

March 31, 2005

JEITA's Comments on the Preliminary Draft for Computers

JEITA International Energy Star Committee

1) **Definitions**

A. Computer

- Comments

— The preliminary draft's definition of Computer simply lists examples of terms.

The following five terms used in Table 1 should be defined precisely.

- Desktops
- Desktop-Derived Servers
- Workstations
- Notebooks
- Integrated Computers

— New types of computers such as “multimedia personal computers” have appeared recently. Multimedia personal computers are being presented to users for use as home servers, which should be always be in an ON state. Do such computers fall under the “Desktops” category used in Table 1? Or are they considered “Desktop-Derived Servers”?

We can expect in the near future the emergence of new computer configurations containing diverse function sets. A clear policy should be formulated to address how such “difficult-to-class computers” are to be defined as they appear.

B. Integrated Computer System

- Comments

— As described above in *A. Computer*, this item is one of the five types of computers used in Table 1 that should be defined.

C. Display

- No comments

D. Network Interface

- No comments

E. Server

- Comments

— The differences between Servers and Desktop Computers are no longer distinct. Many customers now use Desktop Computers as Servers.

F. Active Mode

- No comments

G. Idle Mode

- Comments

— In Japan, the Computer Standards Subcommittee of the Energy Efficiency Standards Subcommittee, operating under the Ministry of Economy, Trade and Industry, has defined idle mode as follows:

Power consumption in idle state (unit: watts)

The power consumption of the idle state (hereinafter “idle state”) is when operation is possible without resetting the initial programs and in the states before operating in low power mode such as standby mode and suspended mode in accordance with the ACPI standards. (Supplement explanation: In the case of notebook computers, the display brightness is not defined, but the characters on displays should be legible when power consumption in idle state is measured.)

H. Sleep Mode

- No comments

I. Standby Mode

- No comments

J. Inactivity

- No comments

K. Wake Events

- No comments

2) Performance Specification and Test Procedures

- Comments

— The definition of “Standby” understood by ordinary users is the Suspend-to-RAM state of operating systems (Microsoft Windows). The EPA’s definition of Standby, however, is the operating system’s Shutdown mode. A different term, such as “OFF mode,” should be used to avoid confusion.

— The Test Protocol references IEC 62301. The EPA, however, should define these test protocols clearly for the ENERGY STAR Draft 4.0. Without its own definition, the ENERGY STAR Draft will invite confusion when changes to the IEC 62301 occur.

— Regarding the Desktop requirement of “ $\leq 2\text{ W}$ ”

(i) An analysis of the power consumption data of existing products is needed.

We will reserve comment on this requirement until after a data analysis is conducted.

— Regarding the Notebook requirement of “ $\leq 0.5\text{ W}$ ”

(i) The most recent Draft of the EPA ENERGY STAR External Power Supply (EPS) Protocol lists the following no-load requirements for power supplies with a nameplate output power of 10 W or more:

Tier I: January 1, 2005 $\leq 0.75\text{ W}$

Tier II: July 1, 2005 $\leq 0.5\text{ W}$ is under consideration by the EPA

Has the EPS Tier II requirement been decided as “ $\leq 0.5\text{ W}$ ”?

(ii) The energy efficiency of Notebook Computers should be considered as a system.

Specifically, what should be important when determining requirement levels is not the power consumption of the AC adaptor on its own but the power consumed when the AC adaptor is plugged into the Notebook Computer.

Table 1. Sleep Mode

- No comments

Table 1. Active Mode — Idle Mode

• Comments

- The idle power consumption trends of computers are largely dependent on CPU and chipset vendors as well as on OS vendors. These vendors, comprising a handful of monopolizing corporations, determine power consumption in idle mode. Thus, should ENERGY STAR set requirements for idle-mode power consumption, computer vendors will be left in an extremely vulnerable position.

There has been a tendency, particularly in recent years, for computers to consume more power while idling due to advances in CPU and chipset fabrication processes and performance improvements. Therefore, the participation of CPU, chipset, and graphics chip vendors as well as OS vendors is essential when setting standards for idle mode power consumption.

Should idle-mode power consumption be made a requirement, the requirement level should be set with due consideration of CPU, chipset, and graphics performance.

- In Japan, the Computer Standards Subcommittee of the Energy Efficiency Standards Subcommittee, operating under the Ministry of Economy, Trade and Industry, has defined energy consumption efficiency (E) as follows:

i) Energy consumption efficiency is calculated by the following formula.

$$E = \{ (W1 + W2)/2 \} / Q$$

In this formula, E, W1, W2 and Q represent the following values.

E: Energy consumption efficiency (unit: watts/million calculations)

(W1 + W2)/2: Power consumption (unit: watts)

W1: Power consumption in idle state (unit: watts)

The power consumption of the idle state (hereinafter “idle state”) is when operation is possible without resetting the initial programs and in the states before operating in low power mode such as standby mode and suspended mode in accordance with the ACPI standards.

W2: Power consumption in low power mode (unit: watts)

The power consumption of low power mode is the low power mode of standby mode and suspended mode in ACPI standards (however, limited to states in which program and data are store in the main memory). Concerning server-side computers and client-side computers that do not have low power modes, the value of W1 is used for W2.

Q: *Composite theoretical performance (CTP) (unit: million of calculations)*

Abbreviation of a standard concerning power management offered by Microsoft and other companies in the U.S. ACPI stands for Advanced Configuration and Power Interface.

Table 1. Active Mode — Internal & External Power Supplies

• Comments

— The main devices consuming power in a computer are the “CPU, chipset, and graphics and others.”

It is not reasonable to create requirement values for power consumption while in idle mode based on power supplies alone without defining values for these main devices.

There is a loss component of the power consumed by the “CPU, chipset, and graphics and other cards” while idling that contributes nothing to performance. This component is equivalent to the power-supply loss.

Because computers are systems, rather than setting criteria for the constitute elements, standards should be determined by the system’s total power consumption after including power-supply losses.

3) **Additional Requirements**

• Comments

— Although the preliminary draft cites IEEE 1621, items important to the ENERGY STAR program should be clarified and explicitly stated in Draft Version 4.

4) **Effective Date**

• Comments

— We will reserve comment until the direction of the Draft is clarified.

5) **Programmatic Changes from MOU to New Partnership Agreement Format**

ENERGY STAR mark

- Comments

— Computer vendors should determine, in accordance with the ENERGY STAR logo guidelines, where the ENERGY STAR mark is used.

For example, this requirement should adequately account for cases where “the ENERGY STAR mark is not affixed to the computer itself out of environmental concerns when recycling, but it is used in product literature and on Internet sites.”

Grandfathering is not allowed under Version 4.0

- Comments

— Withdrawing the ENERGY STAR mark on the run is very problematic because of the reasons below for “computers already in mass production meeting only Version 3.0 criteria” that carry over the Version 4.0 January 1, 2007 effective date.

(i) Computers are manufactured on a build-to-order (BTO) basis; production models are issued in orders of tens of thousands. Thus, even making one ENERGY STAR mark change in the production system after mass production has started is extremely difficult. Even if the change could be made, the massive amount of operations it would entail would hinder the economic activities of the producer.

(ii) Draft Version 4.0 includes requirements necessitating redesigns. Therefore, in contracts with customers where ENERGY STAR qualification is a provision, this stipulation would impede contracts for products continuing to be sold past January 1, 2007.

— Thus, the stipulation should be changed to address these problems by, for example, “recognizing a grace period of at least one year for models that continue to be marketed.”

Shipment Data

- Comments

- We oppose any obligation to provide market indicators (unit shipment or other data) to the EPA because it would place a burden on ENERGY STAR partners. If such an obligation is absolutely necessary, a reciprocal obligation must be placed each time on the EPA to conduct valid statistical data analysis and to present the results to partners.

6) **Tier II**

a. Fixing the Network Problem

- No comments

b. System Energy Efficiency

- Comments

- Defining performance is extremely critical.

The JEITA sincerely wishes to cooperate on the formulation of definitions.