

Technical Requirement for Environmental Products

The Certifiable Technical Requirement for Environmental Labelling Products

HBC 15—2002

Microcomputers and Displays

Replace HJBZ 26—1998

1 Scope

This technical requirement specifies classification, definition, basic requirements, technical contents and test method of environmental labelling for microcomputers and displays.

This technical requirement may apply to microcomputer and display, respectively.

2 Standards cited

Provisions in the following standards are cited in this technical requirement, and therefore form the provisions of the standard. When this technical requirement is published, all of the version of these standards are valid. All of these standards shall be revised, and parties use this technical requirement should take into consideration the possibility of using the latest edition of the following standards.

GB 4943—1995 Safety of Information Technology Equipment Including Electrical Business Equipment

GB 9254—1998 Information Technology Equipment - Radio Disturbance Characteristics - Limits and Methods of Measurement

GB 9313—1995 General specifications for CRT display device of computer

GB/T 9813—2000 Generic specification for microcomputer

GB 6882—86 Acoustics—Determination of sound power levels of noise sources—Precision methods for anechoic and semi-anechoic rooms

3 Definition

3.1 "Microcomputer" means objects based upon hardware system of a micromachine, and which consist of hardware, necessary peripheral equipments and software. It contains desktop microcomputer, portable microcomputer, PC-workstation and PC-server.

3.2 "Low energy consume working mode" refers to a energy saving mode that the equipment automatically entered in the case of no touch to peripheral equipments such as keyboard, mouse for a given set time after the computer is booted. In this mode, all equipments shall take measurement to reduce energy consumption, while they shall be able to automatic recovery to originally working mode after an exterior waken signal inputed.

3.3 "Energy-saving mode A1" means that display enters into energy-saving mode A1 after a period of the last use of keyboard, last operation of mouse or last receiving of signal. While keyboard or mouse is touched again, or the computer received a signal, display will automatically recover to readable mode.

3.4 "Energy-saving mode A2" means that on the basis of mode A1, display enters into energy-saving mode A2 when there is still no touch to keyboard for a given time. Once keyboard or mouse is touched again, or the computer received a signal, display will automatically recover to readable mode, while in this time, recovery may take the same time as cold reboot.

3.5 "USB (Universal Serial Bus) " means universal serial bus.

3.6 "Default power management preset value" refers to power management value which preset by manufacturer when the microcomputer leaves factory.

Approved by SEPA on 10/31/2002

Entered into force on 10/31/2002

4 Basic requirements

- 4.1 Quality of products should conform with requirement of GB/T 9813— 2000 or GB 9313—1995.
- 4.2 Safety performance of products should meet the requirement in GB 4943-1995.
- 4.3 Products should meet the requirements for B grade interfering limitation specified in GB 9254-1998.
- 4.4 Pollutant emission of the company should be obliged to conform with requirement of pollutant emission standards nationally or locally.

5 Technical contents

5.1 Indexes for energy consumption

- 5.1.1 Desktop microcomputer, PC-workstation and PC-server should conform with requirements of energy consumption specified in table 5.1.

Table 5.1

Host computer rated consumed power (W)	Energy consumption in low energy consume working mode	Default power management preset value
≤ 200	$\leq 15w$	$\leq 30min$
$> 200, \leq 300$	$\leq 20w$	$\leq 30min$
$> 300, \leq 350$	$\leq 25w$	$\leq 30min$
$> 350, \leq 400$	$\leq 30w$	$\leq 30min$
> 400	No greater than the 10% of the max. normal output of power supply	$\leq 30min$
B Type ^{Note1}	No greater than the 15% of the max. normal output of power supply	$\leq 30min$

Note1: B Type: Currently, processor and registers of network computer can maintain network connection in hibernation mode; B type computers can keep the same network function no matter if it is in hibernation mode.

- 5.1.2 Energy consumption of portable microcomputers should be less than 35 w in normal working mode, and default power management preset value should be less than 30min.
- 5.1.3 Display should meet the energy consumption requirement set in table 5.2^{note2}:

Table 5.2

Mode	Power consumption	Default power management preset value
Energy-saving mode A1	$\leq 10w$	$\leq 30min$
Energy-saving mode A2	$\leq 5w$	$\leq 60min$

Note 2: As for display with USB interfaces, it only can be in energy-saving mode A1. There should be no connected equipments to USB interfaces during test.

5.2 Design of product

5.2.1 Exchangeable, upgradable design

- (1) Modular design: the products should be designed in modular structure.
- (2) service and operation: products should be detachable by using general tools; and modules can be exchanged by users without the aid of any special tool.
- (3) upgradable and exchangeable perproperty: the design of product should take into consideration of modular upgrade and exchange.

5.2.2 Design of recycling

- (1) Detachment: the product can be detached by a trained personnel independently.
- (2) Recycling of plastics and metals: machine box should be made of plastic and metal that can be 90% recycled technically (by weight).
- (3) Polymeric compounds: the machine box should contain more than 25g independent plastic assembly that made from one polymeric compound (homopolymer or copolymer) or recycled plastic.
- (4) Metal insertions: product should not contain metals that cannot remove from plastics (more than 25g).
- (5) Plastic assembly marker: plastic assembly should be marked according to ISO 11469 except plastics of which weight is less than 25g or area is less than 200 mm².

5.3 Recycle and reuse

5.3.1 Recycle: applicants should establish recovery system for waste products, or should join the official recovery system.

5.3.2 Reuse: applicants should establish recycling system for disused products.

5.4 Limitation for hazardous matter in products

5.4.1 Separation of hazardous matters: assembly containing hazardous substances should be easily found and removed.

5.4.2 Plastic

(1) Pb, Cd: Do not allow to artificially add in Cd and Pb in plastic parts (> 25g).

(2) fire retardant: PBB, PBDE and phenol chloride should not be used in plastic parts (> 25g).

(3) Halon: Any plastic part which exceed 25 g in computer box and frame should not contain halon, but allow to contain maximum 5% organofluoride.

5.4.3 Battery, accumulator: Heavy metal concentraions in battery and accumulator should meet requirement in table 5.3.

Table 5.3

Heavy metal	Hg	Cd	Pb
Limitation (ppm)	≤1	≤10	≤100

5.4.4 Display: Except mercury used in panel display for background fluorescent lighting, mercury and cadmium are not allowed to be used in display.

5.5 Noise when microcomputer is in low energy comsume working mode should not be higher than 48dB(A), and should not be higher than 55dB(A) for disk reading status.

5.6 Exposure rate of display should be less than or equal to 5000nGy/h.

5.7 CRT display should conform with the requirement listed in table 5.4.

Table 5.4

Size of CRT	Vertical frequency	Resolution
14-15	≥100Hz	≥800×600
17"	≥100Hz	≥1024×768
19-21"	≥100Hz	≥1280×1024
21"	≥100Hz	≥1280×1024

5.8 Information published by company

5.8.1 Operating instruction: product should provided with instructions so as to supply product and service information available to users.

5.8.2 Product information

(1) power management: It should include information on max. and min. energy consumption when in working, hibernation, deep sleep and shut-down modes, as well as the state on the situation that zero energy consumption may be achieved only if product is not connected to any external input power supply.

(2) upgrade and exchange: applicants should provide users suggests on upgrading or changing modules.

5.8.3 Service, information system: applicants should provide users information on how to utilize recovery system.

6 Test

6.1 Determination on energy consumption: Connect host to signal wire of the display being tested (or display not being tested), supply power to host and display separately, connect power meters separately to host power supply input end and display power supply input end, determine the energy consumption for host and display in various energy-saving modes seperately and record default power management preset value, it should conform with requirement in 5.1.1 and 5.1.3. ; when portable microcomputers are being determined, connect power meters to power input end of the portable microcomputer, measure energy consumption in normal operating mode, and the results should conform to requirement in 5.1.2.

6.2 Companies should provide relevant certification and declaration to demonstrate that requirements in technical contents of 5.2, 5.3, 5.4, 5.7 and 5.8, and fill in sheets in annex A. It is determined by the way of field inspection.

6.3 Test on exposure rate of products should be conducted according to annex H in GB 4943-1995.

6.4 Noise of products should be measured according to the method in GB 6882-86.

Annotations:

This technical requirement has been prepared by Department of science and technology, standards of State Environment Protection Administration.

The State Environment Protection Administration keeps the right of interpretation for this technical requirement.

Annex A (annex of the standard)

Statement

The following information has been filled in by our corporation, and has been carefully verified. Our corporation would like to declare officially that the information provided below is true and valid to the best of our knowledge. Our corporation will take full responsibility for any consequence due to inaccuracy of the information provided.

Person who fill in the table: _____

Corporate representative: _____

(Stamp of the corporation)

Date

Checklist 1

Environmental design of product	Conform to	Not conform to
Exchangeable, upgradable design		
Modular design		
Product should be modular structure		
Service and operation		
Products should be detachable by using general tools; and modules can be exchanged by users without the aid of any special tool.		
Being upgradable and exchangeable		
Design of product should take upgradable and exchangeable modules into account.		
Hard disk is exchangeable		
CD-ROM is exchangeable (if the system contain this part)		
DVD-ROM is exchangeable (if the system contain this part)		
Design of recycling		
Disassembly		
Product can be disassembled by a single person who has been trained.		
Recycling of plastic and metal		
Plastic and metal used in computer box should be 90% (by weight) recycleable technically.		
Polymeric compound type		
The machine box should contain more than 25g independent plastic assembly that made from one polymeric compound (homopolymer or copolymer) or recycled plastic.		
Metal insertion		
Product should not contain metals that cannot remove from plastics (more than 25g).		
Plastic assembly marker		
Plastic assembly should be marked according to ISO 11469 except plastics of which weight is less than 25g or area is less than 200mm ² .		

Checklist 2

Recycle and reuse	Conform to	Not conform to
Recycle		
Applicants should establish recovery system for waste products, or should join the official recovery system.		
Reuse		
Applicant should establish recycling system for disused product		

Checklist 3

Limitation for hazardous matter in products		Conform to	Not conform to
Separation of hazardous matters			
Part containing hazardous substance should be liable to find and remove.			
Plastic			
Pb, Cd			
Cd and Pb should not add in the plastic part (> 25g)			
Fire retardant			
PBB, PBDE and phenol chloride should not be used in plastic parts (> 25g).			
Halon			
Any plastic part that exceed 25 g in computer box and frame should not contain halon, but allow containing maximum 5% organofluoride.			
Battery, accumulator			
Contents of heavy metals in battery and accumulator should conform with the following requirement.			
Heavy metal	Limitation (ppm)		
Hg	≤1		
Cd	≤10		
Pb	≤100		
Display			
Except mercury used in panel display for background fluorescent lighting, mercury and cadmium are not allowed to be used in display.			

Checklist 4

Limitation for hazardous matter in products		Conform to	Not conform to
Information published by company			
Operating instructions			
Product should provided with instructions so as to supply product and service information available to users.			
Product information			
Power management			
It should include information on max. and min. energy consumption when in working, hibernation, deep sleep and shut-down modes, as well as the state on the situation that zero energy consumption may be achieved only if product is not connected to any external input power supply.			
Being upgradable and exchangeable			
Applicants should provide users suggestion on upgrading and exchanging.			
Service, information system			
Applicants should provide users information on how to utilize recycling system			