



Energy Star® Overview for Desktop and Mobile PCs



What is ENERGY STAR Version 4.0?

As of July 20, 2007 a new ENERGY STAR specification went into effect. This specification:

- Introduces requirements for active power consumption at “idle”
- Requires lower power consumption for “sleep” modes than before
- Sets efficiency requirements for power supplies
- Includes power management requirements for “shopped” products including sleep, standby and Wake on LAN criteria
- Sets testing, labeling, user information and reporting requirements
- Describes use of ENERGY STAR mark for qualified products

Power Requirements for Desktop and Mobile PCs

Desktop (includes PC derived servers and gaming consoles)				
Category	Configuration	Idle	Sleep*	Standby*
A	Default Category	≤ 50 W	≤ 4 W	≤ 2 W
B	Multi-core processor or > 1 discrete processor AND ≥ 1GB RAM	≤ 65 W	≤ 4 W	≤ 2 W
C	Multi-core processor or > 1 discrete processor AND dedicated non-shared GPU RAM of ≥ 128MB, AND at least 2 of these 3 features: <ul style="list-style-type: none"> • ≥ 2GB RAM • TV Tuner and/or HD video capture • ≥ 2 hard disk drives 	≤ 95 W	≤ 4 W	≤ 2 W
Mobile (includes notebook and tablets)				
A	Default Category	≤ 14 W	≤ 1.7 W	≤ 1 W
B	Dedicated non-shared GPU RAM of ≥ 128MB	≤ 22 W	≤ 1.7 W	≤ 1 W

Workstation Power Calculation:

- $P_{TEC} = .01 \times P_{standby} + 0.2 \times P_{sleep} + 0.7 \times P_{idle}$
- P_{TEC} must be $\leq 0.35 \times [P_{max} + (\#HDD \times 5)]W$
(HDD = # hard drives)

*Wake on LAN additional power allowance: +0.7W for sleep, +0.7W for standby



Building a PC that complies with the Energy Star® 4.0 Specification

The following are AMD's recommended component choices to enable reduced desktop and mobile system power consumption and building a PC system compliant with ENERGY STAR Version 4.0 Specification:



AMD Mobile Turion™ 64 X2 mobile technology



AMD Athlon™ X2 Dual-Core 45W Processor



AMD 780G Chipset



ATI Radeon™ Graphics for Desktop and Mobile PC's
ATI Radeon™ 4000 Series*
ATI Radeon™ 3000 Series
ATI Radeon™ 2000 Series

Power Supply Component Guidance

Internal Power Supply

- 80% minimum efficiency at 20%, 50% and 100% of rated output.
- Minimum power factor ≥ 0.9 at 100% of rated output— (typically require active power factor correction)

External Power Supply

Must be ENERGY STAR qualified (found at www.energystar.gov/powersupplies) or meet no-load and active made requirements found at: www.energystar.gov/ia/partners/product_specs/program_reqs/EPS%20Eligibility%20Criteria.pdf

Requirements for Distribution Channel

Any party within the distribution channel of ENERGY STAR qualified PCs that alters a power profile through hardware or software modifications must ensure that the PC continues to meet with ENERGY STAR requirements.



For additional information:

- ENERGY STAR computer specification: www.energystar.gov/index.cfm?c=revisions.computer_spec
- Benefits of computer sleep state power management: www.energystar.gov/powermanagement

*Excluding the ATI Radeon™ HD 4870 X2, ATI Radeon™ HD 4850 X2 and ATI Radeon™ HD 4870