | BD-RE,6X,SATA |
| Graphics Adapter | Intel integrated | Intel integrated |

Declared Sound Power (L_{WAd})

The Declared Noise Emission in accordance with ISO 9296 for the Dell Optiplex 9010 AIO is as follows:
(all values L_{WAd} expressed in bels; 1 bel=10 decibels, re 10^{-12} Watts)

| Operating Mode | Typical Configuration | High-end Configuration |
|----------------|-----------------------|------------------------|
| Idle | 3.3 | 3.4 |
| HDD Operating | 3.4 | 3.5 |
| 90% CPU | 4.4 | 5.0 |
| ODD Operating | 4.3 | 4.3 |

A-Weighted Sound Pressure Level (dB)

The Declared A-weighted Sound Pressure Level in decibels (re 2×10^{-5} Pa), at Operator and Bystander Positions are measured in accordance with ISO 7779 7.6.1, 7.6.2, and C.15.2 and declared in accordance with ISO 9296 for this product is as follows¹:

| Declared Sound Pressure (LpA) | | | | |
|-------------------------------|-----------------------|--------------------|------------------------|--------------------|
| Operating Mode | Typical Configuration | | High-end Configuration | |
| | Operator Position | Bystander Position | Operator Position | Bystander Position |
| Idle | 23.1 | 20.1 | 23.3 | 20.8 |
| HDD Operating | 23.7 | 20.4 | 24.5 | 21.6 |
| 90% CPU | 35.4 | 30.8 | 41.9 | 37.3 |
| ODD Operating | 34.2 | 29.0 | 34.2 | 29.0 |

¹ All tests are conducted according to ISO 7779 and declared according to ISO 9296 except 90% CPU. For this mode, the system CPU was stressed at 90% utilization with no other peripheral device actively seeking. This test mode is not specified in ISO 7779, but was measured using the same microphone distances and measurement techniques defined for the other reported operating modes.

² Declared Sound Power rounded to nearest tenth of a bel per ISO 9296 section 4.4.2