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O. Eng.

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CLASSIFICATION OF FLASH ELECTRONIC STORAGE CARDS

(Item VIII.13 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)
NC0470E1 (HSC/28)
NC0502E1 (HSC/28)
NC0510E2, Annex G/8 (HSC/28 – Report)

I. BACKGROUND

1. At its 28th Session, the Committee, at the request of one delegate, again held a preliminary discussion on the possible classification of three types of flash electronic storage cards.

2. Two delegates explained that the articles satisfied the terms of heading 85.23 for "prepared unrecorded media", one of them noting that the "growth of transistors on a silicon layer" (which resulted in an integrated circuit) would fall within the meaning of the term "prepared". The function of the devices was to record and store data (phenomena).

3. Other delegates, while noting that the commodities at issue did not exist when the Harmonized System was being developed, expressed doubts as to whether these goods were indeed covered by the legal text of heading 85.23, on the assumption that they were not merely passive media given that they comprised a control unit permitting a type of active or "intelligent" recording. Under these circumstances, classification in heading 85.43 would be acceptable, although in the future it would be preferable to classify these articles in heading 85.23 or heading 85.24.

4. After further discussion, the Committee concluded that the classification of the devices at issue should be further discussed at the next session, requesting the Secretariat to prepare a new document, in which the descriptions of the devices should also include references to dimensions, capacities and, if possible, brand names. These descriptions would be based on those which appeared in paragraph 5 of Doc. NC0470E1. The Committee also concluded that heading 85.42 could be excluded from further consideration.

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II. NOTE BY IRAN

5. On 13 January 2002, the Secretariat received a note from the Customs Administration of the Islamic Republic of Iran, indicating that flash memory cards are units which serve to store data, similar to magnetic data, but having a digital kind of storing mechanism. That being the case, the cards are classifiable in heading 85.23, by application of General Interpretative Rule 1.

III. SECRETARIAT COMMENTS

Product information

6. Following the instructions of the Committee, the Secretariat has prepared the following descriptions of the products to be classified, based on the descriptions in paragraph 5 of Doc. NC0470E1.

(a) SanDisk – PC Card
Solid-state, non-volatile data storage device (known as a "flash memory card" or "flash electronic storage card"), having a storage capacity of 192 MB, consisting of a printed circuit board onto which are mounted (i) one flash memory ("FLASH E^2PROM") in the form of an integrated circuit, (ii) a microcontroller in the form of an integrated circuit, (iii) a number capacitors and resistors, and (iv) a connecting socket. The dimensions of the device are approximately 85 mm x 54 mm x 4 mm.
(b) SanDisk – CompactFlash
Solid-state, non-volatile data storage device (known as a "flash memory card" or "flash electronic storage card"), having a storage capacity of 192 MB, consisting of a printed circuit board (PCB) onto which are mounted one flash memory ("FLASH E²PROM") and a controller, in the form of integrated circuits, and passive elements, such as capacitors and resistors, with traces and through hole connections of copper, supplied with a connecting socket. The dimensions of the device are approximately 43 mm x 36 mm x 4 mm. 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.
(c) SanDisk – SmartMedia
Solid-state, non-volatile data storage device (known as a "flash memory card" or "flash electronic storage card"), having a storage capacity of 64 MB, consisting of a printed circuit board (PCB) onto which are mounted two flash memories ("FLASH E²PROM") in the form of integrated circuits, fitted with electrical flat surface contact points. The integrated circuits are 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. The dimensions of the device are approximately 45 mm x 37 mm x 2 mm.
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.

7. To facilitate the discussions in the Committee, the Secretariat has reproduced below paragraphs 6 to 18 of Doc. NC0470E1 (HSC/28). It is to be noted that the references to the Explanatory Notes in paragraphs 9 and 15 have been adapted in accordance with the HS 2002 edition. The paragraphs at issue, duly amended, read as follows :

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 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 (which 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[1)] 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 part (B) of the first paragraph of the Explanatory Note to heading 84.79 on page 1598 in connection with the first paragraph of the Explanatory Note to heading 85.43, on page 1702) :

"[. . .] 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).

[1)] 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.

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.

<u>Heading 84.71</u>

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.

<u>Heading 85.23</u>

14. This heading covers "prepared unrecorded media for sound recording or similar recording of other phenomena". The products of this heading are "prepared", i.e., they must have undergone a physical treatment, such as coating or magnetising. The data is being 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.

<u>Heading 85.42</u>

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 second paragraph of the Explanatory Note to heading 85.42 on page 1701 (cards containing two or more integrated circuits).

<u>Heading 85.43</u>

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."

8. With respect to the possible classification of the flash electronic storage cards in heading 85.23 as "prepared media", the Secretariat would like to offer the following comments, in particular as concerns the statement of one delegate that the "growth of transistors on a silicon layer" (which resulted in an integrated circuit) would fall within the meaning of the term "prepared" (see paragraph 2 of Annex G/8 of Doc. NC0510E2 (HSC/28 – Report)).

9. The Secretariat has some difficulty in following the above-mentioned reasoning, which might, carried to the extreme result in considering any integrated circuit being "prepared media". In this context, the Secretariat would like to remind the Committee that certain electronic memory modules, such as SIMMs and DIMMs, were classified by the Committee either in heading 84.73, or, if suitable for use solely or principally with other specific kinds of machines, in the heading referring to the parts of those machines, or in heading 85.48, as the case may be (see Annex G/15 of Doc. NC0510E2). Classification in heading 85.23 as "prepared recording media" was not considered by the Committee as an option.

10. To arrive at a considered conclusion, the Secretariat offers the following, simplified description of the production process of integrated circuits (IC), which are used in the flash electronic storage cards :

(i) After cleaning the silicon wafer, a thin film of silicon dioxide or aluminium is deposited on the wafer. This film is later chemically dissolved leaving only certain required parts which will be the IC circuits;

(ii) After the film deposition, the wafer is cleaned and a photosensitive chemical coating is applied to the wafer;

(iii) In the next step, the wafer is exposed to a light source, using a mask to create a circuit pattern;

(iv) The exposed regions of the circuit are dissolved, leaving the layer beneath the resist pattern as the circuit pattern;

(v) The part beneath the layer dissolved during the developing process, is etched with chemicals or ions (wet or dry etching), boron or arsenic ions are implanted and the remaining resist patterns are removed; and

(vi) The various steps are repeated a number of times, to create the layers necessary for the IC to function.

11. Having said this, the Secretariat leaves it to the Committee to decide (i) whether the above-referenced production method should be considered as "preparing" media for recording, and (ii) whether or not the storage of data in electrical form is "recording", as required for heading 85.23.

12. Finally, the Secretariat would like to remind delegations that the classification of flash electronic storage cards has been on the Committee's agenda since the 25th Session (March 2000).

IV. CONCLUSION

13. 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 observation received from Iran and the comments of the Secretariat above, when 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.

14. The Committee is also invited to indicate what further action should be taken with regard to this matter.