



**9111-14**

**DEPARTMENT OF HOMELAND SECURITY**

**U.S. Customs and Border Protection**

**Notice of Issuance of Final Determination Concerning Certain Ethernet Switches, Routers and Network Cards**

**AGENCY:** U.S. Customs and Border Protection, Department of Homeland Security.

**ACTION:** Notice of final determination.

**SUMMARY:** This document provides notice that U.S. Customs and Border Protection (“CBP”) has issued a final determination concerning the country of origin of certain Ethernet switches, routers and network cards. Based upon the facts presented, CBP has concluded in the final determination that the United States is the country of origin of the Ethernet switches, routers and network cards for purposes of U.S. Government procurement.

**DATES:** The final determination was issued on January 29, 2019. A copy of the final determination is attached. Any party-at-interest, as defined in 19 CFR § 177.22(d), may seek judicial review of this final determination within [insert 30 days from date of publication in the Federal Register].

**FOR FURTHER INFORMATION CONTACT:** Tebsy Paul, Entry Process and Duty Refunds Branch, Regulations and Rulings, Office of Trade (202) 325-0195.

**SUPPLEMENTARY INFORMATION:** Notice is hereby given that on January 29, 2019, pursuant to subpart B of Part 177, U.S. Customs and Border Protection Regulations (19 CFR part 177, subpart B), CBP issued a final determination concerning the country of origin of certain Ethernet switches, routers and network cards, which may be offered to the U.S. Government

under an undesignated government procurement contract. This final determination, HQ H290670, was issued under procedures set forth at 19 CFR Part 177, subpart B, which implements Title III of the Trade Agreements Act of 1979, as amended (19 U.S.C. 2511-18). In the final determination, CBP concluded that, based upon the facts presented, the programming and downloading operations performed in the United States, using U.S.-origin software, substantially transform non-TAA country Ethernet switches, routers and network cards. Therefore, the country of origin of the Ethernet switches, routers and network cards is the United States for purposes of U.S. Government procurement.

Section 177.29, CBP Regulations (19 CFR 177.29), provides that a notice of final determination shall be published in the **Federal Register** within 60 days of the date the final determination is issued. Section 177.30, CBP Regulations (19 CFR 177.30), provides that any party-at-interest, as defined in 19 CFR 177.22(d), may seek judicial review of a final determination within 30 days of publication of such determination in the **Federal Register**.

Dated: January 29, 2019.

**Alice A. Kipel,**

*Executive Director,*

*Regulations and Rulings,*

*Office of Trade.*

HQ H290670

January 29, 2019

OT:RR:CTF:VS H290670 TP

CATEGORY: Origin

Mr. Stuart P. Seidel  
Baker & McKenzie, LLP  
815 Connecticut Ave., N.W.  
Washington, D.C. 20006-4078

RE: U.S. Government Procurement; Country of Origin; Ethernet Switches, Routers and Network Cards; Substantial Transformation

Dear Mr. Seidel:

This is in response to your letter dated September 20, 2017, requesting a final determination on behalf of ALE USA, Inc. (“ALE”) pursuant to subpart B of Part 177 of the U.S. Customs & Border Protection (“CBP”) Regulations (19 C.F.R. Part 177). This final determination concerns the country of origin of ALE’s Ethernet switches, routers and network cards. As a U.S. importer, ALE is a party-at-interest within the meaning of 19 C.F.R. § 177.22(d)(1) and is entitled to request this final determination.

Per your letter dated September 20, 2017, we have reviewed your request for confidentiality pursuant to 19 C.F.R. § 177.2(b)(7) with respect to certain information submitted. As that information constitutes privileged or confidential matters, it has been bracketed and will be deleted from any published versions.

**FACTS:**

ALE manufactures and imports a group of Ethernet switches, routers and network cards. The group of products consists of the following: OmniSwitch® OS6900-X72, OS6900-Q32, OS6900-C32, OS6900-CX72, OS6860/6860E family, OS 6560 family, OS 6450 family and OS 6865-U28X. You state that the hardware for these products was designed in Taiwan and manufactured in China. You state that the final programming of the EEPROM on the device and majority of the programming for the Alcatel Operating System (“AOS”) are completed and compiled in the United States and will be downloaded in the United States. You also account for the labor hours spent and the qualifications of the coders and developers who worked on developing, programming, and downloading the software in the United States.

You state that the assembly process is the same for all the products mentioned above. The metal fabrication consists of simple punching, bending and painting of sheet steel or aluminum metals to create the protective case. This occurs in Taiwan and takes approximately 20 minutes to complete. The remaining hardware assembly takes place in China. ALE states that the individual components of the hardware include resistors, capacitors, diodes, transistors, memory, application specific integrated circuits, memory modules, CPUs, printed circuit cards, and metal housings. ALE states that the countries of origin for these components are from various parts of Asia, including Singapore, Taiwan and China.

ALE describes the hardware assembly in China as follows:

1. The Surface Mount technology (“SMT”) installation involves the mounting of a preprogrammed [XXXXXX] program. SMT involves the mounting of electronic components directly on to the printed circuit board. The [XXXXXX] program is compiled codes that allows the CPU to have the necessary configurations to support computer function by using a set of commands. The [XXXXXX] program is required to boot the device so that it can load the ALE programs. However, the devices cannot function until the U.S.-developed and programmed software and EEPROM are loaded in the United States.
2. An in circuit test (“ICT”) is performed. This process allows for the ICT to program a complex programmable logic device (“CPLD”) image into the CPLD programmable application-specific integrated circuit (“ASIC”). The CPLDs are integrated circuits that are configured to implement digital hardware and by programming them into an ASIC, the integrated circuits can be suited for a specific purpose, rather than general-purpose use. In this case, the CPLD image contains code that allows the CPU to boot the device for testing. Additionally, the EEPROM is programmed with critical information that is retrieved from ALE’s servers.
3. The hardware undergoes mechanical assembly.
4. Installation of a diagnostic file to allow for thorough testing. The purpose of the software that is downloaded on to the hardware in China is to perform diagnostic testing to assure the circuit paths on the printed circuit board are made and function properly.
5. The hardware undergoes functional testing.
6. An environment stress screening (“ESS”) test is performed. This is considered a type of burn-in test to identify manufacturing quality issues.

7. The hardware is packaged.

ALE contends that the programming undertaken in China is to verify that the product has been manufactured correctly. Specifically, the partial tests ensure that the surface mounting of electronic components is complete. You state that at this point, the hardware is missing the majority of programming leaving it incapable of performing the necessary functions of Institute of Electrical and Electronics Engineers (“I.E.E.E.”) Ethernet router functionality; therefore the product enters the United States in a non-functional state. Additionally, you state that in the United States, the systems are unpacked and presented to ALE test executives for proper configuration and labeling through a U.S. secure server. The assembly process in the United States involves the following steps: (1) the EEPROM is re-programmed with valid, proper information originating solely from ALE USA’s propriety product Data Management tool; (2) the AOS is loaded onto an electronic storage medium; (3) final tests are conducted; (4) the product is packaged; (5) and quality control mechanisms are carried out which are validated to allow for release of the products to be shipped.

You state that the AOS software enables the OmniSwitch products to function as a switch/router. You assert that the AOS contains the specialized routing algorithms that transform merchant silicon into a functional OmniSwitch/Router and that, as stated above, the software was almost completely architected, developed, programmed and compiled in the United States. The EEPROM is also reprogrammed to incorporate product specific information allowing it to operate as a Layer 2, 3 and 6 device. You state that Layers 2, 3 and 6 refer to the layers that comprise an Open System Interconnection (“OSI”) networking model. You state that the layers are a controlled hierarchy where information is passed from one layer to the next creating a blueprint for how information is passed from physical electrical impulses to applications. The AOS is downloaded onto storage within the device. The software is compiled many times until a final version is approved. Quality checks occur to certify that the code is ready and manufacturing test engineers work with engineering personnel to test the AOS software.

**ISSUE:**

What is the country of origin of the Ethernet switches, routers and network cards for purposes of U.S. Government procurement?

**LAW AND ANALYSIS:**

CBP issues country of origin advisory rulings and final determinations as to whether an article is or would be a product of a designated country or instrumentality for the purposes of granting waivers of certain “Buy American” restrictions in U.S. law or practice for products offered for sale to the U.S. Government, pursuant to subpart B of Part 177, 19 C.F.R. § 177.21 *et seq.*, which implements Title III of the Trade Agreements Act of 1979, as amended (19 U.S.C. § 2511 *et seq.*).

Under the rule of origin set forth under 19 U.S.C. § 2518(4)(B):

An article is a product of a country or instrumentality only if (i) it is wholly the growth, product, or manufacture of that country or instrumentality, or (ii) in the case of an article which consists in whole or in part of materials from another country or instrumentality, it has been substantially transformed into a new and different article of commerce with a name, character, or use distinct from that of the article or articles from which it was so transformed.

*See also* 19 C.F.R. § 177.22(a).

In rendering final determinations for purposes of U.S. Government procurement, CBP applies the provisions of subpart B of Part 177 consistent with the Federal Acquisition Regulations. *See* 19 C.F.R. § 177.21. In this regard, CBP recognizes that the Federal Acquisition Regulations restrict the U.S. Government's purchase of products to U.S.-made or designated country end products for acquisitions subject to the Trade Agreements Act. *See* 48 C.F.R. § 25.403(c)(1). The Federal Acquisition Regulations define “U.S.-made end product” as “an article that is mined, produced, or manufactured in the United States or that is substantially transformed in the United States into a new and different article of commerce with a name, character, or use distinct from that of the article or articles from which it was transformed.” *See* 48 C.F.R. § 25.003.

In *Data General v. United States*, 4 C.I.T. 182 (1982), the court determined that the programming of a foreign Programmable Read-Only Memory chip (“PROM”) in the United States substantially transformed the PROM into a U.S. article. In the United States, the programming bestowed upon each integrated circuit its electronic function, that is, its “memory” which could be retrieved. A distinct physical change was effected in the PROM by the opening or closing of the fuses, depending on the method of programming. The essence of the article, its interconnections or stored memory, was established by programming. *See also, Texas Instruments v. United States*, 681 F.2d 778, 782 (CCPA 1982) (stating the substantial transformation issue is a “mixed question of technology and customs law”); HQ 735027, dated September 7, 1993 (programming blank media (EEPROM) with instructions that allow it to perform certain functions that prevent piracy of software constitutes a substantial transformation); and, HQ 734518, dated June 28, 1993 (motherboards are not substantially transformed by the implanting of the central processing unit on the board because, whereas in *Data General* use was being assigned to the PROM, the use of the motherboard had already been determined when the importer imported it).

CBP has examined the effect of downloading U.S.-developed software in previous decisions. For example, in HQ H258960, dated May 19, 2016, CBP considered the country of origin of network transceivers in two different scenarios. In Scenario One, the importer purchased “blank” transceivers from Asia. The transceivers were then loaded with U.S.-developed software in the United States, which made the transceivers functional. In Scenario

Two, the importer purchased the transceivers with a generic program preinstalled, which was then removed so that the U.S.-developed software could be installed. CBP held that, in Scenario One, because the transceivers could not function as network devices without the U.S.-developed software, the transceivers were substantially transformed as a result of the downloading of the U.S.-developed software performed in the United States. However, in Scenario Two, because the transceivers were already functional when imported, the identity of the transceivers was not changed by the downloading performed in the United States, and no substantial transformation occurred.

Similarly, in HQ H175415 dated October 4, 2011, CBP held that imported Ethernet switches underwent a substantial transformation after U.S.-origin software was downloaded onto the devices' flash memory in the United States, which allowed the devices to function. In China, the printed circuit board assemblies, chassis, top cover, power supply, and fan were assembled. Then, in the United States, U.S.-origin software, which gave the hardware the capability of functioning as local area network devices, was loaded onto the hardware. CBP noted that the U.S.-origin software "enables the imported switches to interact with other network switches" and that "[w]ithout this software, the imported devices could not function as Ethernet switches." Under these circumstances, CBP held that the country of origin of the local area network devices was the United States. *See also* HQ H052325, dated March 31, 2009 (holding that imported network devices underwent a substantial transformation in the United States after U.S.-origin software was downloaded onto the devices in the United States, which gave the devices their functionality); and HQ H034843, dated May 5, 2009 (holding that Chinese USB flash drives underwent a substantial transformation in Israel when Israeli-origin software was loaded onto the devices, which made the devices functional).

In this case, the hardware is imported from China in a fully assembled state. However, at the time of importation the devices are not functional because they lack the software needed to run. Here, unlike Scenario Two in HQ H258960, the programming that occurs in China is to perform diagnostic testing to assure the circuit paths on the printed circuit board are made and function properly. Furthermore, contrary to Scenario Two in HQ H258960, the identity of the switches changes after the U.S.-origin software is downloaded onto the switches. Moreover, as in HQ H175415, HQ H052325, and HQ H258960, it is only after the installation of U.S.-origin software that the devices obtain their essence and functionality as switches and routers. Without the U.S. proprietary software, the devices cannot function as a network device in any capacity. Here, the AOS is developed and downloaded in the United States. The development, configuration, and downloading of the AOS helps transform the essence of the products at issue from merchant silicon into fully functional network devices that are capable of performing the intended switching and routing functions. The devices at issue here derive their core functionality as switches and routers from the installation of the U.S.-developed software. The U.S.-developed software enables the system to interact with other network switches or routers through network switching and routing protocols, and allows for the management of functions such as network performance monitoring and security and access control.

Under these circumstances, and consistent with previous CBP rulings, we find that the country of origin of the final product is the United States, where the non-functional devices are substantially transformed as a result of downloading performed in the United States, with software developed in the United States. Furthermore, in the present case, the essence of the articles depends on the information technology found in the software, which allows the devices to communicate with other network switches or routers for their ultimate purpose. For country of origin determinations, it should be noted that the final determination differs based on each article's specific purpose, makeup, and applicable technology.

**HOLDING:**

The country of origin of the Ethernet switches, routers and network cards for purposes of U.S. Government procurement is the United States.

Notice of this final determination will be given in the Federal Register, as required by 19 C.F.R. § 177.29. Any party-at-interest other than the party which requested this final determination may request, pursuant to 19 C.F.R. § 177.31, that CBP reexamine the matter anew and issue a new final determination.

Pursuant to 19 C.F.R. § 177.30, any party-at-interest may, within 30 days of publication of the Federal Register Notice referenced above, seek judicial review of this final determination before the Court of International Trade.

Sincerely,

Alice A. Kipel, Executive Director  
Regulations and Rulings  
Office of Trade