



European Views on the **Computer Specifications Revision**

Washington 15 March 2005



Categories

- European experts endorsed the advantage of having a single category including both notebook and desktop computers. In the experts' views this would allow the transfer of energy saving technologies from notebook to desktop models.
- It was agreed that the practicable proposition for Tier 1 would be to retain two different categories, however if after future qualification of the Tier 1 specifications the two categories could be merged then this would be endorsed.



Categories

The European Expert Working Group proposes the following definitions:

- *Notebook*: a portable computer capable of running without a connection to a grid electricity source.
- *Desktop*: a computer only able to operate if connected to a grid electricity source.



Levels: Off-mode

- For *desktop and notebook* computers an off-mode maximum power consumption of less than **1 W**.
- For a computer with *an external power supply* the off-mode shall be measured as the no-load (disconnected from the computer) power requirement. Compliance criteria shall be those given in the **EU Code of Conduct** (CoC) no-load values for external power supplies (Tier 2 of the EU CoC to come into effect on 1.1.2007)
- Integrated monitor computers (*all-in-one*) shall have an off-mode maximum power consumption of less than **2 W**.



Levels: Sleep

- For *desktop* computers a sleep mode maximum power consumption of less than **5 W**.
- For notebook computer a sleep mode maximum power consumption of less than **5 W**
- For integrated monitor computers (*all-in-one*) sleep mode maximum power consumption of less than **5 W**
- N.B. sleep mode criteria shall be clearly defined, we propose that the criteria of the mode defined by ACPI level S3 applies in this context. Computer response time from this sleep mode state should be properly defined and ergonomically acceptable to users (for example the working context of the computer prior to sleep should be restored quickly and with minimum user interaction). Also the feature to maintain network connectivity while in sleep is important.



Levels: Idle-on mode

- the idle-on mode is currently a very important operational mode for the indicative average operational power requirement of desktop computers and large variations in this power requirement have been noted.
- There is agreement among European experts to include in Tier 1 an idle-on mode maximum power consumption specification. The definition and test method for idle-on mode could be defined and evaluated in a reasonably short time.
- European experts could not recommend, without test data support, appropriate criteria in this context (although it was predicted that a range of 40 to 50 W was likely to be the norm). data for this criteria should be gathered as a priority once the test method is finalised.



Levels: Idle-on mode

- In Denmark there is a voluntary agreements which has some criteria for the idle-on mode.
- The Danish use the following definition:

"Active is the mode which the computer is in immediately after it has been switched on and started the operating system, drivers, etc. which have been built into the computer and reached a stable level for computer activity without other user activity. The computer must be a standard PC, as supplied by the manufacturer, and the consumption must be measured on the basis of a standalone environment. The measurements must be taken when the power consumption is stable. Measurements are considered to be stable when the wattage values do not vary by more than one per cent over a period of three minutes. The measurement period must be sufficiently long to determine the correct average value. It follows the method given in "Energy Star Program Requirements for Computer Monitors (Version 4.0)". For laptop computers with a rechargeable battery, no charging must take place. Test conditions in general must comply with "Energy Star Computer Memorandum of Understanding (Version 3.0)" (can be downloaded from
- www.energystar.gov."



Power Supplies

- If computer equipped with external power supply: use the Code Of Conduct criteria for Phase 2 (1.1.2007); more stringent than Energy Star criteria for off-mode.
- If computer equipped with internal power supply: use the Code Of Conduct criteria for Phase 2 (1.1.2007) for on mode efficiency; these are fully harmonised with the Energy Star criteria for power supplies



Power Supplies

Table 1: No-load Power Consumption

Rated Output Power	No-load power consumption	
	Phase 1 1.1.2005	Phase 2 1.1.2007
$\geq 0.3 \text{ W}$ and $< 15 \text{ W}$	0.30 W	0.30 W
$\geq 15 \text{ W}$ and $< 50 \text{ W}$	0.50 W	0.30 W
$\geq 50 \text{ W}$ and $< 60 \text{ W}$	0.75 W	0.30 W
$\geq 60 \text{ W}$ and $< 150 \text{ W}$	1.00 W	0.50 W



Power Supplies

**Table 3: Energy-Efficiency Criteria for Active Mode for Phase 2
(valid after 1.1.2007)**

Rated Output Power (P_{no})	Minimum Four Point Average (see Annex) or 100 % Load Efficiency in Active Mode (expressed as a decimal) ²
$0 < W \leq 1$	$\geq 0.49 * P_{no}$
$1 < W \leq 49$	$\geq [0.09 * \text{Ln} (P_{no})] + 0.49$
$49 < W \leq 150$	$\geq 0.84^3$



Tier Two

- European Experts recommend the simulation of a typical duty cycle by use of benchmarking software for Tier 2 computer specifications. The current benchmarking tools shall be evaluated for their capability and test data should be gathered.
- We would like to propose the final to set up a joint EU/US working group to evaluate and recommend the benchmarking tool for the Tier 2.



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Thank You

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