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O. Eng.

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CLASSIFICATION OF CERTAIN REPEATERS USED IN LAN SYSTEMS : RESERVATION BY THE US ADMINISTRATION

(Item VII.2 on Agenda)

Reference documents :

40.464 (HSC/18)
41.125 (HSC/19)
41.100, Annex H/8 (HSC/19 - Report)
41.309 (HSC/20)
41.684 (HSC/20)
41.600, Annex F/16 (HSC/20 - Report)
42.047 (HSC/21)
42.100, Annexes H/8 and IJ/17 (HSC/21 - Report)
42.449 (HSC/22)
42.750, Annex G/25 (HSC/22 - Report)
NC0049E1 (HSC/23)
NC0250E2, Annex H/3 (HSC/25 – Report)
NC0296E1 (HSC/26)
NC0340E2, Annex G/13 (HSC/26 – Report)

I. BACKGROUND

1. At its 26th Session, by 16 votes to 13, the Committee decided to classify four LAN repeaters outside of heading 84.71. The Committee agreed to classify the LAN repeaters in heading 85.43 by application of GIR 1 (Note 5 (B), introductory paragraph, and Note 5 (E) to Chapter 84), since the function of LAN repeaters was not regarded as data processing. The Committee then agreed upon classification in subheading 8543.89.

2. On 11 September 2001, the Secretariat received arguments from the US Administration in support of the reservation it had entered in respect of these decisions at the Harmonized System Committee's 26th Session. These arguments are reproduced below.

II. NOTE FROM THE UNITED STATES ON THE CLASSIFICATION OF LAN REPEATERS

3. "The US Administration entered a reservation to the decision of the Committee, taken at its 26th Session, on the classification of certain repeaters. The repeaters in question are solely used in an automatic data processing (ADP) system. They are distinct from repeaters used in telephone line systems or other transmission systems.

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4. Based on the factual information presented to the Committee in Doc. NC0296E1 (HSC/26), the US Administration concludes that these repeaters, designed for use in ADP systems, are classifiable in heading 84.71 as units of ADP machines because they satisfy the criteria set out in Note 5 (B) to Chapter 84. This conclusion is fully consistent with all of the HSC decisions on apparatus used in an ADP system : the Fast Ethernet Adapter (Annex H/2, NC0250E2, and Annex G/14, NC0340E2), the video and sound cards (Annex H/4, NC0250E2, and Annex G/15, NC0340E2), the LAN hubs, routers and optical fiber converters (Annex H/1, NC0250E2). All of these apparatus, whether used for signal conversion or in the transmission of data within an ADP system, were classified as units of ADP machines by the Harmonized System Committee.

Background

5. In paragraph 10 of Annex G/25 to Doc. 42.750 (Report of HSC/22, November 1998), the Committee, after examining the LE605A-R3 repeater, requested the Secretariat to make a detailed analysis of the types of repeaters used in a telephone line system and a LAN system. In NC0049E1, at paragraph 3, the Secretariat reported that examples of repeaters for telephone line systems were not readily available because they were usually made to order. No decision was taken at HSC/23 or HSC/24.

6. No new information was available at HSC/25, and the Committee, rather than rule on the one repeater, asked the Secretariat to obtain information on three repeaters (a fourth item was added at the request of the EC during the intersession). Finally, in Doc. NC0296E1 the Secretariat provided specific information from the manufacturer. The specifications and responses from the manufacturer were very clear and were set out in paragraphs 6 and 7 and Annex II of this document.

7. In paragraph 6 of NC0296E1 it was stated that “[t]he manufacturer confirmed information that was previously discussed by the Committee; that is, Local Area Network (LAN) repeaters are specifically designed to operate within a Local Area Network and use specific protocols and electrical characteristics unique to a LAN system and not acceptable in a telephonic line system. LAN repeaters transmit LAN data by regenerating and retiming the complete data signal. When a collision of signals is detected at either port of the repeater, LAN repeaters generate the signals (jam pattern) that are sent to inform the other workstations that they must not transmit data. In the event that a LAN repeater is used in a non-LAN-type application, the fuses would break, thereby causing an incomplete signal.”

8. The technical differences between LAN repeaters and telephone line repeaters were set out in a side-by-side comparison of the characteristics in Annex II of NC0296E1. This information was provided by Black Box Network Services (Brussels, Belgium), the manufacturer of the four repeaters under consideration.

9. In spite of the compelling information as to the technical and functional characteristics of distinguishing LAN repeaters from those used in telephone line systems, and in spite of the compelling fact that these LAN repeaters are solely used in ADP systems, the Committee decided by a vote of 16 to 13 that LAN repeaters were classified other than in heading 84.71. The Committee then agreed with the Secretariat that these could not be classified in heading 85.17 because they could not be used in telephone line systems. Therefore, it was agreed that they were classified in heading 85.43, a residual provision.

10. The US Administration entered a reservation to this decision because it was not consistent with the rationale and decisions taken by the Committee with regard to other LAN apparatus classified in heading 84.71 as units of ADP machines.

Description

11. The products consist of four LAN repeaters, Models LE605A-R3, LE624A, LE628A and LE630A and are described in Doc. NC0296E1 (HSC/26). The factual information, obtained from the manufacturer, has not been disputed. These facts, as summarized, are :

- specially designed for Local Area Networks (LANs)
- transmit LAN data by regenerating and retiming complete data signal
- generates “jam” or busy signal to prevent use of LAN by other workstations
- cannot be used in systems other than a LAN
- do not amplify
- permit distribution of data to multiple end points

12. The differences among the four LAN repeaters involve the number and type of line connections used in a LAN Ethernet system and the length of the segment or cable between repeaters or other units of the LAN. For example, the LE605A-R3 is a local repeater that connects LAN segments using a standard thick Ethernet cable (i.e., “AUI”) and a coaxial or “thin” Ethernet cable (i.e., “BNC”) having a maximum cable length of two meters. The LE624A is a local repeater that is designed for use with Ethernet systems using twisted pair copper wire (i.e., 10BASE-T) with a maximum cable length of 100 meters. The LE628A and LE630A are both remote LAN repeaters that are designed for use with Ethernet systems using fiber optic cables with maximum segment or cable lengths of two kilometers and ten kilometers, respectively.

13. As the manufacturer has stated, these LAN repeaters function only within a LAN. In fact, any attempt to use these LAN repeaters in a telephone line system, for example, would result in failure of the repeater or failure of the telephone system. In response to some delegates’ concern as to whether LAN repeaters and telephone line repeaters are distinguishable, the manufacturer has prepared a comparison of the technical characteristics of each. These are found in Annex II to NC0296E1. The characteristics applicable to LAN repeaters apply to all four of the repeaters in question.

Classification

14. The question for the Committee is whether these repeaters satisfy the terms of heading 84.71 and the criteria of Note 5 (B) to Chapter 84 so as to be classifiable in heading 84.71 as units of ADP machines. If they do, then they must be classified in heading 84.71.

15. First, the factual information makes it clear that these repeaters function solely within a LAN system to interconnect different segments or units in the LAN. They have no application as a “repeater” outside of a LAN. The design characteristics are specific to applications within ADP systems. As such, these repeaters could be considered prima facie “units” of ADP machines. Separately presented units of an ADP machine (i.e., which are part of a complete system) are to be classified in heading 84.71 (Note 5 (C) to Chapter 84).

16. In order to be classifiable as a unit of an ADP machine, the repeaters must satisfy the criteria set out in Note 5 (B) to Chapter 84. Note 5(B) requires the following :

(B) Automatic data processing machines may be in the form of systems consisting of a variable number of separate units. Subject to paragraph (E) below, a unit is to be regarded as being a part of a complete system if it meets all of the following conditions :

(a) It is of a kind solely or principally used in an automatic data processing system;

(b) It is connectable to the central processing unit either directly or through one or more other units; and

(c) It is able to accept or deliver data in a form (codes or signals) which can be used by the system.

The undisputed facts confirm that these repeaters (a) are of a kind solely used in an ADP system, (b) are connectable the CPU through other units on the system, and (c) are able to accept and deliver data in a form that can be used by the ADP system. These are the three criteria set out in subparagraphs (a) through (c) of the above legal note.

17. Note 5 (B) is subject, of course, to the exclusion set out in Note 5 (E), which provides as follows :

(E) Machines performing a specific function other than data processing and incorporating or working in conjunction with an automatic data processing machine are to be classified in the headings appropriate to their respective functions or, failing that, in residual headings.

18. The facts direct the conclusion that Note 5 (E) is inapplicable. In this case, the LAN repeaters have no specific function apart from the data processing function that is inherent in the ADP system. These repeaters are parts of the ADP system and are necessary to maintaining the integrity of the data information that is shared between the different units on the distributed ADP system (the LAN). For example, without the appropriate LAN repeater it would be impossible for an ADP machine on one side of a building to send a file within the LAN to another ADP machine on the other side of the building. If merely one part of the data transmission becomes corrupted, the entire transmission fails. If the data transmission collides with other transmissions, the data transmission fails. A LAN repeater, because it receives, measures, and rebuilds the form of each data packet, and because it detects traffic on the open system, is able to ensure that the data transmission will arrive fully intact and usable by the destination unit on the LAN.

19. A LAN repeater is not a CPU. It does not function, by itself, as a “freely programmable” machine defined in Note 5 (A). Nevertheless, it is a unit that comprises a part of an ADP system within the meaning of Note 5 (B). As such, it serves or enables the data processing function of that system. The repeater is not capable of performing any function without the assistance of the ADP machine and, most importantly, when connected to an ADP machine, it performs the very important data processing function of ensuring the accuracy of data transmissions and the unimpaired flow of data between the units on an ADP system.

20. We conclude, therefore, that LAN repeaters are classifiable as units of ADP machines pursuant to GIR 1 (the terms of heading 84.71 and Note 5 (B) to Chapter 84). Note 5 (E) is

not applicable and heading 85.43, therefore, is precluded. Furthermore, because the specific characteristics of these repeaters preclude any application in telephone line systems, they cannot be considered apparatus of digital telephone line systems of heading 85.17.

Conclusion

21. We urge the Committee to find that these LAN repeaters are (1) solely used in ADP systems, (2) are distinguishable from the type of repeaters used in telephone line systems, (3) do not perform a specific function other than a data processing function within the ADP system, and, therefore, (4) are properly classifiable in heading 84.71 as units of ADP machines."

III. CONCLUSION

22. The Committee is invited to rule on the classification of the four repeaters in question taking into account the comments from the US Administration in paragraphs 3 to 21 above.