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Ms. Eileen Albanese  
Director, Office of National Security and Technology Transfer Controls  
Bureau of Industry and Security (BIS)  
US Department of Commerce  
Room 2099B  
1401 Constitution Ave, NW  
Washington, DC 20230

**RE: Comments on 87 Fed. Reg. 62186 (Oct. 13, 2022), 87 Fed. Reg. 74966 (Dec. 7, 2022); RIN 0694-AI94; Docket No. 220930-0204**

Dear Ms. Albanese:

As requested, Teradyne, Inc. (Teradyne) submits comments on the above-captioned rule (the "October 7 Rule"). Our main comment is that our products are exclusively for backend testing of already-produced semiconductors. The frontend-focused policy objectives of the semiconductor-related portions of the October 7 Rule are thus not intended to impose controls over our exclusively backend products. They, however, do. The apparently unintended impact of the new controls over our backend products is significant because the October 7 Rule is unilateral. Our customers are, as a result, purchasing foreign-made products that are not subject to any export controls rather than Teradyne products.

Moreover, the media reports of possible controls to be imposed by the governments of Japan and the Netherlands appear only to apply to frontend tools, and thus, not apply to any products that we make. Thus, with respect to our types of backend testing products, the October 7 Rule is both (i) ineffective because it is not stopping the export of such products (other than ours) and (ii) counterproductive because it and other unilateral export controls are causing a significant transfer of our market to our foreign competition. It's that simple.

To fix each of these and related issues, and thus make the October 7 Rule more effective and less counterproductive for backend testing products, we make several comments and requests below. The requests, if granted, would improve the policy objectives of the Export Administration Regulations (EAR) and would level the playing field for Teradyne.



## **I. Description of Teradyne**

Teradyne is a US automation solutions company based in North Reading, Massachusetts [NASDAQ: TER]. It employs 1,870 employees in the United States and has operations around the world. Teradyne was created 60 years ago with the vision of creating systems to automate manual testing of electronics to improve accuracy and repeatability, and to lower costs for our customers. Our Automated Test Equipment (ATE) is used to test semiconductors, wireless products, and data storage and complex systems for general consumer, communications, industrial, and government customers. See [teradyne.com](http://teradyne.com). This comment is also written on behalf of LitePoint, a Teradyne subsidiary. See <https://litepoint.com>. LitePoint is a manufacturer and provider of wireless test equipment used for design verification and high-volume manufacturing test of products that have wireless capability, such as cell phones, laptops, tablets, access points, small cells, and IoT devices.

## **II. The Types of ATE and Other Backend Test Equipment at Issue Are Controlled by the US Alone And Are Not Sensitive**

The Teradyne and LitePoint test equipment, software, and technology at issue are controlled under ECCNs 3A992, 3B992, 3D991, 3E991, 5B991, 5D991, or 5E991, or are otherwise classified as EAR99. Our foreign-origin products at issue are the direct product of US-origin 3E991 technology. Comparable products made by our competitors in Japan, EU countries, and other countries are, therefore, not subject to export controls of any sort. In addition, our test equipment products:

- have nothing to do with developing or manufacturing semiconductors at advanced (or any particular) feature sizes;
- are not relevant to the development of any semiconductors because, by the time products are tested with our ATE, the semiconductors are already developed and manufactured;
- do not provide test results that affect the additive or subtractive manufacturing steps needed to manufacture a wafer or semiconductor into its final form, fit, function, and performance capabilities;
- are only used *after* the manufacturing has produced the internal circuitry and pattern of the semiconductor;
- have no technology or characteristics specific to developing or producing items with 5G, cloud, satellite, military, or other characteristics of policy concern; and
- have nothing to do with producing items designed for use in AI or supercomputer applications.

The technical capability of our test equipment is mature and available in other countries or based on open-source information. Our technological capabilities are, of course, excellent, but the primary way we compete and remain an economically successful US company is with respect to issues not within the scope of the EAR – namely, innovative systems engineering, quality service,



price (primarily through economies of scale), and reliability.

We realize that the EAR's definition of "production," when applied literally, includes the word "testing." This literal application with respect to the October 7 Rule and other unilateral controls, however, has unintended and counterproductive policy and licensing implications for backend testing products such as ours. That is, our (and our competitors') test equipment products provide no advantage to the development or production of any of the types of items or activities the US Government has said it is concerned about in the October 7 Rule. In addition, we have no indication and have not otherwise been informed that our products are in any way implicated in activities of human rights concern to the United States or any other country or group. The imposition of unilateral US export controls on any of the Teradyne products has absolutely no impact on the ability of non-US companies to develop comparable technologies or commodities from such technologies, including in China. This is not a theoretical or speculative comment. In the years that the unilateral US controls have been in effect, we have observed an acceleration, rather than a slowing, of semiconductor technology development in China. Our estimate of the negative economic impact on Teradyne of the series of unilateral controls is described in more detail below in the business confidential portions of this comment.

The following are comments and specific requests for how to address the apparently unintended impacts of the October 7 Rule and other unilateral controls without harming the policy objectives of the EAR.

### **III. Sections 744.23(a)(1)(iii) and (iv) and (a)(2)(iii) and (iv), and 744.6(c)(2) Should Carve-Out from their Scope Items that are Exclusively for Use in Backend Activities**

These new sections impose licensing obligations over the export and reexport of our post-production test equipment, whether subject to the EAR or not, if they would be for use in the "production" of semiconductors "at" a covered fabrication facility. This location-specific control makes no policy sense with respect to our types of post-production test equipment. Our products have absolutely nothing to do with the development or creation of what gives the types of advanced node semiconductors the characteristics of concern described in sections (iii)(A), (B), or (C), such as having feature sizes smaller than 16 nm or less if for logic integrated circuits. Controlling the items for use in the frontend of the semiconductor development and production process that enable the indigenous development or production in China of such advanced node integrated circuits is indeed the policy purpose of the October 7 Rule, as BIS explained in the preamble.<sup>1</sup> Moreover, BIS has made it clear in its FAQs that the goal of the October 7 Rule was not to affect backend development or production that occurs in Outsourced Semiconductor Assembly and Test (OSAT) facilities.<sup>2</sup> Our products inadvertently get caught up on the new controls because (i) the word "production" includes the word "testing," and (ii) the control is a location-based control rather than one focused on the application of an item.

Moreover, it makes no policy sense that the controls would apply to our exports and reexports to

<sup>1</sup> 87 Fed. Reg. 62,186 (Oct. 13, 2022).

<sup>2</sup> See II.Q1 and II.A1 at BIS's October 28, 2022 FAQs, which are at: <https://www.bis.doc.gov/index.php/documents/product-guidance/3181-2022-10-28-bis-faqs-advanced-computing-and-semiconductor-manufacturing-items-rule-2/file>



customers using our post-production tools *at* a covered facility but not apply to the testing of exactly the same integrated circuits at a separate building *outside* the covered facility. Some customers use our tools inside a covered facility for the same post-production testing that other customers use outside a covered facility. We assume that BIS created the location-specific aspect of these sections to address possible diversions of items for use in developing or producing advanced node semiconductors. We are not objecting with this policy concern and approach, but it makes no sense with respect to tools that are exclusively for backend testing activities, such as ours. Regardless of the building in which they are used, our products have no ability to affect the policy objective on which this part of the October 7 Rule is focused – stopping the flow of items needed for the indigenous development and production in China of the items necessary to develop or produce advanced node semiconductors. The October 7 Rule makes sense for frontend equipment, software, and technology that could actually have an impact on such frontend development and production, but not for our testers.

**Request 1: For the foregoing reasons, BIS should add a note to sections 744.23 and 744.6 stating that sections 744.23(a)(1)(iii), (iv); 744.23(a)(2)(iii), (iv); and 744.6(c)(2) do not apply to (i) items described in ECCN 3A992.a or 3B992.b.4, and EAR99 items; and (ii) other items related to semiconductor testing equipment that are exclusively for use in testing semiconductors after they have been manufactured and that have no ability to influence the feature size or other characteristics of the referenced advanced node semiconductors.**

#### **IV. Sections 744.23(a)(1)(v) and (a)(2)(v) Should Also Carve Out from Their Scope Items that are Exclusively for Backend Activities**

These sections impose controls over the export of our backend testing products, which are controlled in ECCN 3B992.b.4.b, and related EAR99 items, to China, if for use in developing or producing other 3B992.b.4.b items. We believe that capturing the export of backend testing equipment is an unintended impact of the October 7 Rule for the reasons described above. For the same reasons, we believe that capturing the export to China of items subject to the EAR for use in producing items described in ECCN 3B992.b.4.b, in particular, is an unintended impact of the October 7 Rule.

These controls also have far bigger and even more unintended impacts on all our US suppliers of parts and components that ship items to China for use in producing our 3B992.b.4.b items. Teradyne has dozens of suppliers that ship largely EAR99 items for use in producing our 3B992.b.4.b testers in China. Thus, the licensing impact is not just on us. BIS has acknowledged that the impact on the dozens of our domestic suppliers – and on the suppliers of our suppliers – was unintended and issued a temporary authorization allowing all our suppliers and partners to continue shipping items that required a license only as a result of the October 7 Rule. These are all companies that are not historically subject to any export controls, and thus, have no experience in licensing. Imposing a licensing requirement on them for exports that are not within the scope of the October 7 Rule’s policy objectives makes no sense.

Our reference to controls on exports by “suppliers of our suppliers” is not a rhetorical point. The way the control is written, unless BIS states otherwise, is that if a supplier exports an item knowing it is for an item that is for an item that is for an item, etc., that is for the development or production in China (or Macau) of a Category 3B item, then the original export – even though many layers



early in the supply chain – is caught by the October 7 Rule. Thus, the impact on exporters that are component suppliers is exponentially larger than just on companies that ship items directly to such developers or producers in China (or Macau).

**Request 2: For the foregoing reasons, we ask that a note be added to section 744.23 stating that sections 744.23(a)(1)(v) and 744.23(a)(2)(v) do not apply to the export, reexport, or transfer of items for use in the development or production in China of items described in 3B992.b.4.b.**

**Request 3: If Request 2 cannot be granted, then an alternative request would be for BIS to carve-out from the licensing obligations in the same sections exports, reexports, and transfers for use, directly or indirectly, in developing or producing 3B992.b.4.b items for use (i) by US and other non-Chinese companies; (ii) for later shipment to non-embargoed countries outside of China; or (iii) by Teradyne to export technology as required to collaborate with customers in the development of device interface boards (DIBs) which connect the customers' device to Teradyne's ATE.** The apparent purpose of this part of the October 7 Rule is to limit the ability of Chinese companies in China to develop and produce the frontend and other types of items necessary to give semiconductors their advanced node characteristics, as defined in section 744.23(a)(2)(iii)(A), (B), and (C). If the export, reexport, or transfer at issue is for the benefit of a US or other non-Chinese company, or a product to be shipped outside of China, then there is no policy benefit to the control – just an unintended impact. (We explicitly added in the phrase “directly or indirectly” so that original component suppliers many layers back in the supply chain would benefit from the same carve-out.)

**Request 4: If Request 3 cannot be granted, then an alternative request for BIS is to issue a temporary general license to allow such exports, reexports, and transfer (i.e., for the benefit of US companies and other non-Chinese companies, or for shipments of items out of China) for 12 months, which is the time we need to find alternative partners outside of China.** BIS created in the October 7 Rule such temporary licenses for GPUs to be shipped out of China. We merely ask with this request for the same treatment the GPU companies received and for exactly the same reasons.

**V. BIS Should Temporarily Exempt from Unilateral Controls Items Described in ECCNs 3A992, 3B992, 3D991, 3E991, 5B991, 5D991, and 5E991 and EAR99 Items If Exclusively for Use in Backend Testing of Semiconductors Until the Controls Are Made Plurilateral**

The issue is painfully simple. Our products are subject to multiple unilateral controls. The comparable products of our direct foreign competitors are not. Unlike frontend tools, our backend testing products can be replaced by similar products made by our foreign competitors without impact to the customers' ability to produce semiconductors. Moreover, the foreign direct product rules in most of section 734.9 use our tools as the extraterritorial hook to “taint” foreign-made, non-sensitive integrated circuits within the jurisdiction of the EAR. If our foreign customers swap out our tools for our foreign competitors' tools, then their foreign-made products are not “tainted” by extraterritorial US export control limitations.

We have described this issue and the foreign availability many times to BIS in past comments to





no avail and with no relief. We have named in the business confidential section of this comment the specific foreign competitors that make and sell substitutes for our products.

We are aware of media reports that the US Government has come to an agreement with the governments of Japan and the Netherlands to impose plurilateral controls against China – but only with respect to frontend equipment. There was absolutely no discussion with the allies about leveling the playing field with respect to backend test equipment companies such as Teradyne. As a result, the various EAR controls in section 734.9 and the October 7 Rule are literally (i) completely ineffective (because China gets the same items) and (ii) completely counterproductive for US companies (because our competitors sell items we used to sell).

**Request 5: The US Government should work with the allies to develop comparable plurilateral controls to level the playing field for US suppliers of backend items if the controls on backend items are to be truly effective and not counterproductive.**

**Request 6: BIS should temporarily exempt from unilateral controls items described in ECCNs 3A992, 3B992, 3D991, 3E991, 5B991, 5D991, and 5E991 and EAR99 items if exclusively for use in backend testing of semiconductors until the controls are made plurilateral.**

**Request 7: If granting Request 5 is not possible, an alternative that would address the jurisdictional “taint” issue would be to add a “note” to EAR sections 734.9(e)(1)(i)(B) and 734.9(e)(2)(i)(B) that the phrase “produced by” does not apply to backend activities associated with semiconductors after the feature sizes and other essential characteristics are already fixed.** Granting this request would level the playing field with our competitors because it would make clear that the use of our products – which, again, are exclusively for use in backend testing of already-created semiconductors – does not “taint” our customers’ foreign-made products that are not otherwise controlled.

Such a change would address a vastly larger impact of the unilateral US controls affecting our products, which is the psychological impact of US extraterritorial controls and the uncertainty about how they will be applied in the future. That is, our issue with unilateral US export controls is not limited to identifying and remedying specific situations involving a particular lost sale to a particular customer where a competing product can be identified on a website so that its technical characteristics can be compared. The vastly bigger point is that the unilateral controls the United States keeps imposing – and the vast uncertainty about how unilateral controls will be expanded in the future – has had, and will continue to have, significant business and psychological impacts on our foreign customers’ decision-making about whether to purchase test equipment from Teradyne or any US company.

As with any business, our foreign customers need to have confidence that they will be able to obtain a steady supply of the products (and related services and spare parts) they need to conduct their business. As the US continues to break the traditional role and expectations of export controls and apply unilateral controls in extraterritorial ways to foreign parties that cannot be predicted, the logical reaction of foreign buyers is to design out and avoid US-origin content in favor of foreign-made substitutes not subject to US controls. Moreover, our foreign competitors leverage the regulatory uncertainty of US export controls as part of their marketing sales pitches



to gain advantage over Teradyne in test equipment markets.

We are not with this letter opposing sanctions against Russia or any other country or company. Our point is that if our customers outside the US start seeing that the foreign-produced direct product rule is becoming a go-to sanctions tool for the United States, they will accelerate their current efforts to substitute foreign-origin test equipment for our US-origin test equipment even for sales to other countries and entities. This would be done to reduce the risk that their foreign-made products tested with our products would be tainted by US extraterritorial and unilateral export controls that might be imposed one day in the future.

**VI. Sections 744.6(c)(2), 744.23(a)(2)(iii), (a)(2)(iv), and (a)(2)(v) Do Not Prohibit Non-US Persons Working for Non-US Companies Outside the United States from Providing Support for, or Exports for, the Development or Production in China of Advanced Node Semiconductors**

Even if item-specific controls over products such as ours were adopted by the governments of Japan, the Netherlands, and other allies, the controls will still be largely ineffective unless the allies adopt similar *end use* controls to those in new EAR sections 744.6(c)(2) and 744.23(a)(2)(iii), (iv), and (v). Without the allies adopting controls similar to those in 744.6(c)(2), engineers and others who are not US persons working for non-US companies will be able to (unlike US persons and US companies) service and otherwise support without an export license the development or production of integrated circuits at facilities in China that develop or produce covered advanced node semiconductors – even if the testing work is unrelated to creating advanced node semiconductors. In addition, without the allies adopting controls similar to those in section 744.23(a)(2)(iii), (iv), and (v), such non-US persons and companies will be able to (unlike US persons and US companies) export to China without a license from their countries otherwise uncontrolled commodities, software, and technology that Teradyne could not. It is absolutely not the case that any eventual successful plurilateral adoption of controls on lists of specific frontend tools will make allied harmonization on *end use* controls unnecessary, particularly with respect to our backend products.

**Request 8: The US Government should do everything possible to convince the allied governments to adopt their own form of “is informed” *end use* controls over their citizens and countries for the same end uses. If such efforts are unsuccessful within the next few months, BIS should adopt a temporary licensing policy that would authorize the provision of such services and exports by US persons for civil applications and if not otherwise prohibited by the EAR.**

The Government of the Netherlands has implemented in its export control laws catch-all and “is informed” authorities (which are the bases for BIS’s 744.6 and 744.23 controls) in Articles 2(1) and 3(1) of its Strategic Services Act (*Wet Strategische diensten*). The Government of Japan has implemented similar catch-all and “is informed” authorities in its export control laws and regulations through a combination of provisions, namely those in Articles 25(1) and (3) and 48(1) of the [Foreign Exchange and Foreign Trade Act](#) (“FEFTA”); Article 9(2)(vi) and (vii) of the [Ministerial Order on Invisible Trade Connected with Visible Trade](#) (MITI Order No. 8 of 1998, as amended); and Article 4(1)(iv) of the [Export Trade Control Order](#) (Cabinet Order No. 378 of 1949, as amended).



In light of the existence of Dutch, Japanese, and other allied laws and comparable authorities, the US Government should continue to do everything it can to convince the allies to use their own authorities to impose the comparable controls on their citizens, companies, and exports for the same reasons BIS imposed controls under sections 744.6(c)(2) and 744.23(a)(2)(iii), (iv), and (v). The only way for BIS's WMD-related policy objectives to be effective is for the allies to impose the same controls over their citizens and exports. The services and items affected by the new sections 744.6(c)(2) and 744.23(a)(2)(iii), (iv), and (v) controls are, by definition, not specific to any particular type of advanced node semiconductor widely available outside the United States. Indeed, section 744.6(c)(2) applies exclusively to movement of foreign-made items that are not subject to the EAR or any other country's lists of export-controlled items.

If the US Government is not successful at convincing the relevant allies to impose similar end use controls in the next few months, BIS should create temporary licensing policies that would allow for the export of otherwise non-sensitive items and services caught by the October 7 Rule that are not specific to advanced node development or production and that are of a type available outside the United States, such as our 3A992 and 3B992 backend production equipment. In this way, the United States could reduce part of the unintended consequences of October 7 Rule, which creates structural incentives for foreign competitors to export items that US companies cannot.

Our request is made not just on the basis for the need to get plurilateral harmonization on controls for the sake of effectiveness – it is also a statutory requirement. Specifically, Congress codified BIS's authority to impose end use controls in section 4812(a) of the Export Control Reform Act of 2018 (ECRA) by stating that, in order to carry out the policies of ECRA, “the President shall control- (1) the export, reexport, and in-country transfer of items subject to the jurisdiction of the United States, whether by United States persons or by foreign persons; and (2) the activities of United States persons, wherever located, relating to specific- (A) nuclear explosive devices; (B) missiles; (C) chemical or biological weapons; (D) whole plants for chemical weapons precursors; (E) foreign maritime nuclear projects; and (F) foreign military intelligence services.”<sup>3</sup> **The next ECRA section, section 4812(b)(3), explicitly requires the President, when exercising such end use authorities, to “seek to secure the cooperation of other governments and multilateral organizations to impose control systems that are consistent, to the extent possible, with the controls imposed under subsection (a).”**

The very next ECRA paragraph, section 4812(b)(4), specifically requires the President, when using these end use controls, to “maintain the leadership of the United States in science, engineering, technology research and development, manufacturing, and foundational technology that is essential to innovation.”<sup>4</sup> We have described above in detail that the unilateral controls are literally handing our business over to our foreign competitors, which are not subject to any export controls. Because they will receive the income from sales that we will not as a result of these unilateral rules, we are now and will continue to lose our leadership in the very words set out in ECRA – engineering, technology research and development, and manufacturing that essential to our innovating new products.

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<sup>3</sup> 50 USC § 4812(a).

<sup>4</sup> 50 USC § 4812(b)(4).





## VII. **Semiconductor Automated Test Equipment (ATE) Should be Considered “Use” Equipment Rather than “Production” Equipment**

**Request 9: We ask BIS to confirm in its response to the comments that semiconductor ATE are, for purposes of the controls at issue in sections 734.9(e), 744.6(c)(2), and 744.23, “use” equipment and not “production” equipment, as these terms are defined in the EAR.**

As you know, the EAR define “use” as meaning the “operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing.” Our ATE is used to “check” already-produced items. As described above, our ATE are not part of the semiconductor production process that is the policy concern that BIS is seeking to address in implementing the controls in sections 734.9(e), 744.6(c)(2), or 744.23 because ATE:

1. is used *after* the finished wafer is produced (to provide testing during the wafer probe stage) or after the finished integrated circuit is produced;
2. does not provide test results that affect the additive or subtractive manufacturing steps that were needed to manufacture the wafer or semiconductor into its final form, fit, function, and performance capabilities;
3. is only used *after* the manufacturing has produced the internal circuitry and pattern of the semiconductor; and
4. is not necessary for testing manufactured semiconductors because there are many alternative ways in which to test a semiconductor not using ATE equipment.

Moreover, any semiconductor would function exactly the same way after shipment and incorporation into a product even if it were not tested with an ATE.

As BIS may know, within a typical semiconductor manufacturing plant there are multiple examples of equipment that are described as test equipment. In a broad sense, there are two primary categories of semiconductor test equipment:

1. **Semiconductor fabrication processing test equipment**, which provides measurements for process control parameters and to ensure that the actual Chemical Vapor Deposition (CVD), Physical Vapor Deposition (PVD), lithography, and other pieces of equipment and additive manufacturing processes work as required to produce the semiconductor; and
2. **Semiconductor screening test equipment**, which provides measurements used to establish if individual manufactured devices satisfy quality requirements and can be shipped. Screening test equipment is used to test both (i) finished wafers produced by a fab that have not yet been assembled and packaged into finished integrated circuits and (ii) the finished integrated circuits themselves.

Semiconductor fabrication processing test equipment is necessary to the proper operation of a semiconductor fabrication plant. Without process control measurements in place by fabrication



processing test equipment, there may be no viable semiconductors produced in a practical sense, as the fabrication equipment cannot effectively operate without sensory information and feedback. Such equipment includes:

1. In situ process and monitoring tools, such as wafer geometry metrology and test systems that provide process control verification and feedback;
2. Flow ration test, measurement, and control tools for thin film deposition (these tools can measure gas pressure, chemical flow rates, and chemical concentration levels); and
3. Gas composition test and measurement monitors for PVD & CVD deposition processes.

All these semiconductor fabrication processing tools are, by any definition, essential elements used during and in the middle of the fabrication process and are required to produce a viable semiconductor. These types of tools, however, are not the subject of this comment nor are they the types of tools Teradyne manufactures.

Semiconductor screening test equipment – the ATE equipment at issue in this comment – is not essential or even relevant to producing a viable semiconductor because such equipment is only used *after* the finished wafer is produced (to provide testing during the wafer probe stage) or after the finished integrated circuit is produced. That is, our semiconductor ATE falls under the second category of semiconductor test equipment – semiconductor screening test equipment.

Companies use Teradyne's semiconductor ATE for production quality control of semiconductors used in a variety of industrial and consumer products, such as cell phones, set top boxes, multimedia interconnections, and laptops. Our semiconductor ATE is used to test the quality of the semiconductors through a series of functional and parametric tests on each semiconductor device shipped. The equipment includes instrumentation that provides an electrical stimulus to a device under test and measures the device's response. A comparison of the response to the expected response of a properly working device is used to determine whether the semiconductor device is good or cannot ship due to failures. This process is typically conducted by the OSAT after either (i) receipt of the finished wafer (to provide testing during the wafer probe stage to avoid packaging a device that has failed) or (ii) after the assembly and packaging of the die into a finished integrated circuit (to conduct a final test).

As a general matter, Teradyne semiconductor test equipment becomes relevant after a product is designed, although a fab could use ATE to test wafer prototypes or pilot production wafers during the development stage. Again, however, such wafers would be in a finished state. Other tools would be essential to get the semiconductor to its final state. Thus, while the Teradyne semiconductor test equipment may be used to take measurements of semiconductor devices after initial manufacturing for prototype or pilot production testing, the equipment is primarily used when the customer's product moves into volume production. Such types of activities more precisely fall within the scope of the EAR's definition of "use" rather than "production," and we ask BIS to confirm this determination.



**The information on pages 11 through 18 are redacted because they contain and consistent of business confidential information**



### **Conclusion – Public**

For the reasons set forth above, we respectfully ask BIS to grant the requests listed above. If you have any additional questions or would like to discuss these comments further, please contact me at 978-370-1189.

Sincerely yours,

*Charles Gray* (electronic signature)

Charles Gray  
VP, General Counsel, Secretary