



HARMONIZED SYSTEM  
COMMITTEE

NC0470E1

-  
28<sup>th</sup> Session  
-

O. Eng.

Brussels, 28 September 2001.

## CLASSIFICATION OF FLASH ELECTRONIC STORAGE CARDS

(Item VII. 9 on Agenda)

### Reference documents :

42.448 (HSC/22)

NC0160E2, Annex G/17 (HSC/24 – Report)

NC0225E1 (HSC/25)

NC0250E2, Annex IJ/14 (HSC/25 – Report)

NC0301E1 (HSC/26)

NC0340E2, Annex G/18 (HSC/26 – Report)

NC0388E1 (HSC/27)

NC0430E2, Annex H/5 (HSC/27 – Report)

### I. BACKGROUND

1. At its 27<sup>th</sup> Session, the Committee preliminarily discussed the possible classification of three types of flash electronic storage cards. With respect to one type, the Secretariat was instructed to gather more information with regard to the questions whether the printed circuit board (PCB) was considered to be a passive element, and whether or not it was produced by thin- or thick-film technology.
2. Delegations were divided on the question of whether or not the cards at issue had an individual function.
3. The Chairman concluded that, in arriving at the appropriate classification, the Committee should address at its next session the following questions :
  - (i) Do the cards have an individual function;
  - (ii) Do they answer to a description given in a heading other than heading 85.43.

### II. SECRETARIAT COMMENTS

#### **Product information**

4. The Secretariat received on 30 August 2001 a note from the International Chamber of Commerce (ICC), indicating that “flash memory is based on semiconductor technology in which chips and passive elements are surface-mounted onto the printed circuit board. In this sense, the printed circuit board itself is considered a passive element. Additionally, no thin- or thick-film technology is used in the manufacturing process.”

File No. 2804

5. Taking into account the above information, the Secretariat presents the following descriptions of the products at issue, which have been taken from paragraph 7 of Doc. NC0388E1. At the end of items (b) (i) and (ii) the following phrase has been added : “The PCB is not produced by thin- or thick-film technology.”

<p><b>(a) Larger type</b></p> <p>Solid-state, non-volatile data storage device (known as a “flash memory card” or “flash electronic storage card”), consisting of a printed circuit board onto which are mounted (i) one or more flash memories (“FLASH E<sup>2</sup>PROM”) in the form of integrated circuits, (ii) a microcontroller in the form of an integrated circuit, (iii) a number capacitors and resistors, and (iv) a connecting socket.</p>
<p><b>(b) Smaller type</b></p> <p>(i) Solid-state, non-volatile data storage device (known as a “flash memory card” or “flash electronic storage card”), consisting of a printed circuit board (PCB) onto which are mounted one or more flash memories (“FLASH E<sup>2</sup>PROM”) and a controller, in the form of integrated circuits, and passive elements, such as capacitors and resistors; the traces and through hole connection being of copper, with a connecting socket. The various components are mounted by surface mount technology onto the PCB, which is subsequently top and bottom lidded or bonded to a plastic card. The PCB is not produced by thin- or thick-film technology.</p> <p>(ii) Solid-state, non-volatile data storage device (known as a “flash memory card” or “flash electronic storage card”), consisting of a printed circuit board (PCB) onto which is mounted one flash memory (“FLASH E<sup>2</sup>PROM”), in the form of an integrated circuit, with a connecting socket. The component is attached by epoxy onto the PCB, which is subsequently attached to a plastic frame by gluing. The PCB is not produced by thin- or thick-film technology.</p>
<p>In all types, data from an external source (such as navigation and global positioning systems, data collection terminals, portable scanners, medical monitoring appliances, audio recording apparatus, personal communicators (“pagers”), mobile phones and digital cameras), can be stored onto and read from the card once it has been connected to that particular appliance. The data can also be loaded into an automatic data processing machine by using a special adapter. The storage capacities of the cards range from 2 MB to 500 MB. The card only uses power from the appliances to which it is connected and requires no battery.</p>

6. Taking into account that no thin- or thick-film technology is involved, the Secretariat takes the view that the classification rationale should be the same for all three types of cards. It also understands from the discussions in the Committee that the products at issue are classifiable in Section XVI.

**“Individual function”**

7. With respect to the question of whether or not the cards have an individual function, the Secretariat would like to present the following comments.
8. First, the function of the cards is to store data in electronic format, which is received from an external source to which the card can be connected. This data is stored in “cells” by storing a charge of electricity inside a cell. The mapping of the data is done by the controller, which is dedicated to manage the flash (this function is taken over by the host controller in

case there is no controller on the card) and which cannot be programmed to do other functions. The controller, which contains the intelligence, acts as an interface to ensure the compatibility with the format used by the host. It also carries out a function similar to the VFAT<sup>1)</sup> on a hard disk or a floppy disk.

9. In the Harmonized System, the following electrical appliances are considered to have an “individual function” (see the second paragraph of the Explanatory Note to heading 85.43, on page 1518) :

“[. . .] devices which cannot perform their function unless they are mounted on another machine or appliance, or are incorporated in a more complex entity, provided that this function :

- (i) is distinct from that which is performed by the machine or appliance whereon they are to be mounted, or by the entity wherein they are to be incorporated, and
- (ii) does not play an integral and inseparable part in the operation of such machine, appliance or entity.”

10. The Secretariat believes that the cards meet the criteria set out in paragraph 9 above, i.e., (i) the storing of data is a function distinct from the function performed by any of the appliances referred to in paragraph 5 above, to which the card is to be connected, and (ii) the storing of data does not play a part in the actual function of the appliances. In this context, the Secretariat would like to recall that the following items were considered to be appliances having an individual function : (electronic) proximity cards or tags and certain “smart” cards (Item (14) and the last paragraph before exclusions of the Explanatory Note to heading 85.43, respectively).

### **Classification**

11. If the conclusion is followed that the cards are performing an individual function, the Secretariat feels that the following headings merit consideration : 84.71, 85.23, 85.42 and 85.43. The latter would only apply if none of the other headings were applicable.

#### Heading 84.71

12. This heading covers, among others, storage units for automatic data processing (ADP) machines, which meet the conditions set out in Note 5 (B) to Chapter 84, i.e., they should be :
- (a) Of a kind solely or principally used in an automatic data processing system;
  - (b) Connectable to the central processing unit either directly or through one or more other units; and
  - (c) Able to accept or deliver data in a form (codes or signals) which can be used by the system.
13. Since the cards at issue do not meet the condition of (a) above, the Secretariat considers that classification in heading 84.71 as “units for ADP machines” should be ruled out. Moreover, the data may not be in a form which can be used by the system.

---

<sup>1)</sup> Short for *Virtual File Allocation Table*, a virtual installable files system driver used in Windows for Workgroups and Windows 95. VFAT operates in protected mode and serves as an interface between applications and the File Allocation Table (FAT).

FAT, the file system used by DOS and 16-bit versions of Windows to manage files stored on hard disks, floppy disks, and other disk media. The file system takes its name from an on-disk data structure known as the *File Allocation Table*, which records where individual portions of each file are located on the disk.

Heading 85.23

14. This heading covers “prepared unrecorded media for sound recording or similar recording of other phenomena”. Based on the Secretariat's reading of the Explanatory Note of this heading, the products of this heading are “prepared”, i.e., they have undergone a physical treatment, such as coating or magnetising, and the data is transferred onto these media by physical means (magnetic reader, laser beam, etc.). Since the cards at issue have not been prepared and the data will not be transferred onto the cards by physical means, the Secretariat considers that classification in this heading should be ruled out as well.

Heading 85.42

15. Classification under heading 85.42 seems not appropriate, since the cards (i) do not meet the conditions of Note 5 (B) (b) to Chapter 85 (none of the composing elements has been produced by the thin- or thick-film technology) or (ii) are excluded by virtue of the last paragraph of the Explanatory Note to heading 85.42 on page 1517 (cards containing two or more integrated circuits).

Heading 85.43

16. Following the considerations given in the above paragraphs, classification in heading 85.43 of the cards at issue seems appropriate, as they do not answer the description of one of the other headings.
17. If, on the other hand, the cards are considered not to have an individual function, they should, in the view of the Secretariat, be regarded as parts of machines of Section XVI, the classification of which is laid down in Note 2 to that Section. Subparagraph (a) of that Note would not apply, as a consequence of the fact that the cards do not have the characteristics of any of the products covered by the headings listed. Since they are not suitable for use solely or principally with a particular kind of machine, as required by Note 2 (b) to Section XVI, classification in heading 85.48 seems appropriate.
18. In conclusion, the Secretariat would be inclined to consider flash electronic memory cards as described in paragraph 5 above, as electrical appliances having an individual function, classifiable in heading 85.43 (subheading 8543.89), since they do not answer to the description in any other heading of Section XVI. If, on the other hand, the cards at issue are considered not to have an individual function, classification in heading 85.48 (subheading 8548.90) seems appropriate.

III. CONCLUSION

19. The Committee is invited to examine the classification of articles known as “flash electronic storage cards”, as described in paragraph 5 above, taking into account the comments of the Secretariat in paragraphs 4 to 18 above, by considering the following questions :
- (i) Do the cards have an individual function; and
  - (ii) Do they answer to a description given in a heading other than heading 85.43.
20. The Committee is also invited to indicate what further action should be taken with regard to this matter.