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From: Arvikar, Ram <rarvikar@vectron.com>
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To: PublicComments
Subject: RIN 0694-AF64

Additional Comments from Vectron International Request to review and add crystals and crystal oscillator components to the proposed category 3A611.y

Sept. 5, 2013

Vectron had previously provided its comments (please see below)on the proposed rule describing the revision to items controlled on the USML Military Electronics (category XI). After additional review of the proposed changes Vectron would like to provide additional comments for consideration:

· It appears that the approach for simplification of the USML being used is that as each USML category is being revised and items that no longer warrant any control under ITAR, the items are being transferred to corresponding lists to be controlled by the CCL. Vectron believes that electronic components and assemblies provide " generic" function, and therefore if they are currently classified under a USML category based on the end-items where they may be used, when transferred to CCL this could result in the same type of component with same function being classified in multiple CCL categories. For example crystals and crystal oscillators which are frequency control devices, provide a generic clock/timing function and can be used in multiple USML categories based on the applications, such as:

o USML category IV: missile for the purpose of guidance (to allow location of the missile using a GPS system)

o USML Category VIII, aircraft for the purpose of avionics

o USML category XI: military electronics and military communications, military radios, radars for tracking purpose

o USML category XV: spacecrafts/satellites used in imaging, earth mapping, weather data and scientific/space celestial research where the images/photos/data being collected is being transmitted back

In all these applications crystals (both Bulk acoustic as well as Surface acoustic wave filters and resonators, and monolithic filters) and crystal oscillators provide two basic functions:

- "clocking" or "timing" of signals

- Transmission of signals where the oscillator or crystal provides a reference source frequency which is then manipulated (e.g. Multiplied or divided) and then subsequently transmitted such as from a missile or radar to GPS device to identify position, distance etc. and in military communications/radios.

Since crystals and oscillators thus provide a "generic" clock/timing function or a reference frequency source it may be better to classify these components in a single list , such as in the electronic components category on the CCL perhaps, with a ECCN of 3A611. It appears that this has already been done in some cases such as military computers (4A611), telecommunications (5A611) and acoustic systems, radars etc. (6A611) where these three list are simply "holding places" and they refer one back to 3A611 , the single category where such items used in these three applications will be listed. Vectron is requesting the ECR team to expand this scheme and include crystals and crystal oscillators in a single

category and not in the respective CCL lists/ECCN's associated with the other USML categories such as IV or XV from where items will be transferred from for decontrol. This would relieve the burden of classification and maintenance of multiple codes not only for Vectron but many companies that make electronic components with other functions but they all utilize the same function of that component irrespective of the multiple and diverse military applications

Further as commented previously, Vectron would like to see crystals (filters , resonators employing BAW and SAW technology) and oscillators listed under 3A611.y or EAR99. These products even if specially designed do not provide any military intelligence and capability, abut provide a generic function only and are available from multiple foreign sources. As technology in crystals and oscillator product has advanced in the past few years, it should be pointed out that commercial sector is driving the technology and product development resulting in smaller foot prints and low power devices in this product segment (all from foreign sources) while military applications still continue to use the older style product technology e.g. metal packaged oscillator and crystals. Military applications continue to benefit from the availability of such state-of the art components (e.g. 2mmx 2mm TCXO in a ceramic package or a SAW filter in a similar size) and a large portion of the foreign-sourced crystal and oscillator products offered by Vectron manufactured off-shore are widely used in many defense applications.

· There is a new class of oscillators utilizing MEMS technology (using conventional silicon foundry and fabrication technology) is being offered and Vectron has successfully marketed these products to military customers since these devices have shown capability to survive in rugged environment even though they were not designed for military applications and have for many years used in the commercial sectors (e.g. cell phone microphones). Vectron would like to request that this product technology be acknowledged and listed in the CCL, perhaps in the EAR99 category.

· While Vectron applauds the effort made by both State and Commerce in coming up with a unified definition of "specially designed", there is certain to be much debate over what this means. Undoubtedly, as everyone recognizes, this will be a key to classification of the product whether on the USML or on the CCL. Vectron understands that State and Commerce had to meet the targeted milestones in the ECR map and had to define and publish a workable solution despite the extensive, widely disparate and divergent opinions expressed by numerous parties on this subject. The catch and release scheme seems like a great compromise but only time will tell if it is as bright as the revisions that have taken place on both lists. The choice of the word "equivalent" when referring to form in the b(3) release note is still obfuscatory. Vectron makes oscillators (such as VCXO, TCXO, OCXO) and they all provide the same function (of an output clock signal with different precision levels) whether the product is designed and used for military application or commercial sector. A commercial TCXOs in a 2x2 mm ceramic package footprint for example provide the same function as one in an older style larger through-hole metal can package, the only difference being the form. Many precision OCXOs that Vectron has designed for military customers provide the same function as that for commercial applications but the military applications require modification to the form due to the manner in which the item may be installed in their specific application, that may fail the current "equivalent" form test in the par. b(3) release. Vectron would like to see any reference to form/fit removed in the release clause b(3) and simply change it to "having same function or capability".

Thank you for providing us with the opportunity to provide our input to the ECR initiative.

Ram Arvikar

Dir. Global Quality & Compliance

Vectron international

From: Arvikar, Ram
Sent: Saturday, December 22, 2012 6:18 PM
To: 'publiccomments@bis.doc.gov'
Subject: RIN 0694-0045

Request to review and add crystals and crystal oscillator components to the proposed category 3A611.y

Vectron International (http:// www.vectron.com) is a leading manufacturer of crystals and crystal-based oscillators for use in commercial telecommunications applications as well as in defense articles. These components are used primarily as timing devices in diverse range of applications in both military and defense applications. When used in defense applications these components utilize the same circuit design and manufacturing process as those used for telecommunications markets but may undergo additional testing and screening because of the higher levels of robustness (e.g. in order to survive higher levels of shock and vibration) and reliability requirements.

Since oscillators are generally not explicitly identified as ITAR controlled components when associated with defense articles in any category on the USML, a clear determination as to their status, whether ITAR-controlled or EAR-controlled, is always in doubt. Vectron has previously applied and received Commodity Jurisdiction rulings that have ruled some oscillators as controlled under EAR (e.g. oscillators listed on the QPL under M55310 designations, fixed-frequency oscillators intended for space applications). On the commerce CCL side, references to crystal oscillator are few. Oscillators which typically utilize bulk acoustic and surface acoustic wave devices, can be classified based on certain special characteristics such as frequency (3A001.c.1: Surface acoustic wave devices exceeding 6 GHz or 3A001.c.2: bulk acoustic wave devices exceeding 6GHz) and low phase noise threshold as per 3A001.b(10), but generally many other types of oscillators are not listed as controlled on the CCL. Oscillators are commercially available from a variety of sources both in the U.S. and from many foreign sources in China, Taiwan, Korea, Japan, Russia, New Zealand to name a few. Vectron regularly imports and sells “COTS” oscillators made by off-shore suppliers to many defense customers.

In response to the Proposed rule RIN 0694-AF6, Vectron would like to propose that crystals and crystal oscillators used as components in articles enumerated under Category XI Military Electronics, be explicitly listed in the category 3A611.y. Vectron has designed and supplied oscillators for use in military radars and radios but as previously mentioned these components use the same design as those designed for commercial telecomm applications as frequency control devices. Since several other types of electronic devices such as MMIC and microwave transistors are being proposed to be listed in the Category 3A611.a and 3A611.b and in 3A611.y, Vectron believes inclusion of crystals and crystal oscillator in the proposed category would go a long way in clarifying the jurisdiction status of these commodities.

Vectron supports and is encouraged by the progress made to date under the Export Control Reform Initiative and the work that has been accomplished to establish a clear “bright line” demarcation between items that are commercial, and sensitive items that should be controlled for national security reasons.

Vectron would be pleased to provide any additional information or data required in support of our proposal (Ram Arvikar, Tel: 603-577-6860, rarvikar@vectron.com)

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