

ACOUSTIC CERTIFICATION: QUIET PC

Issued by SilentPCReview.com
 Contact: mikec@silentpcreview.com
 Date: June 21, 2012

Item:
 Supplier: AVADirect Custom Computers
 Acoustic Results: 18 dBA@1m idle; 26 dBA@1m maximum load

The submitted test system meets the SPCR Certified Quiet PC requirements. The standard calls for a PC system to be ≤ 20 dBA@1m at idle, and ≤ 27 dBA@1m at full system load, with no audible tonality or abrupt changes in noise quality or level, at up to 30°C ambient while maintaining component temperatures at safe levels.

System Components and Details:

- NZXT H2 Classic Silent Black Mid-Tower Case
- SEASONIC X-660 Power Supply
- ASUS P8Z77-V LX Motherboard
- INTEL Core™ i7-3770K Quad-Core
- PROLIMATECH, Megahalems Rev. B CPU Heatsink w/ Dual 120mm NB-Blacknoise SilentPro PL-1 Ultra Quiet Fan,
- Arctic Silver 5 Thermal Compound
- CRUCIAL 16GB (4x4GB) Ballistix Tactical Tracer DDR3 1866MHz SDRAM
- GAINWARD, Phantom GeForce® GTX 560 Ti 822MHz, 2GB
- OCZ, 120GB Vertex 3 SSD
- WESTERN DIGITAL 1.5TB Caviar® Green™ (WD15EARX) HDD
- Smart Drive NEO Standard Silent Hard Disk Drive Enclosure, 5.25"
- SONY AD-7280S Black 24x DVD±R/RW Dual-Layer Burner
- SABRENT CRW-UINB Black 65-in-1 Card Reader/Writer Drive
- 1 NB-SilentPro PK-1 140mm Ultra Quiet Case Fan, 700 RPM,
- 4 NB-SilentPro PL-1 120mm Ultra Quiet Case Fan, 900 RPM,
- MICROSOFT Windows 7 Home Premium 64-bit w/ SP1
- Standard Wiring with Precision Cable Routing and Tie-Down
- Silver Warranty Package (3 Year Limited Parts, 3 Year Labor)

Test Conditions: 30°C, 10.5 dBA in hemi-anechoic chamber. All measurements recorded after thermal/noise stabilized for 15 minutes. SPL = dBA @ 1m distance, from front of PC, 45° angle. All temperatures of components as per readout from sensors via motherboard. Prime95 x8 used for CPU load. Furmark v1.82 at extreme burn used for GPU load.

Test Results					
System load	SPL	AC POWER	CPU	GPU	HDD
Idle	18	58W	41°C	49°C	41°C
HD Video play	18	65~105W	43°C	51°C	41°C
Max CPU	19	125W	69°C	49°C	43°C
Max CPU + GPU	26	335~340W	70°C	83°C	44°C
Idle + HDD seek	19	61W	41°C	49°C	53°C

This certification is valid until Dec 31, 2013 or until a core component is no longer available, whichever comes first.

THE ACOUSTIC PC CERTIFICATION PROGRAM

Silent PC Review's Acoustic PC Certification Program is design to assist both buyers and vendors of quiet computers. In the absence of easily understood and widely adopted acoustic standards for noise in computers, this unique program provides the means by which system integrators can set and verify concrete targets for quiet PCs, and buyers can trust that the certified PCs vendors offer are indeed as quiet or silent as described.

As a third party, independent testing organization, SPCR owes no obligation to any other party, and adheres to our own high standards for acoustic and thermal analysis of PCs, developed over a decade of hands-on intensive testing of PC components and systems. We maintain a hemi-anechoic chamber with an ambient of 10.5 dBA, and extraordinarily sensitive acoustic test equipment capable of accurate measurements as low as 9 dBA. Only the largest PC makers have access to such specialized tools, without which validation of very quiet IT equipment is not possible. SPCR's Acoustic PC Certification Program gives any system integrator the resources to validate and certify their efforts to build extremely quiet PCs. This clarity is much needed in a marketplace where technical hyperbole and inflated claims are the rule.

The programs works like this: Vendors submit their PCs for testing, with a flat fee to cover our extensive testing. If a PC meets one of the two Acoustic PC Certification standards, the vendor is issued a report which is posted publicly in a review published at www.silentpcreview.com. If it does not meet our rigorous standards, the vendor is still issued a report, but it is not made public, and no review is posted at www.silentpcreview.com.

There are two SPCR Acoustic PC Certified Standards:

SILENT PC: 15 dBA@1m or lower SPL with the system in idle, 20 dBA@1m or lower at maximum load.

- The noise level of this class of SPCR certified PC is low enough that in most environments and most workloads, it is effectively inaudible. Even at maximum possible load (with both video card and CPU running full tilt simultaneously), it remains very quiet.

QUIET PC: 20 dBA@1m or lower SPL with the system in idle, 27 dBA@1m or lower at maximum load.

- The idle noise level of this class of SPCR certified PC is low enough that in most environments and most workloads, it is very quiet; it may even be inaudible, like some SPCR Certified Silent PCs. At full load (most notably extreme 3D gaming or extended video processing), it is still quiet, although definitely audible. This certification is designed for gaming enthusiasts who want their PC to be very quiet in normal use but don't mind a bit of noise in exchange for very high performance during game play when headphones or speakers are sounding gaming effects.

All SPCR Certified PCs must also meet these criteria:

- No rapid changes in noise. The noise level increases or decreases gradually so that the change itself does not become a source of annoyance.
- No prominent tonal peaks. These are narrow frequency peaks that sound like pure tones. Especially in the middle and higher frequencies, they can be extremely annoying even if low in amplitude.
- Maintain acoustic levels and safe operating temperature for all components even under high load, in ambient temperature up to 30°C. The reference system submitted by the vendor is tested by SPCR in a hemi-anechoic chamber with the air temperature at 30°C.

Other Details

- Each certification is valid for 18 months from the date of testing, or until core components are no longer available.
- The vendor may offer component alternatives that differ from those used in the reference system tested by SPCR, but must ensure that their acoustic or thermal properties cause the overall noise level to rise no more than 2 dBA SPL above the reference sample or beyond the SPL requirements of the certification class (ie, Silent or Quiet).