

DEPARTMENT OF COMMERCE

Bureau of Industry and Security

15 CFR Part 774

[Docket No. 180212164-9483-01]

RIN 0694-AH53

Expansion of Export, Reexport, and Transfer (In-Country) Controls for Military End Use or Military End Users in the People's Republic of China, Russia, or Venezuela; Correction

AGENCY: Bureau of Industry and Security, Commerce.

ACTION: Final rule; correction.

SUMMARY: The Bureau of Industry and Security (BIS) is correcting the formatting of a final rule that appeared in the Federal Register of April 28, 2020 (here and after referred to as the April 28 rule), which becomes effective on June 29, 2020. The April 28 rule amends the Export Administration Regulations (EAR) to expand license requirements on exports, reexports, and transfers (in-country) of items intended for military end use or military end users in the People's Republic of China (China), Russia, or Venezuela. Specifically, this rule expands the licensing requirements for China to include "military end users," in addition to "military end use." It broadens the list of items for which the licensing requirements and review policy apply and expands the definition of "military end use." Next, it creates a new reason for control and the associated review policy for regional stability for certain items exported to China, Russia, or Venezuela, moving existing text related to this policy. Finally, it adds Electronic Export Information filing requirements in the Automated Export System for exports to China, Russia, and Venezuela. This rule supports the objectives discussed in the National Security Strategy of the United States. This correction publishes the full text of each revised Export Control Classification Number on the Commerce Control List.

DATES: This correction is effective June 29, 2020.

FOR FURTHER INFORMATION CONTACT: Eileen Albanese, Director, Office of National Security and Technology Transfer Controls, Bureau of Industry and Security, Department of Commerce. Phone: (202) 482-0092; Fax: (202) 482-3355; Email: rpd2@bis.doc.gov. For emails, include "Military End Use or User" in the subject line.

SUPPLEMENTARY INFORMATION:

Background

The April 28 rule (85 FR 23460) revised portions of Export Control Classification Numbers (ECCNs) on the Commerce Control List (CCL) (Supplement No. 1 to part 774).

Need for Correction

The April 28 rule published only the revised portions of each ECCN; this correction publishes each revised ECCN in full. Therefore, FR Rule Doc. No. 2020-07241, published in the April 28, 2020, issue of the Federal Register, beginning on page 23460, is corrected as follows:

Supplement No. 1 to Part 774— [Corrected]

- 1. On page 23465, in the third column, instruction 16 and its corresponding amendment text are corrected to read as follows:
■ 16. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 0, ECCNs 0A521, 0B521, 0C521, 0D521, and 0E521 are revised to read as follows:

0A521 Any commodity subject to the EAR that is not listed elsewhere in the CCL, but which is controlled for export because it provides at least a significant military or intelligence advantage to the United States or for foreign policy reasons.

0A521 commodities are subject to RS1 controls with no license exception eligibility other than License Exception GOV for U.S. Government personnel and agencies under § 740.11(b)(2)(ii) of the EAR, or an item-specific license exception identified in Supplement No. 5 to part 774 particular to an item covered under ECCN 0A521. The list of commodities determined to be classified under ECCN 0A521 controls is published in Supplement No. 5 to part 774. The license requirements and licensing policy relating to ECCN 0A521 are set forth in § 742.6(a)(8) of the EAR.

0B521 Any commodity subject to the EAR that is not listed elsewhere in the CCL, but which is controlled for export because it provides at least a significant military or intelligence advantage to the United States or for foreign policy reasons.

0B521 commodities are subject to RS1 controls with no license exception eligibility other than License Exception GOV for U.S. Government personnel and agencies under § 740.11(b)(2)(ii) of the EAR, or an item-specific license exception identified in Supplement No. 5 to part 774 particular to an item covered under ECCN 0B521. The list of commodities determined to be classified under ECCN 0B521 controls is published in Supplement No. 5 to part 774. The license requirements and licensing policy relating to ECCN 0B521 are set forth in § 742.6(a)(8) of the EAR.

\* \* \* \* \*

0C521 Any material subject to the EAR that is not listed elsewhere in the CCL, but which is controlled for export because it provides at least a significant military or intelligence advantage to the United States or for foreign policy reasons.

0C521 materials are subject to RS1 controls with no license exception eligibility other than License Exception GOV for U.S. Government personnel and agencies under § 740.11(b)(2)(ii) of the EAR, or an item-specific license exception identified in Supplement No. 5 to part 774 particular to an item covered under ECCN 0C521. The list of materials determined to be classified under ECCN 0C521 controls is published in Supplement No. 5 to part 774. The license requirements and licensing policy relating to ECCN 0C521 are set forth in § 742.6(a)(8) of the EAR.

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0D521 Any software subject to the EAR that is not listed elsewhere in the CCL, but which is controlled for export because it provides at least a significant military or intelligence advantage to the United States or for foreign policy reasons.

0D521 software is subject to RS1 controls with no license exception eligibility other than License Exception GOV for U.S. Government personnel and agencies under § 740.11(b)(2)(ii) of the EAR, or an item-specific license exception identified in Supplement No. 5 to part 774 particular to an item covered under ECCN 0D521. The list of software determined to be classified under ECCN 0D521 controls is published in Supplement No. 5 to part 774. The license requirements and licensing policy relating to ECCN 0D521 are set forth in § 742.6(a)(8) of the EAR.

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0E521 Any technology subject to the EAR that is not listed elsewhere in the CCL, but which is controlled for export because it provides at least a significant military or intelligence advantage to the United States or for foreign policy reasons.

0E521 technology is subject to RS1 controls with no license exception eligibility other than License Exception GOV for U.S. Government personnel and agencies under § 740.11(b)(2)(ii) of the EAR, or an item-specific license exception identified in Supplement No. 5 to part 774 particular to an item covered under ECCN 0E521. The list of technologies determined to be classified under ECCN 0E521 controls is published in Supplement No. 5 to part 774. The license requirements and licensing policy relating to ECCN 0E521 are set forth in § 742.6(a)(8) of the EAR.

\* \* \* \* \*

- 2. On page 23465, in the third column, instruction 17 and its corresponding amendment text are corrected to read as follows:

■ 17. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 0, ECCNs 0A606, 0A617, 0D606, 0D617, 0E606, and 0E617 are revised to read as follows:

**0A606 Ground vehicles and related commodities, as follows (see List of Items Controlled).****License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry, except 0A606.b and .y.	NS Column 1.
NS applies to 0A606.b.	NS Column 2.
RS applies to entire entry, except 0A606.b and .y.	RS Column 1.
RS applies to 0A606.b.	RS Column 2.
RS applies to 0A606.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 0A606.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**LVS: \$1,500  
GBS: N/A**Special Conditions for STA**

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for any item in 0A606.a, unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for 9x515 and “600 series” items). (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 0A606.

**List of Items Controlled**

**Related Controls:** (1) The ground vehicles, other articles, technical data (including software) and services described in 22 CFR part 121, Category VII are subject to the jurisdiction of the International Traffic in Arms Regulations. (2) See ECCN 0A919 for foreign-made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content.

**Related Definitions:** N/A**Items:**

a. Ground vehicles, whether manned or unmanned, “specially designed” for a military use and not enumerated or otherwise described in USML Category VII.

**Note 1 to paragraph a:** For purposes of paragraph .a, “ground vehicles” include (i) tanks and armored vehicles manufactured prior to 1956 that have not been modified since 1955 and that do not contain a functional weapon or a weapon capable of becoming functional through repair; (ii) military railway trains except those that are armed or are “specially designed” to launch missiles; (iii) unarmored military recovery and other support vehicles; (iv) unarmored, unarmed vehicles with mounts or hard points

for firearms of .50 caliber or less; and (v) trailers “specially designed” for use with other ground vehicles enumerated in USML Category VII or ECCN 0A606.a, and not separately enumerated or otherwise described in USML Category VII. For purposes of this note, the term “modified” does not include incorporation of safety features required by law, cosmetic changes (e.g., different paint or repositioning of bolt holes) or addition of “parts” or “components” available prior to 1956.

**Note 2 to paragraph .a:** A ground vehicle’s being “specially designed” for military use for purposes of determining controls under paragraph .a. entails a structural, electrical or mechanical feature involving one or more “components” that are “specially designed” for military use. Such “components” include:

- Pneumatic tire casings of a kind “specially designed” to be bullet-proof;
- Armored protection of vital “parts” (e.g., fuel tanks or vehicle cabs);
- Special reinforcements or mountings for weapons;
- Black-out lighting.

b. Other ground vehicles, “parts” and “components,” as follows:

- Unarmed vehicles that are derived from civilian vehicles and that have all of the following:

- Manufactured or fitted with materials or “components” other than reactive or electromagnetic armor to provide ballistic protection to level III (National Institute of Justice standard 0108.01, September 1985) or better;

- A transmission to provide drive to both front and rear wheels simultaneously, including those vehicles having additional wheels for load bearing purposes whether driven or not;

- Gross vehicle weight rating (GVWR) greater than 4,500 kg; and

- Designed or modified for off-road use.

- “Parts” and “components” having all of the following:

- “Specially designed” for vehicles specified in paragraph .b.1 of this entry; and
  - Providing ballistic protection to level III (National Institute of Justice standard 0108.01, September 1985) or better.

**Note 1 to paragraph b:** Ground vehicles otherwise controlled by 0A606.b.1 that contain reactive or electromagnetic armor are subject to the controls of USML Category VII.

**Note 2 to paragraph b:** ECCN 0A606.b.1 does not control civilian vehicles “specially designed” for transporting money or valuables.

**Note 3 to paragraph b:** “Unarmed” means not having installed weapons, installed mountings for weapons, or special reinforcements for mounts for weapons.

- Air-cooled diesel engines and engine blocks for armored vehicles that weigh more than 40 tons.

- Fully automatic continuously variable transmissions for tracked combat vehicles.

- Deep water fording kits “specially designed” for ground vehicles controlled by ECCN 0A606.a or USML Category VII.

- Self-launching bridge “components” not enumerated in USML Category VII(g)

“specially designed” for deployment by ground vehicles enumerated in USML Category VII or this ECCN.

- through w. [Reserved]
- “Parts,” “components,” “accessories,” and “attachments” that are “specially designed” for a commodity enumerated or otherwise described in ECCN 0A606 (other than 0A606.b or 0A606.y) or a defense article enumerated in USML Category VII and not elsewhere specified on the USML or in 0A606.y.

**Note 1:** Forgings, castings, and other unfinished products, such as extrusions and machined bodies, that have reached a stage in manufacture where they are clearly identifiable by mechanical properties, material composition, geometry, or function as commodities controlled by ECCN 0A606.x are controlled by ECCN 0A606.x.

**Note 2:** “Parts,” “components,” “accessories” and “attachments” enumerated in USML paragraph VII(g) are subject to the controls of that paragraph. “Parts,” “components,” “accessories” and “attachments” described in ECCN 0A606.y are subject to the controls of that paragraph.

- Specific “parts,” “components,” “accessories,” and “attachments” “specially designed” for a commodity enumerated or otherwise described in this ECCN (other than ECCN 0A606.b) or for a defense article in USML Category VII and not elsewhere specified on the USML or the CCL, as follows, and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor:

- Brake discs, rotors, drums, calipers, cylinders, pads, shoes, lines, hoses, vacuum boosters, and parts therefor;

- Alternators and generators;

- Axles;

- Batteries;

- Bearings (e.g., ball, roller, wheel);

- Cables, cable assemblies, and connectors;

- Cooling system hoses;

- Hydraulic, fuel, oil, and air filters,

other than those controlled by ECCN 1A004;

- Gaskets and o-rings;

- Hydraulic system hoses, fittings,

- couplings, adapters, and valves;

- Latches and hinges;

- Lighting systems, fuses, and

“components;”

- Pneumatic hoses, fittings, adapters,

- couplings, and valves;

- Seats, seat assemblies, seat supports,

- and harnesses;

- Tires, except run flat; and

- Windows, except those for armored

vehicles.

\* \* \* \* \*

**0A617 Miscellaneous “equipment,” materials, and related commodities (see List of Items Controlled).****License Requirements**

Reason for Control: NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry, except 0A617.y.	NS Column 1.
RS applies to entire entry, except 0A617.y.	RS Column 1.
RS applies to 0A617.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 0A617.y.	See § 764.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

LVS: \$1,500  
GBS: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 0A617.

**List of Items Controlled**

*Related Controls:* (1) Defense articles, such as materials made from classified information, that are controlled by USML Category XIII, and technical data (including software) directly related thereto, are subject to the ITAR. (2) See ECCN 0A919 for foreign-made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content. (3) For controls on self-contained diving and underwater swimming apparatus and related commodities, see ECCN 8A620.f. (4) For controls on robots, robot controllers, and robot end-effectors, see USML Category VII and ECCNs 0A606 and 2B007. (5) “Libraries,” *i.e.*, parametric technical databases, “specially designed” for military use with equipment controlled by the USML or a “600 series” ECCN are controlled by the technical data and technology controls pertaining to such items. (6) For controls on nuclear power generating equipment or propulsion equipment, including “nuclear reactors,” “specially designed” for military use, and “parts” and “components” “specially designed” therefor, see USML Categories VI, XIII, XV, and XX. (7) Simulators “specially designed” for military “nuclear reactors” are controlled by USML Category IX(b). (8) See USML Categories X, XI and XII for “laser” protection equipment (*e.g.*, eye and sensor protection) “specially designed” for military use. (9) “Fuel cells” “specially designed” for a defense article on the USML or a commodity controlled by a “600 series” ECCN are controlled according to the corresponding “600 series” ECCN for such end items. (10) See USML Category XV for controls on fuel cells “specially designed” for satellite or spacecraft.

*Related Definitions:* N/A

*Items:*

- a. [Reserved]

b. Concealment and deception equipment “specially designed” for military application, including special paints, decoys, smoke or obscuration equipment and simulators, and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor, not controlled by USML Category XIII.

c. Ferries, bridges (other than those described in ECCN 0A606 or USML Category VII), and pontoons, “specially designed” for military use.

d. Test models “specially designed” for the “development” of defense articles controlled by USML Categories IV, VI, VII and VIII.

e. [Reserved]

f. “Metal embrittlement agents.”

g. through x. [Reserved]

y. Other commodities as follows, and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor:

y.1. Construction equipment “specially designed” for military use, including such equipment “specially designed” for transport in aircraft controlled by USML VIII(a) or ECCN 9A610.a.

y.2. “Parts,” “components,” “accessories,” and “attachments” “specially designed” for commodities in paragraph .y.1 of this entry, including crew protection kits used as protective cabs.

y.3. ISO intermodal containers or demountable vehicle bodies (*i.e.*, swap bodies), *n.e.s.*, “specially designed” or ‘modified’ for shipping or packing defense articles or items controlled by a “600 series” ECCN.

**Technical Note:** For the purpose of 0A617.y.3, ‘modified’ means any structural, electrical, mechanical, or other change that provides a non-military item with military capabilities equivalent to an item which is “specially designed” for military use.

y.4. Field generators “specially designed” for military use.

y.5. Power controlled searchlights and control units therefor, “specially designed” for military use, and “equipment” mounting such units.

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**0D606 “Software” “specially designed” for the “development,” “production,” operation, or maintenance of ground vehicles and related commodities controlled by 0A606, 0B606, or 0C606 (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry, except 0D606.y.	NS Column 1.
RS applies to entire entry, except 0D606.y.	RS Column 1.
RS applies to 0D606.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
UN applies to entire entry, except 0D606.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any software in 0D606.

**List of Items Controlled**

*Related Controls:* (1) Software directly related to articles enumerated or otherwise described in USML Category VII are subject to the controls of USML paragraph VII(h). (2) See ECCN 0A919 for foreign made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content.

*Related Definitions:* N/A

*Items:*

a. “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by ECCNs 0A606 (except for ECCNs 0A606.b or 0A606.y), 0B606, or 0C606.

b. through x. [Reserved]

y. “Specific software” “specially designed” for the “production,” “development,” operation, or maintenance of commodities described in ECCN 0A606.y.

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**0D617 “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by 0A617, “equipment” controlled by 0B617, or materials controlled by 0C617 (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry, except 0D606.y.	NS Column 1.
RS applies to entire entry, except 0D606.y.	RS Column 1.
RS applies to 0D606.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 0D606.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any software in 0D606.

**List of Items Controlled**

*Related Controls:* (1) Software directly related to articles enumerated or otherwise described in USML Category VII are subject to the controls of USML paragraph VII(h). (2) See ECCN 0A919 for foreign made "military commodities" that incorporate more than a de minimis amount of U.S.-origin "600 series" controlled content.

*Related Definitions:* N/A

*Items:*

a. "Software" "specially designed" for the "development," "production," operation, or maintenance of commodities controlled by ECCNs 0A606 (except for ECCNs 0A606.b or 0A606.y), 0B606, or 0C606.

b. through x. [Reserved]

y. "Specific software" "specially designed" for the "production," "development," operation, or maintenance of commodities described in ECCN 0A606.y.

\* \* \* \* \*

**0E606 "Technology" "required" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of ground vehicles and related commodities in 0A606, 0B606, 0C606, or software in 0D606 (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry, except 0E606.y.	NS Column 1.
RS applies to entire entry, except 0E606.y.	RS Column 1.
RS applies to 0E606.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 0E606.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

*TSR:* N/A

**Special Conditions for STA**

*STA:* Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any technology in 0D606.

**List of Items Controlled**

*Related Controls:* Technical data directly related to articles enumerated in USML Category VII are subject to the controls of USML paragraph VII(h).

*Related Definitions:* N/A

*Items:*

a. "Technology" "required" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of commodities enumerated or otherwise described in ECCN 0A606 (except for ECCNs 0A606.b or 0A606.y), 0B606, or 0C606.

b. through x. [Reserved]

y. Specific "technology" "required" for the "development," "production," operation, installation, maintenance, repair, overhaul or refurbishing of commodities or software in ECCN 0A606.y or 0D606.y.

\* \* \* \* \*

**0E617 "Technology" "required" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by ECCN 0A617, "equipment" controlled by 0B617, or materials controlled by 0C617, or "software" controlled by ECCN 0D617 (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry, except 0E617.y.	NS Column 1.
RS applies to entire entry, except 0E617.y.	RS Column 1.
RS applies to 0E617.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 0E617.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

*TSR:* N/A

**Special Conditions for STA**

*STA:* Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any technology in 0E617.

**List of Items Controlled**

*Related Controls:* Technical data directly related to articles controlled by USML Category XIII are subject to the control of USML paragraph XIII(l).

*Related Definitions:* N/A

*Items:*

a. "Technology" (other than "technology" controlled by paragraph .y of this entry) "required" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or "software" controlled by ECCN 0A617 (except 0A617.y), 0B617, 0C617, or 0D617 (except 0D617.y).

b. through x. [Reserved]

y. Specific "technology" "required" for the "production," "development," operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by ECCN 0A617.y or "software" controlled by 0D617.y.

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■ 3. On page 23466, in the second column, instruction 18 and its corresponding amendment text are corrected to read as follows:

■ 18. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 1, ECCNs 1A613, 1D613, and 1E613 are revised to read as follows:

**1A613 Armored and protective "equipment" and related commodities, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 1A613.y.	NS Column 1.
RS applies to entire entry except 1A613.y.	RS Column 1.
RS applies to 1A613.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 1A613.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

*LVS:* \$1,500  
*GBS:* N/A

**Special Conditions for STA**

*STA:* Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 1A613.

**List of Items Controlled**

*Related Controls:* (1) Defense articles, such as materials made from classified information, that are controlled by USML Category X or XIII of the ITAR, and technical data (including software) directly related thereto, are "subject to the ITAR." (2) See ECCN 0A919 for foreign-made "military commodities" that incorporate more than a de minimis amount of U.S.-origin "600 series" controlled content. (3) See ECCN 9A610.g for anti-gravity suits ("G-suits") and pressure suits capable of operating at altitudes higher than 55,000 feet above sea level.

*Related Definitions:* References to "NIJ Type" protection are to the National Institute of Justice Classification guide at NIJ Standard 0101.06, Ballistic Resistance of Body Armor, and NIJ Standard 0108.01, Ballistic Resistant Protective Materials.

*Items:*

a. Metallic or non-metallic armored plate "specially designed" for military use and not controlled by the USML.

**Note to paragraph a:** For controls on body armor plates, see ECCN 1A613.d.2 and USML Category X(a)(1).

b. Shelters "specially designed" to:

- b.1. Provide ballistic protection for military systems; or
- b.2. Protect against nuclear, biological, or chemical contamination.
- c. Military helmets (other than helmets controlled under 1A613.y.1) providing less

than NIJ Type IV protection and “specially designed” helmet shells, liners, or comfort pads therefor.

**Note 1:** See ECCN 0A979 for controls on police helmets.

**Note 2:** See USML Category X(a)(5) and (a)(6) for controls on other military helmets.

d. Body armor and protective garments, as follows:

d.1. Soft body armor and protective garments manufactured to military standards or specifications, or to their equivalents, that provide ballistic protection equal to or less than NIJ level III (NIJ 0101.06, July 2008); or

**Note:** For 1A613.d.1, military standards or specifications include, at a minimum, specifications for fragmentation protection.

d.2. Hard body armor plates that provide ballistic protection equal to NIJ level III (NIJ 0101.06, July 2008) or national equivalents.

**Note:** See ECCN 1A005 for controls on soft body armor not manufactured to military standards or specifications and hard body armor plates providing less than NIJ level III protection. For body armor providing NIJ Type IV protection or greater, see USML Category X(a)(1).

e. Atmospheric diving suits “specially designed” for rescue operations for submariners controlled by the USML or the CCL.

f. Other personal protective “equipment” “specially designed” for military applications not controlled by the USML, not elsewhere controlled on the CCL.

g. to w. [Reserved]

x. “Parts,” “components,” “accessories,” and “attachments” that are “specially designed” for a commodity controlled by ECCN 1A613 (except for 1A613.y) or an article enumerated in USML Category X, and not controlled elsewhere in the USML.

**Note:** Forgings, castings, and other unfinished products, such as extrusions and machined bodies, that have reached a stage in manufacturing where they are clearly identifiable by mechanical properties, material composition, geometry, or function as commodities controlled by ECCN 1A613.x are controlled by ECCN 1A613.x.

y. Other commodities as follows:

y.1 Conventional military steel helmets.

**N.B. to paragraph y.1:** For other military helmet “components” or “accessories,” see the relevant ECCN in the CCL or USML Entry.

y.2 [Reserved]

\* \* \* \* \*

**1D613 “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by 1A613 or 1B613, as follows (see List of Items Controlled).**

**License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry except 1D613.y.	NS Column 1.

Control(s)	Country chart (see Supp. No. 1 to part 738)
RS applies to entire entry except 1D613.y.	RS Column 1.
RS applies to 1D613.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 1D613.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “software” in 1D613.

**List of Items Controlled**

**Related Controls:** (1) “Software” directly related to articles controlled by USML Category X is subject to the control of USML paragraph X(e) of the ITAR. (2) See ECCN 0A919 for foreign-made “military commodities” that incorporate more than a de minimis amount of US-origin “600 series” controlled content.

**Related Definitions:** N/A

**Items:**

- a. “Software” (other than “software” controlled in paragraph .y of this entry) “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by ECCNs 1A613 (except 1A613.y) or 1B613 (except 1B613.y).
- b. to x. [Reserved]
- y. Specific “software” “specially designed” for the “production,” “development,” operation, or maintenance of commodities controlled by ECCN 1A613.y.

\* \* \* \* \*

**1E613 “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by 1A613 or 1B613 or “software” controlled by 1D613, as follows (see List of Items Controlled).**

**License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry except 1E613.y.	NS Column 1.
RS applies to entire entry except 1E613.y.	RS Column 1.
RS applies to 1E613.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.

Control(s)	Country chart (see Supp. No. 1 to part 738)
UN applies to entire entry, except 1E613.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “technology” in 1E613.

**List of Items Controlled**

**Related Controls:** Technical data directly related to articles controlled by USML Category X are subject to the control of USML paragraph X(e) of the ITAR.

**Related Definitions:** N/A

**Items:**

- a. “Technology” (other than “technology” controlled by paragraph .y of this entry) “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or “software” controlled by ECCNs 1A613 (except 1A613.y), 1B613 or 1D613 (except 1D613.y).
- b. through x. [Reserved]
- y. Specific “technology” “required” for the “production,” “development,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software controlled by ECCN 1A613.y or 1D613.y.

\* \* \* \* \*

■ 4. On page 23467, in the first column, instruction 19 and its corresponding amendment text are corrected to read as follows:

■ 19. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 3, ECCNs 3A611, 3D611, and 3E611 are revised to read as follows:

**3A611 Military electronics, as follows (see List of Items Controlled).**

**License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry except 3A611.y.	NS Column 1.
RS applies to entire entry except 3A611.y.	RS Column 1.
RS applies to 3A611.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 3A611.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (see Part 740 for a Description of All License Exceptions)**

LVS: \$1,500 for 3A611.a, .d through .h and .x; N/A for ECCN 3A611.c.  
GBS: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 3A611.

**List of Items Controlled**

*Related Controls:* (1) Electronic items that are enumerated in USML Category XI or other USML categories, and technical data (including software) directly related thereto, are subject to the ITAR. (2) Application specific integrated circuits (ASICs) and programmable logic devices (PLD) that are programmed for defense articles that are subject to the ITAR are controlled in USML Category XI(c)(1). (3) See ECCN 3A001.a.7 for controls on unprogrammed programmable logic devices (PLD). (4) Printed circuit boards and populated circuit cards with a layout that is "specially designed" for defense articles are controlled in USML Category XI(c)(2). (5) Multichip modules for which the pattern or layout is "specially designed" for defense articles are controlled in USML Category XI(c)(3). (6) Electronic items "specially designed" for military application that are not controlled in any USML category but are within the scope of another "600 series" ECCN or a 9x515 ECCN are controlled by that "600 series" ECCN or 9x515 ECCN. For example, electronic components not enumerated on the USML or a "600 series" other than 3A611 that are "specially designed" for a military aircraft controlled by USML Category VIII or ECCN 9A610 are controlled by the catch-all control in ECCN 9A610.x. Electronic components not enumerated on the USML or another "600 series" entry that are "specially designed" for a military vehicle controlled by USML Category VII or ECCN 0A606 are controlled by ECCN 0A606.x. Electronic components not enumerated on the USML that are "specially designed" for a missile controlled by USML Category IV are controlled by ECCN 9A604.(7) Certain radiation-hardened microelectronic circuits are controlled by ECCN 9A515.d or 9A515.e, when "specially designed" for defense articles, "600 series" items, or items controlled by 9A515.

*Related Definitions:* N/A

**Items:**

a. Electronic "equipment," "end items," and "systems" "specially designed" for a military application that are not enumerated or otherwise described in either a USML category or another "600 series" ECCN.

**Note to 3A611.a:** *ECCN 3A611.a includes any radar, telecommunications, acoustic or computer equipment, end items, or systems "specially designed" for military application that are not enumerated or otherwise described in any USML category or controlled by another "600 series" ECCN.*

- b. [Reserved]  
c. [Reserved]

d. [Reserved]

e. High frequency (HF) surface wave radar that maintains the positional state of maritime surface or low altitude airborne objects of interest in a received radar signal through time.

**Note to 3A611.e:** *ECCN 3A611.e does not apply to systems, equipment, and assemblies "specially designed" for marine traffic control.*

f. Application specific integrated circuits (ASICs) and programmable logic devices (PLD) that are not controlled by paragraph .y of this entry and that are programmed for "600 series" items.

**Note to paragraph .f:** *In this paragraph, the term "application specific integrated circuit" means an integrated circuit developed and produced for a specific application or function regardless of number of customers for which the integrated circuit is developed or produced.*

g. Printed circuit boards and populated circuit card assemblies that are not controlled by paragraph .y of this entry and for which the layout is "specially designed" for "600 series" items.

h. Multichip modules that are not controlled by paragraph .y of this entry and for which the pattern or layout is "specially designed" for "600 series" items.

i. through w. [Reserved]

x. "Parts," "components," "accessories," and "attachments" that are "specially designed" for a commodity controlled by this entry or for an article controlled by USML Category XI, and not enumerated or described in any USML category or in any paragraph other than the .x paragraph of another 600 series ECCN or in paragraph .y of this entry.

**Note 1 to ECCN 3A611.x:** *ECCN 3A611.x includes "parts," "components," "accessories," and "attachments" "specially designed" for a radar, telecommunications, acoustic system or equipment or computer "specially designed" for military application that are neither controlled in any USML category nor controlled in any paragraph other than the .x paragraph of another "600 series" ECCN.*

**Note 2 to ECCN 3A611.x:** *ECCN 3A611.x controls "parts" and "components" "specially designed" for underwater sensors or projectors controlled by USML Category XI(c)(12) containing single-crystal lead magnesium niobate lead titanate (PMN-PT) based piezoelectrics.*

**Note 3 to ECCN 3A611.x:** *"Parts," "components," "accessories," and "attachments" subject to the EAR and within the scope of any 600 series .x entry that are of a type that are or would potentially be for use in or with multiple platforms (e.g., military electronics, military vehicles, and military aircraft) may be classified under 3A611.x.*

y. Specific "parts," "components," "accessories," and "attachments" "specially designed" for a commodity subject to control in a "600 series" ECCN or a defense article and not elsewhere specified in any paragraph other than the .y paragraph of a "600 series" ECCN or the USML as follows, and "parts,"

"components," "accessories," and "attachments" "specially designed" therefor:

- y.1. Electrical connectors;
- y.2. Electric fans;
- y.3. Heat sinks;
- y.4. Joy sticks;
- y.5. Mica paper capacitors;
- y.6. Microphones;
- y.7. Potentiometers;
- y.8. Rheostats;
- y.9. Electric connector backshells;
- y.10. Solenoids;
- y.11. Speakers;
- y.12. Trackballs;
- y.13. Electric transformers;
- y.14. Application specific integrated circuits (ASICs) and programmable logic devices (PLD) that are programmed for commodities controlled in the .y paragraph of any "600 series" ECCN;
- y.15. Printed circuit boards and populated circuit card assemblies for which the layout is "specially designed" for an item controlled by the .y paragraph of any "600 series" ECCN;
- y.16. Multichip modules for which the pattern or layout is "specially designed" for an item in the .y paragraph of a "600 series" ECCN;
- y.17. Circuit breakers;
- y.18. Ground fault circuit interrupters;
- y.19. Electrical contacts;
- y.20. Electrical guide pins;
- y.21. Filtered and unfiltered mechanical switches;
- y.22. Thumbwheels;
- y.23. Fixed resistors;
- y.24. Electrical jumpers;
- y.25. Grounding straps;
- y.26. Indicator dials;
- y.27. Contactors;
- y.28. Touchpads;
- y.29. Mechanical caps;
- y.30. Mechanical plugs;
- y.31. Finger barriers;
- y.32. Flip-guards;
- y.33. Identification plates and nameplates;
- y.34. Knobs;
- y.35. Hydraulic, pneumatic, fuel and lubrication gauges.

**Note to ECCN 3A611:** *When applying the "specially designed" definition to determine whether a printed circuit board, populated circuit card assembly or multichip module is controlled by paragraph .g, .h, .y.15 or .y.16 of this entry, the layout of the board or assembly and the pattern and layout of the module are the only characteristics that need be evaluated under the "specially designed" definition.*

\* \* \* \* \*

**3D611 "Software" "specially designed" for military electronics, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 3D611.y.	NS Column 1.

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
RS applies to entire entry except 3D611.y.	RS Column 1.
RS applies to 3D611.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 3D611.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: 1. Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “software” in 3D611.  
 2. Except for “build-to-print” software, License Exception STA is not eligible for software enumerated in ECCN 3D611.b.

**List of Items Controlled**

*Related Controls:* “Software” directly related to articles enumerated in USML Category XI is controlled in USML Category XI(d).

*Related Definitions:* N/A

*Items:*

- a. “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by ECCN 3A611 (other than 3A611.y) and 3B611.
- b. “Software” “specially designed” for the “development,” “production,” operation or maintenance of technology in ECCN 3E611.b.
- c. through x. [Reserved]
- y. “Software” “specially designed” for the “production,” “development,” operation or maintenance of commodities enumerated in ECCNs 3A611.y.

\* \* \* \* \*

**3E611 “Technology” “required” for military electronics, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country Chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 3E611.y.	NS Column 1.
RS applies to entire entry except 3E611.y.	RS Column 1.
RS applies to 3E611.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 3E611.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: 1. Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “technology” in 3E611.  
 2. Except for “build-to-print technology,” License Exception STA is not eligible for “technology” enumerated in ECCN 3E611.b.

**List of Items Controlled**

*Related Controls:* Technical data directly related to articles enumerated in USML Category XI is controlled in USML Category XI(d).

*Related Definitions:* N/A

*Items:*

- a. “Technology” (other than that controlled by 3E611.b or 3E611.y) “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software controlled by ECCN 3A611, 3B611 or 3D611.
- b. “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of the following if controlled by ECCN 3A611, including 3A611.x:
  - b.1. Helix traveling wave tubes (TWTs);
  - b.2. Transmit/receive or transmit modules.
  - c. through x. [Reserved]
  - y. “Technology” “required” for the “production,” “development,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software enumerated in ECCNs 3A611.y or 3D611.y.

\* \* \* \* \*

- 5. On page 23467, in the second column, instruction 20 and its corresponding amendment text are corrected to read as follows:
- 20. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 7, ECCNs 7A611, 7D611, and 7E611 are revised to read as follows:

**7A611 Military fire control, laser, imaging, and guidance equipment, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, MT, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 7A611.y.	NS Column 1.
MT applies to commodities in 7A611.a that meet or exceed the parameters in 7A103.b or .c.	MT Column 1.
RS applies to entire entry except 7A611.y.	RS Column 1.
RS applies to 7A611.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 7A611.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

LVS: \$1,500

GBS: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 7A611.

**List of Items Controlled**

*Related Controls:* (1) Military fire control, laser, imaging, and guidance equipment that are enumerated in USML Category XII, and technical data (including software) directly related thereto, are subject to the ITAR. (2) See Related Controls in ECCNs 0A504, 2A984, 6A002, 6A003, 6A004, 6A005, 6A007, 6A008, 6A107, 7A001, 7A002, 7A003, 7A005, 7A101, 7A102, and 7A103. (3) See ECCN 3A611 and USML Category XI for controls on countermeasure equipment. (4) See ECCN 0A919 for foreign-made “military commodities” that incorporate more than a de minimis amount of U.S. origin “600 series” controlled content.

*Related Definitions:* N/A

*Items:*

- a. Guidance or navigation systems, not elsewhere specified on the USML, that are “specially designed” for a defense article on the USML or for a 600 series item.
- b. to w. [Reserved]
- x. “Parts,” “components,” “accessories,” and “attachments,” including accelerometers, gyros, angular rate sensors, gravity meters (gravimeters), and inertial measurement units (IMUs), that are “specially designed” for defense articles controlled by USML Category XII or items controlled by 7A611, and that are NOT:
  - 1. Enumerated or controlled in the USML or elsewhere within ECCN 7A611;
  - 2. Described in ECCNs 6A007, 6A107, 7A001, 7A002, 7A003, 7A101, 7A102 or 7A103; or
  - 3. Elsewhere specified in ECCN 7A611.y or 3A611.y.
- y. Specific “parts,” “components,” “accessories,” and “attachments” “specially designed” for a commodity subject to control in this ECCN or a defense article in Category XII and not elsewhere specified on the USML or in the CCL, as follows, and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor:
  - y.1 [Reserved]

\* \* \* \* \*

**7D611 “Software” “specially designed” for commodities controlled by 7A611 or equipment controlled by 7B611, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, MT, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 7D611.y.	NS Column 1.

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>	<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>	<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
MT applies to 7D611.a “software” “specially designed” for 7A611.a commodities controlled for MT reasons.	MT Column 1.	RS applies to entire entry except 7E611.y.	RS Column 1.	AT applies to entire entry.	AT Column 1.
RS applies to entire entry except 7D611.y.	RS Column 1.	RS applies to 7E611.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).	UN applies to entire entry, except 8A609.y.	See § 746.1(b) for UN controls.
RS applies to 7D611.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).	AT applies to entire entry.	AT Column 1.		
AT applies to entire entry.	AT Column 1.	UN applies to entire entry except 7E611.y.	See § 746.1(b) for UN controls.		
UN applies to entire entry except 7D611.y.	See § 746.1(b) for UN controls.				

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any software in 7D611.

**List of Items Controlled**

*Related Controls:* “Software” directly related to articles enumerated in USML Category XII is subject of USML paragraph XII(f).

*Related Definitions:* N/A

*Items:*

a. “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by ECCNs 7A611 (except 7A611.y) or 7B611.

b. to x. [Reserved]

y. Specific “software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities described in 7A611.y.

\* \* \* \* \*

**7E611 “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul or refurbishing of commodities controlled by 7A611, commodities controlled by 7B611, or software controlled by 7D611, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, MT, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>	<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 7E611.y.	NS Column 1.	NS applies to entire entry, except 8A609.y.	NS Column 1.
MT applies to “technology” in 7E611.a if “required” for items controlled for MT reasons in 7A611.a, 7B611.a, or 7D611.a.	MT Column 1.	RS applies to entire entry, except 8A609.y.	RS Column 1.
		RS applies to 8A609.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any technology in 7E611.

**List of Items Controlled**

*Related Controls:* Technical data directly related to articles enumerated in USML Category XII are subject to the control of USML Category XII(f).

*Related Definitions:* N/A

*Items:*

a. “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or “software” controlled by ECCN 7A611 (except 7A611.y), 7B611, or 7D611 (except 7D611.y).

b. through .x [Reserved]

y. Specific “technology” “required” for the “production,” “development,” operation, installation, maintenance, repair, or overhaul of commodities or software controlled by ECCNs 7A611.y or 7D611.y.

\* \* \* \* \*

■ 7. On page 23467, in the third column, instruction 21 and its corresponding amendment text are corrected to read as follows:

■ 21. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 8, ECCNs 8A609, 8A620, 8D609, 8D620, 8E609, and 8E620 are revised to read as follows:

**8A609 Surface vessels of war and related commodities (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

LVS: \$1,500

GBS: N/A

**Special Conditions for STA**

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for any item in 8A609.a, unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for 9x515 and “600 series” items). (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 8A609.

**List of Items Controlled**

*Related Controls:* (1) Surface vessels of war and special naval equipment, and technical data (including software), and services directly related thereto, described in 22 CFR part 121, Category VI, Surface Vessels of War and Special Naval Equipment, are subject to the jurisdiction of the International Traffic in Arms Regulations. (2) See ECCN 0A919 for foreign-made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content. (3) For controls on diesel engines and electric motors that are “subject to the EAR” for surface vessels of war “subject to the EAR” or “subject to the ITAR,” see ECCN 8A992.g. For diesel engines and electric motors for surface vessels of war “subject to the ITAR,” see 22 CFR part 121, Category VI(c) for parts, components, accessories, and attachments, “specially designed” for developmental vessels funded by the Department of Defense via contract or other funding authorization. (4) For controls on military gas turbine engines and related items for vessels of war, see ECCN 9A619. (4) For controls on military gas turbine engines and related items for vessels of war, see ECCN 9A619.

*Related Definitions:* N/A

*Items:*

a. Surface vessels of war “specially designed” for a military use and not enumerated or otherwise described in the USML.

**Note 1:** 8A609.a includes: (i) Underway replenishment ships; (ii) surface vessel and submarine tender and repair ships, except vessels that are “specially designed” to support naval nuclear propulsion plants; (iii) non-submersible submarine rescue ships; (iv) other auxiliaries (e.g., AGDS, AGF, AGM, AGOR, AGOS, AH, AP, ARL, AVB, AVM, and AVT); (v) amphibious warfare craft, except those that are armed; and (vi) unarmored and unarmed coastal, patrol, roadstead, and Coast Guard and other patrol craft with



mounts or hard points for firearms of .50 caliber or less.

**Note 2:** For purposes of paragraph .a, surface vessels of war includes vessels "specially designed" for military use that are not identified in paragraph (a) of ITAR § 121.15, including any demilitarized vessels, regardless of origin or designation, manufactured prior to 1950 and that have not been modified since 1949. For purposes of this note, the term modified does not include incorporation of safety features required by law, cosmetic changes (e.g., different paint), or the addition of "parts" or "components" available prior to 1950.

b. Non-magnetic diesel engines with a power output of 50 hp or more and either of the following:

b.1. Non-magnetic content exceeding 25% of total weight; or

b.2. Non-magnetic parts other than crankcase, block, head, pistons, covers, end plates, valve facings, gaskets, and fuel, lubrication and other supply lines.

c. through w. [Reserved]

x. "Parts," "components," "accessories" and "attachments" that are "specially designed" for a commodity enumerated or otherwise described in ECCN 8A609 (except for 8A609.y) or a defense article enumerated or otherwise described in USML Category VI and not specified elsewhere on the USML, in 8A609.y or 3A611.y.

**Note 1:** Forgings, castings, and other unfinished products, such as extrusions and machined bodies, that have reached a stage in manufacturing where they are clearly identifiable by mechanical properties, material composition, geometry, or function as commodities controlled by ECCN 8A609.x are controlled by ECCN 8A609.x.

**Note 2:** "Parts," "components," "accessories" and "attachments" specified in USML subcategory VI(f) are subject to the controls of that paragraph. "Parts," "components," "accessories," and "attachments" specified in ECCN 8A609.y are subject to the controls of that paragraph.

y. Specific "parts," "components," "accessories" and "attachments" "specially designed" for a commodity subject to control in this ECCN or for a defense article in USML Category VI and not elsewhere specified in the USML, as follows, and "parts," "components," "accessories," and "attachments" "specially designed" therefor:

- y.1. Public address (PA) systems;
- y.2. Filters and filter assemblies, hoses, lines, fittings, couplings, and brackets for pneumatic, hydraulic, oil and fuel systems;
- y.3. Galleys;
- y.4. Lavatories;
- y.5. Magnetic compass, magnetic azimuth detector;
- y.6. Medical facilities;
- y.7. Potable water tanks, filters, valves, hoses, lines, fittings, couplings, and brackets;
- y.8. Panel knobs, indicators, switches, buttons, and dials whether unfiltered or filtered for use with night vision imaging systems;
- y.9. Emergency lighting;
- y.10. Gauges and indicators;
- y.11. Audio selector panels.

## 8A620 Submersible vessels, oceanographic and associated commodities (see List of Items Controlled).

### License Requirements

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry, except 8A620. b and .y.	NS Column 1.
RS applies to entire entry, except 8A620.y.	RS Column 1.
RS applies to 8A620.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 8A620.y.	See § 746.1(b) for UN controls.

### List Based License Exceptions (See Part 740 for a Description of All License Exceptions)

LVS: \$1,500

GBS: N/A

### Special Conditions for STA

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for any item in 8A620.a or .b, unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for "600 series" end items). (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 8A620.

### List of Items Controlled

Related Controls: (1) Submersible vessels, oceanographic and associated equipment, and technical data (including software), and services directly related thereto, described in 22 CFR part 121, Category XX, Submersible Vessels, Oceanographic and Associated Equipment, are subject to the jurisdiction of the International Traffic in Arms Regulations (ITAR). "Parts," "components," "accessories," and "attachments" "specially designed" for defense articles in USML Category XX are controlled under USML sub-category XX(c). (2) See ECCN 0A919 for foreign made "military commodities" that incorporate more than a de minimis amount of U.S.-origin "600 series" controlled content. (3) For controls on nonmilitary submersible vehicles, oceanographic and associated equipment, see ECCNs 8A001, 8A002, and 8A992. (4) See ECCN 8A609 for controls on nonmagnetic diesel engines with a power output of 50 hp or more and either: (i) Nonmagnetic content exceeding 25% of total weight; or (ii) non-magnetic parts other than crankcase, block, head, pistons, covers, end plates, valve facings, gaskets, and fuel, lubrication and other supply lines.

Related Definitions: N/A  
Items:

a. Submersible and semi-submersible vessels "specially designed" for a military use and not enumerated or otherwise described in the USML.

**Note:** 8A620.a includes submarine rescue vehicles and Deep Submergence Vehicles (DSV).

b. Submersible and semi-submersible vessels "specially designed" for cargo transport and "parts," "components," "accessories," and "attachments" "specially designed" therefor.

c. Harbor entrance detection devices (magnetic, pressure, and acoustic) and controls therefor, not elsewhere specified on the USML or the CCL.

d. Diesel engines of 1,500 hp and over with rotary speed of 700 rpm or over "specially designed" for submarines.

**Note:** Propulsion systems not specified in ECCN 8A620.d that are "specially designed" for an article controlled by USML Category XX are controlled by USML XX(b) or (c).

e. Submarine nets and torpedo nets.  
f. Diving and underwater swimming apparatus specially designed or modified for military use, as follows:

f.1. Self-contained diving rebreathers, closed or semi-closed circuit;

f.2. Underwater swimming apparatus specially designed for use with the diving apparatus specified in subparagraph f.1;

**N.B.:** See also 8A002.q.

g. through w. [Reserved]  
x. "Parts," "components," "accessories" and "attachments" that are "specially designed" for a commodity enumerated or otherwise described in ECCN 8A620 (except for 8A620.b or 8A620.y) and not elsewhere specified on the USML, in 8A620.y or 3A611.y.

**Note 1:** Forgings, castings, and other unfinished products, such as extrusions and machined bodies, that have reached a stage in manufacturing where they are clearly identifiable by mechanical properties, material composition, geometry, or function as commodities controlled by ECCN 8A620.x are controlled by ECCN 8A620.x.

**Note 2:** "Parts," "components," "accessories" and "attachments" specified in ECCN 8A620.y are subject to the controls of that paragraph.

y. Specific "parts," "components," "accessories," and "attachments" "specially designed" for a commodity subject to control in this ECCN, as follows, and "parts," "components," "accessories," and "attachments" "specially designed" therefor:

- y.1. Public address (PA) systems;
- y.2. Filters and filter assemblies, hoses, lines, fittings, couplings, and brackets for pneumatic, hydraulic, oil and fuel systems;
- y.3. Galleys;
- y.4. Lavatories;
- y.5. Magnetic compass, magnetic azimuth detector;
- y.6. Medical facilities;
- y.7. Potable water tanks, filters, valves, hoses, lines, fittings, couplings, and brackets;
- y.8. Panel knobs, indicators, switches, buttons, and dials whether unfiltered or filtered for use with night vision imaging systems;

y.9. Emergency lighting;  
y.10. Gauges and indicators;  
y.11. Audio selector panels.

\* \* \* \* \*

**8D609** “Software” “specially designed” for the “development,” “production,” operation or maintenance of commodities controlled by **8A609**, **8B609**, or **8C609** (see List of Items Controlled).

**License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry, except 8D609.y.	NS Column 1.
RS applies to entire entry, except 8D609.y.	RS Column 1.
RS applies to 8D609.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 8D609.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “software” in 8D609.

**List of Items Controlled**

*Related Controls:* (1) “Software” directly related to articles enumerated in USML Category VI is controlled under USML Category VI(g). (2) See ECCN 0A919 for foreign made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content.

*Related Definitions:* N/A

*Items:*

a. “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by ECCN 8A609, ECCN 8B609, or ECCN 8C609 (except for commodities controlled by ECCN 8A609.y).

b. through .x [Reserved]

y. Specific “software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities in ECCN 8A609.y.

**8D620** “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by **8A620** or **8B620** (see List of Items Controlled).

**License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry, except 8D620.b and .y.	NS Column 1.
RS applies to entire entry, except 8D620.y.	RS Column 1.
RS applies to 8D620.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 8D620.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “software” in 8D620.

**List of Items Controlled**

*Related Controls:* (1) “Software” directly related to articles enumerated or otherwise described in USML Category XX is controlled under USML Category XX(d). (2) See ECCN 0A919 for foreign made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content.

*Related Definitions:* N/A

*Items:*

a. “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by ECCN 8A620 or ECCN 8B620 (except for commodities controlled by ECCN 8A620.b or .y or ECCN 8B620.b).

b. “Software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by ECCN 8A620.b or ECCN 8B620.b.

c. through .x [Reserved]

y. Specific “software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities in ECCN 8A620.y.

\* \* \* \* \*

**8E609** “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by **8A609**, **8B609**, or **8C609**, or “software” controlled by **8D609** (see List of Items Controlled).

**License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry, except 8E609.y.	NS Column 1.
RS applies to entire entry, except 8E609.y.	RS Column 1.

Control(s)	Country chart (see Supp. No. 1 to part 738)
RS applies to 8E609.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 8E609.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “technology” in 8E609.

**List of Items Controlled**

*Related Controls:* Technical data directly related to articles enumerated or otherwise described in USML Category VI are controlled under USML Category VI(g).

*Related Definitions:* N/A

*Items:*

a. “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by ECCN 8A609, 8B609, or 8C609 (except for commodities controlled by ECCN 8A609.y), or “software” controlled by ECCN 8D609.

b. through .x [Reserved]

y. Specific “technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software in ECCN 8A609.y or 8D609.y.

**8E620** “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by **8A620** or **8B620**, or “software” controlled by **8D620** (see List of Items Controlled).

**License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry, except 8E620.b and .y.	NS Column 1.
RS applies to entire entry, except 8E620.y.	RS Column 1.
RS applies to 8E620.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry, except 8E620.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “technology” in 8E620.

**List of Items Controlled**

*Related Controls:* Technical data directly related to articles enumerated or otherwise described in USML Category XX are controlled under USML Category XX(d).

*Related Definitions:* N/A

*Items:*

a. “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by ECCN 8A620 or 8B620 or “software” controlled by ECCN 8D620 (except for commodities controlled by ECCN 8A620.b or .y or ECCN 8B620.b or “software” controlled by 8D620.b or .y).

b. “Technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by ECCN 8A620.b or 8B620.b or “software” controlled by ECCN 8D620.b.

c. through .x [Reserved]

y. Specific “technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul or refurbishing of commodities or software in ECCN 8A620.y or 8D620.y.

\* \* \* \* \*

■ 8. On page 23468, in the third column, instruction 22 is removed.

■ 9. On page 23468, in the third column, instruction 23 and its corresponding amendment text are corrected to read as follows:

■ 23. In Supplement No. 1 to Part 774 (the Commerce Control List), Category 9, ECCNs 9A515, 9A610, 9A619, 9B619, 9D515, 9D610, 9D619, 9E515, 9E610, and 9E619 are revised to read as follows:

**9A515 “Spacecraft” and related commodities, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, MT, AT

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry, except .e and .y.	NS Column 1.
RS applies to entire entry, except .e and .y.	RS Column 1.
RS applies to 9A515.e.	RS Column 2.
RS applies to 9A515.y, except to Russia for use in, with, or for the International Space Station (ISS), including launch to the ISS.	China, Russia, or Venezuela (see § 742.6(a)(7)).

*Control(s)* *Country chart (see Supp. No. 1 to part 738)*

MT applies to micro-circuits in 9A515.d and 9A515.e.2 when “usable in” “missiles” for protecting “missiles” against nuclear effects (e.g., Electro-magnetic Pulse (EMP), X-rays, combined blast and thermal effects). MT also applies to 9A515.h when the total impulse capacity is equal to or greater than 8.41x10<sup>4</sup> newton seconds.

AT applies to entire entry. AT Column 1.

**License Requirement Note:** The Commerce Country Chart is not used for determining license requirements for commodities classified in ECCN 9A515.a.1, .a.2, .a.3, .a.4, and .g. See § 742.6(a)(9), which specifies that such commodities are subject to a worldwide license requirement.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

LVS: \$1,500  
GBS: N/A

**Special Conditions for STA**

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for “spacecraft” in ECCN 9A515.a.1, .a.2, .a.3, or .a.4, or items in 9A515.g, unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for certain 9x515 and “600 series” items). (2) License Exception STA may not be used if the “spacecraft” controlled in ECCN 9A515.a.1, .a.2, .a.3, or .a.4 contains a separable or removable propulsion system enumerated in USML Category IV(d)(2) or USML Category XV(e)(12) and designated MT. (3) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 9A515.

**List of Items Controlled**

*Related Controls:* Spacecraft, launch vehicles and related articles that are enumerated in the USML, and technical data (including “software”) directly related thereto, and all services (including training) directly related to the integration of any satellite or spacecraft to a launch vehicle, including both planning and onsite support, or furnishing any assistance (including training) in the launch failure analysis or investigation for items in ECCN 9A515.a, are “subject to the ITAR.” All other “spacecraft,” as enumerated below and defined in § 772.1, are subject to the controls of this ECCN. See also ECCNs 3A001, 3A002, 3A991, 3A992, 6A002, 6A004, 6A008, and 6A998 for specific

“space-qualified” items, 7A004 and 7A104 for star trackers, and 9A004 for the International Space Station (ISS), the James Webb Space Telescope (JWST), and “specially designed” “parts” and “components” therefor. See USML Category XI(c) for controls on “Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers that are “specially designed” for defense articles. See ECCN 9A610.g for pressure suits used for high altitude aircraft.

*Related Definitions:* “Microcircuit” means a device in which a number of passive or active elements are considered as indivisibly associated on or within a continuous structure to perform the function of a circuit.

*Items:*

“Spacecraft” and other items described in ECCN 9A515 remain subject to the EAR even if exported, reexported, or transferred (in-country) with defense articles “subject to the ITAR” integrated into and included therein as integral parts of the item. In all other cases, such defense articles are subject to the ITAR. For example, a 9A515.a “spacecraft” remains “subject to the EAR” even when it is exported, reexported, or transferred (in-country) with a “hosted payload” described in USML Category XV(e)(17) incorporated therein. In all other cases, a “hosted payload” performing a function described in USML Category XV(a) always remains a USML item. The removal of the defense article subject to the ITAR from the spacecraft is a retransfer under the ITAR and would require an ITAR authorization, regardless of the CCL authorization the spacecraft is exported under. Additionally, transfer of technical data regarding the defense article subject to the ITAR integrated into the spacecraft would require an ITAR authorization.

a. “Spacecraft,” including satellites, and space vehicles, whether designated developmental, experimental, research or scientific, not enumerated in USML Category XV or described in ECCN 9A004.u or .w, that:

- a.1. Have electro-optical remote sensing capabilities and having a clear aperture greater than 0.35 meters, but less than or equal to 0.50 meters;
- a.2. Have remote sensing capabilities beyond NIR (i.e., SWIR, MWIR, or LWIR);
- a.3. Have radar remote sensing capabilities (e.g., AESA, SAR, or ISAR) having a center frequency equal to or greater than 1.0 GHz, but less than 10.0 GHz and having a bandwidth equal to or greater than 100 MHz, but less than 300 MHz;
- a.4. Provide space-based logistics, assembly, or servicing of another “spacecraft”; or
- a.5. Are not described in ECCN 9A515.a.1, .a.2, .a.3 or .a.4.

**Note:** ECCN 9A515.a includes commercial communications satellites, remote sensing satellites, planetary rovers, planetary and interplanetary probes, and in-space habitats, not identified in ECCN 9A004 or USML Category XV(a).

b. Ground control systems and training simulators “specially designed” for telemetry, tracking, and control of the “spacecraft” controlled in paragraphs 9A004.u or 9A515.a.

<p>c. [Reserved]</p> <p>d. Microelectronic circuits (e.g., integrated circuits, microcircuits, or MOSFETs) and discrete electronic components rated, certified, or otherwise specified or described as meeting or exceeding all the following characteristics and that are “specially designed” for defense articles, “600 series” items, or items controlled by ECCNs 9A004.v or 9A515:</p>	<p>9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft.”</p> <p>h. Spacecraft thrusters using bi-propellants or mono-propellants that provide thrust equal to or less than 150 lbf (i.e., 667.23 N) vacuum thrust.</p>	<p>Control(s)</p>	<p>Country chart (see Supp. No. 1 to part 738)</p>
<p>d.1. A total dose of 5 x 105 Rads (Si) (5 x 103 Gy (Si));</p> <p>d.2. A dose rate upset threshold of 5 x 108 Rads (Si)/sec (5 x 106 Gy (Si)/sec);</p> <p>d.3. A neutron dose of 1 x 1014 n/cm2 (1 MeV equivalent);</p> <p>d.4. An uncorrected single event upset sensitivity of 1 x 10–10 errors/bit/day or less, for the CREME–MC geosynchronous orbit, Solar Minimum Environment for heavy ion flux; and</p> <p>d.5. An uncorrected single event upset sensitivity of 1 x 10–3 errors/part or less for a fluence of 1 x 107 protons/cm2 for proton energy greater than 50 MeV.</p>	<p>i. through w. [RESERVED]</p> <p>x. “Parts,” “components,” “accessories” and “attachments” that are “specially designed” for defense articles controlled by USML Category XV or items controlled by 9A515, and that are NOT:</p>	<p>NS applies to entire entry except: 9A610.b; parts and components controlled in 9A610.x if being exported or reexported for use in an aircraft controlled in 9A610.b; and 9A610.y.</p>	<p>NS Column 1.</p>
<p>d.1. A total dose of 5 x 105 Rads (Si) (5 x 103 Gy (Si));</p> <p>d.2. A dose rate upset threshold of 5 x 108 Rads (Si)/sec (5 x 106 Gy (Si)/sec);</p> <p>d.3. A neutron dose of 1 x 1014 n/cm2 (1 MeV equivalent);</p> <p>d.4. An uncorrected single event upset sensitivity of 1 x 10–10 errors/bit/day or less, for the CREME–MC geosynchronous orbit, Solar Minimum Environment for heavy ion flux; and</p> <p>d.5. An uncorrected single event upset sensitivity of 1 x 10–3 errors/part or less for a fluence of 1 x 107 protons/cm2 for proton energy greater than 50 MeV.</p>	<p>x.1. Enumerated or controlled in the USML or elsewhere within ECCNs 9A515 or 9A004;</p> <p>x.2. Microelectronic circuits and discrete electronic components;</p> <p>x.3. Described in ECCNs 7A004 or 7A104;</p> <p>x.4. Described in an ECCN containing “space-qualified” as a control criterion (i.e., 3A001.b.1, 3A001.e.4, 3A002.g.1, 3A991.o, 3A992.b.3, 6A002.a.1, 6A002.b.2, 6A002.d.1, 6A004.c and .d, 6A008.j.1, 6A998.b, or 7A003.d.2);</p> <p>x.5. Microwave solid state amplifiers and microwave assemblies (refer to ECCN 3A001.b.4 for controls on these items);</p> <p>x.6. Travelling wave tube amplifiers (refer to ECCN 3A001.b.8 for controls on these items); or</p> <p>x.7. Elsewhere specified in ECCN 9A515.y.</p>	<p>RS applies to entire entry except: 9A610.b; parts and components controlled in 9A610.x if being exported or reexported for use in an aircraft controlled in 9A610.b; and 9A610.y.</p>	<p>RS Column 1.</p>
<p>e. Microelectronic circuits (e.g., integrated circuits, microcircuits, or MOSFETs) and discrete electronic components that are rated, certified, or otherwise specified or described as meeting or exceeding the characteristics in either paragraph e.1 or e.2, AND “specially designed” for defense articles controlled by USML Category XV or items controlled by ECCNs 9A004.u or 9A515:</p> <p>e.1. A total dose ≥1 x 105 Rads (Si) (1 x 103 Gy(Si)) and &lt;5 x 105 Rads (Si) (5 x 103 Gy(Si)); and a single event effect (SEE) (i.e., single event latchup (SEL), single event burnout (SEB), or single event gate rupture (SEGR)) immunity to a linear energy transfer (LET) ≥80 MeV-cm2/mg; or</p> <p>e.2. A total dose ≥5 x 105 Rads (Si) (5 x 103 Gy (Si)) and not described in 9A515.d.</p>	<p>“space-qualified” as a control criterion (i.e., 3A001.b.1, 3A001.e.4, 3A002.g.1, 3A991.o, 3A992.b.3, 6A002.a.1, 6A002.b.2, 6A002.d.1, 6A004.c and .d, 6A008.j.1, 6A998.b, or 7A003.d.2);</p> <p>x.5. Microwave solid state amplifiers and microwave assemblies (refer to ECCN 3A001.b.4 for controls on these items);</p> <p>x.6. Travelling wave tube amplifiers (refer to ECCN 3A001.b.8 for controls on these items); or</p> <p>x.7. Elsewhere specified in ECCN 9A515.y.</p>	<p>RS applies to 9A610.y.</p> <p>MT applies to 9A610.t, .u, .v, and .w.</p> <p>AT applies to entire entry.</p> <p>UN applies to entire entry except 9A610.y.</p>	<p>China, Russia, or Venezuela (see § 742.6(a)(7)).</p> <p>MT Column 1.</p> <p>AT Column 1.</p> <p>See § 746.1(b) for UN controls.</p>
<p>Note 1 to 9A515.d and .e: Application specific integrated circuits (ASICs), integrated circuits developed and produced for a specific application or function, specifically designed or modified for defense articles and not in normal commercial use are controlled by Category XI(c) of the USML regardless of characteristics.</p> <p>Note 2 to 9A515.d and .e: See 3A001.a for controls on radiation-hardened microelectronic circuits “subject to the EAR” that are not controlled by 9A515.d or 9A515.e.</p>	<p>“Parts,” “components,” “accessories,” and “attachments” specified in USML subcategory XV(e) or enumerated in other USML categories are subject to the controls of that paragraph or category.</p> <p>y. Items that would otherwise be within the scope of ECCN 9A515.x but that have been identified in an interagency-cleared commodity classification (CCATS) pursuant to § 748.3(e) as warranting control in 9A515.y.</p>	<p>UN applies to entire entry except 9A610.y.</p>	<p>See § 746.1(b) for UN controls.</p>
<p>f. Pressure suits (i.e., space suits) capable of operating at altitudes 55,000 feet above sea level.</p> <p>g. Remote sensing components “specially designed” for “spacecraft” described in ECCNs 9A515.a.1 through 9A515.a.4 as follows:</p> <p>g.1. Space-qualified optics (i.e., lens, mirror, membrane having active properties (e.g., adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;</p> <p>g.2. Optical bench assemblies “specially designed” for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft;” or</p> <p>g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1,</p>	<p>y. Items that would otherwise be within the scope of ECCN 9A515.x but that have been identified in an interagency-cleared commodity classification (CCATS) pursuant to § 748.3(e) as warranting control in 9A515.y.</p> <p>y.1. Discrete electronic components not specified in 9A515.e;</p> <p>y.2. Space grade or for spacecraft applications thermistors;</p> <p>y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);</p> <p>y.4. Space grade or for spacecraft applications hall effect sensors;</p> <p>y.5. Space grade or for spacecraft applications subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors; and</p> <p>y.6. Space grade or for spacecraft applications flight cable assemblies.</p>	<p>UN applies to entire entry except 9A610.y.</p>	<p>See § 746.1(b) for UN controls.</p>
<p>g.1. Space-qualified optics (i.e., lens, mirror, membrane having active properties (e.g., adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;</p> <p>g.2. Optical bench assemblies “specially designed” for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft;” or</p> <p>g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1,</p>	<p>y.1. Discrete electronic components not specified in 9A515.e;</p> <p>y.2. Space grade or for spacecraft applications thermistors;</p> <p>y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);</p> <p>y.4. Space grade or for spacecraft applications hall effect sensors;</p> <p>y.5. Space grade or for spacecraft applications subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors; and</p> <p>y.6. Space grade or for spacecraft applications flight cable assemblies.</p>	<p>UN applies to entire entry except 9A610.y.</p>	<p>See § 746.1(b) for UN controls.</p>
<p>g.1. Space-qualified optics (i.e., lens, mirror, membrane having active properties (e.g., adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;</p> <p>g.2. Optical bench assemblies “specially designed” for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft;” or</p> <p>g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1,</p>	<p>y.1. Discrete electronic components not specified in 9A515.e;</p> <p>y.2. Space grade or for spacecraft applications thermistors;</p> <p>y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);</p> <p>y.4. Space grade or for spacecraft applications hall effect sensors;</p> <p>y.5. Space grade or for spacecraft applications subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors; and</p> <p>y.6. Space grade or for spacecraft applications flight cable assemblies.</p>	<p>UN applies to entire entry except 9A610.y.</p>	<p>See § 746.1(b) for UN controls.</p>
<p>g.1. Space-qualified optics (i.e., lens, mirror, membrane having active properties (e.g., adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;</p> <p>g.2. Optical bench assemblies “specially designed” for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft;” or</p> <p>g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1,</p>	<p>y.1. Discrete electronic components not specified in 9A515.e;</p> <p>y.2. Space grade or for spacecraft applications thermistors;</p> <p>y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);</p> <p>y.4. Space grade or for spacecraft applications hall effect sensors;</p> <p>y.5. Space grade or for spacecraft applications subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors; and</p> <p>y.6. Space grade or for spacecraft applications flight cable assemblies.</p>	<p>UN applies to entire entry except 9A610.y.</p>	<p>See § 746.1(b) for UN controls.</p>
<p>g.1. Space-qualified optics (i.e., lens, mirror, membrane having active properties (e.g., adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;</p> <p>g.2. Optical bench assemblies “specially designed” for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft;” or</p> <p>g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1,</p>	<p>y.1. Discrete electronic components not specified in 9A515.e;</p> <p>y.2. Space grade or for spacecraft applications thermistors;</p> <p>y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);</p> <p>y.4. Space grade or for spacecraft applications hall effect sensors;</p> <p>y.5. Space grade or for spacecraft applications subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors; and</p> <p>y.6. Space grade or for spacecraft applications flight cable assemblies.</p>	<p>UN applies to entire entry except 9A610.y.</p>	<p>See § 746.1(b) for UN controls.</p>
<p>g.1. Space-qualified optics (i.e., lens, mirror, membrane having active properties (e.g., adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;</p> <p>g.2. Optical bench assemblies “specially designed” for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft;” or</p> <p>g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1,</p>	<p>y.1. Discrete electronic components not specified in 9A515.e;</p> <p>y.2. Space grade or for spacecraft applications thermistors;</p> <p>y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);</p> <p>y.4. Space grade or for spacecraft applications hall effect sensors;</p> <p>y.5. Space grade or for spacecraft applications subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors; and</p> <p>y.6. Space grade or for spacecraft applications flight cable assemblies.</p>	<p>UN applies to entire entry except 9A610.y.</p>	<p>See § 746.1(b) for UN controls.</p>
<p>g.1. Space-qualified optics (i.e., lens, mirror, membrane having active properties (e.g., adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;</p> <p>g.2. Optical bench assemblies “specially designed” for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft;” or</p> <p>g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1,</p>	<p>y.1. Discrete electronic components not specified in 9A515.e;</p> <p>y.2. Space grade or for spacecraft applications thermistors;</p> <p>y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);</p> <p>y.4. Space grade or for spacecraft applications hall effect sensors;</p> <p>y.5. Space grade or for spacecraft applications subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors; and</p> <p>y.6. Space grade or for spacecraft applications flight cable assemblies.</p>	<p>UN applies to entire entry except 9A610.y.</p>	<p>See § 746.1(b) for UN controls.</p>

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

LVS: \$1,500  
GBS: N/A

**Special Conditions for STA**

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for any item in 9A610.a (i.e., “end item” military aircraft), unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for 9x515 and “600 series” items). (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 9A610.

**List of Items Controlled**

Related Controls: (1) Military aircraft and related articles that are enumerated in USML Category VIII, and technical data (including software) directly related thereto, are subject to the ITAR. (2) See ECCN 0A919 for controls on foreign-made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content. (3) See USML Category XIX and ECCN 9A619 for controls on military aircraft gas turbine engines and related items.

Related Definitions: In paragraph .y of this entry, the term ‘fluid’ includes liquids and gases.

**Items:**

a. ‘Military Aircraft’ “specially designed” for a military use that are not enumerated in USML paragraph VIII(a).

**Note 1:** For purposes of paragraph .a the term 'military aircraft' means the LM-100J aircraft and any aircraft "specially designed" for a military use that are not enumerated in USML paragraph VIII(a). The term includes: Trainer aircraft; cargo aircraft; utility fixed wing aircraft; military helicopters; observation aircraft; military non-expansive balloons and other lighter than air aircraft; and unarmed military aircraft, regardless of origin or designation. Aircraft with modifications made to incorporate safety of flight features or other FAA or NTSB modifications such as transponders and air data recorders are "unmodified" for the purposes of this paragraph .a.

**Note 2:** 9A610.a does not control 'military aircraft' that:

a. Were first manufactured before 1946;  
 b. Do not incorporate defense articles enumerated or otherwise described on the U.S. Munitions List, unless the items are required to meet safety or airworthiness standards of a Wassenaar Arrangement Participating State; and  
 c. Do not incorporate weapons enumerated or otherwise described on the U.S. Munitions List, unless inoperable and incapable of being returned to operation.

b. L-100 aircraft manufactured prior to 2013.

c.-d. [Reserved]

e. Mobile aircraft arresting and engagement runway systems for aircraft controlled by either USML Category VIII(a) or ECCN 9A610.a.

f. Pressure refueling equipment and equipment that facilitates operations in confined areas, "specially designed" for aircraft controlled by either USML paragraph VIII(a) or ECCN 9A610.a.

g. Aircrew life support equipment, aircrew safety equipment and other devices for emergency escape from aircraft controlled by either USML paragraph VIII(a) or ECCN 9A610.a.

h. Parachutes, paragliders, complete parachute canopies, harnesses, platforms, electronic release mechanisms, "specially designed" for use with aircraft controlled by either USML paragraph VIII(a) or ECCN 9A610.a, and "equipment" "specially designed" for military high altitude parachutists, such as suits, special helmets, breathing systems, and navigation equipment.

i. Controlled opening equipment or automatic piloting systems, designed for parachuted loads.

j. Ground effect machines (GEMS), including surface effect machines and air cushion vehicles, "specially designed" for use by a military.

k. through s. [Reserved]

t. Composite structures, laminates, and manufactures thereof "specially designed" for unmanned aerial vehicles controlled under USML Category VIII(a) with a range equal to or greater than 300 km.

**Note to paragraph .t:** Composite structures, laminates, and manufactures thereof "specially designed" for unmanned aerial vehicles controlled under USML Category VIII(a) with a maximum range less than 300 km are controlled in paragraph .x of this entry.

u. Apparatus and devices "specially designed" for the handling, control, activation and non-ship-based launching of UAVs or drones controlled by either USML paragraph VIII(a) or ECCN 9A610.a, and capable of a range equal to or greater than 300 km.

**Note to paragraph .u:** Apparatus and devices "specially designed" for the handling, control, activation and non-ship-based launching of UAVs or drones controlled by either USML paragraph VIII(a) or ECCN 9A610.a with a maximum range less than 300 km are controlled in paragraph .x of this entry.

v. Radar altimeters designed or modified for use in UAVs or drones controlled by either USML paragraph VIII(a) or ECCN 9A610.a., and capable of delivering at least 500 kilograms payload to a range of at least 300 km.

**Note to paragraph .v:** Radar altimeters designed or modified for use in UAVs or drones controlled by either USML paragraph VIII(a) or ECCN 9A610.a. that are not capable of delivering at least 500 kilograms payload to a range of at least 300 km are controlled in paragraph .x of this entry.

w.1. Pneumatic hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire and fly-by-light systems) and attitude control equipment designed or modified for UAVs controlled by either USML paragraph VIII(a) or ECCN 9A610.a., and capable of delivering at least 500 kilograms payload to a range of at least 300 km.

**Note to paragraph w.1:** Pneumatic, hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire and fly-by-light systems) and attitude control equipment designed or modified for UAVs controlled by either USML paragraph VIII(a) or ECCN 9A610.a., not capable of delivering at least 500 kilograms payload to a range of at least 300 km are controlled in paragraph .x of this entry.

w.2. Flight control servo valves designed or modified for the systems in 9A610.w.1 and designed or modified to operate in a vibration environment greater than 10g rms over the entire range between 20Hz and 2 kHz.

**Note to paragraph .w:** Paragraphs 9A610.w.1. and 9A610.w.2. include the systems, equipment and valves designed or modified to enable operation of manned aircraft as unmanned aerial vehicles.

x. "Parts," "components," "accessories," and "attachments" that are "specially designed" for a commodity enumerated or otherwise described in ECCN 9A610 (except for 9A610.y) or a defense article enumerated or otherwise described in USML Category VIII and not elsewhere specified on the USML or in 9A610.y, 9A619.y, or 3A611.y.

y. Specific "parts," "components," "accessories," and "attachments" "specially designed" for a commodity subject to control in this entry, ECCN 9A619, or for a defense article in USML Categories VIII or XIX and not elsewhere specified in the USML or the CCL, and other aircraft commodities

"specially designed" for a military use, as follows, and "parts," "components," "accessories," and "attachments" "specially designed" therefor:

- y.1. Aircraft tires;
- y.2. Analog gauges and indicators;
- y.3. Audio selector panels;
- y.4. Check valves for hydraulic and pneumatic systems;
- y.5. Crew rest equipment;
- y.6. Ejection seat mounted survival aids;
- y.7. Energy dissipating pads for cargo (for pads made from paper or cardboard);
- y.8. Fluid filters and filter assemblies;
- y.9. Galleys;
- y.10. Fluid hoses, straight and unbent lines (for a commodity subject to control in this entry or defense article in USML Category VIII) and fittings, couplings, clamps (for a commodity subject to control in this entry or defense article in USML Category VIII) and brackets therefor;
- y.11. Lavatories;
- y.12. Life rafts;
- y.13. Magnetic compass, magnetic azimuth detector;
- y.14. Medical litter provisions;
- y.15. Cockpit or cabin mirrors;
- y.16. Passenger seats including palletized seats;
- y.17. Potable water storage systems;
- y.18. Public address (PA) systems;
- y.19. Steel brake wear pads (does not include sintered mix or carbon/carbon materials);
- y.20. Underwater locator beacons;
- y.21. Urine collection bags/pads/cups/pumps;
- y.22. Windshield washer and wiper systems;
- y.23. Filtered and unfiltered panel knobs, indicators, switches, buttons, and dials;
- y.24. Lead-acid and Nickel-Cadmium batteries;
- y.25. Propellers, propeller systems, and propeller blades used with reciprocating engines;
- y.26. Fire extinguishers;
- y.27. Flame and smoke/CO2 detectors;
- y.28. Map cases;
- y.29. 'Military Aircraft' that were first manufactured from 1946 to 1955 that do not incorporate defense articles enumerated or otherwise described on the U.S. Munitions List, unless the items are required to meet safety or airworthiness standards of a Wassenaar Arrangement Participating State; and do not incorporate weapons enumerated or otherwise described on the U.S. Munitions List, unless inoperable and incapable of being returned to operation;
- y.30. "Parts," "components," "accessories," and "attachments," other than electronic items or navigation equipment, for use in or with a commodity controlled by ECCN 9A610.h;
- y.31. Identification plates and nameplates; and
- y.32. Fluid manifolds.

#### 9A619 Military gas turbine engines and related commodities (see List of Items Controlled).

#### License Requirements

Reason for Control: NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 9A619.y.	NS Column 1.
RS applies to entire entry except 9A619.y.	RS Column 1.
RS applies to 9A619.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 9A619.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

LVS: \$1,500  
GBS: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in ECCN 9A619.

**List of Items Controlled**

*Related Controls:* (1) Military gas turbine engines and related articles that are enumerated or otherwise described in USML Category XIX, and technical data (including software) directly related thereto, are subject to the jurisdiction of the International Traffic in Arms Regulations (ITAR). (2) Gas turbine engines designated 501–D22 are controlled in ECCN 9A991.d regardless of the aircraft type into which they will be installed. (3) See ECCN 0A919 for foreign-made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content. (4) “Parts,” “components,” “accessories,” and “attachments” specified in USML Category XIX(f) are subject to the controls of that paragraph. (5) “Parts,” “components,” “accessories,” and “attachments” specified in ECCN 9A619.y are subject to the controls of that paragraph.

*Related Definitions:* In paragraph .y of this entry, the term “fluid” includes liquids and gases.

*Items:*

a. “Military Gas Turbine Engines” “specially designed” for a military use that are not controlled in USML Category XIX(a), (b), (c), or (d).

**Note:** For purposes of ECCN 9A619.a, the term “military gas turbine engines” means gas turbine engines “specially designed” for “end items” enumerated in USML Categories VI, VII or VIII or on the CCL under ECCNs 0A606, 8A609 or 9A610.

b. Digital engine controls (e.g., Full Authority Digital Engine Controls (FADEC) and Digital Electronic Engine Controls (DEEC)) “specially designed” for gas turbine engines controlled in this ECCN 9A619.

c. If “specially designed” for gas turbine engines controlled in 9A619.a, hot section components (i.e., combustion chambers and liners; high pressure turbine blades, vanes, disks and related cooled structure; cooled low pressure turbine blades, vanes, disks and

related cooled structure; cooled augmenters; and cooled nozzles);  
d. If “specially designed” for gas turbine engines controlled in 9A619.a, uncooled turbine blades, vanes, disks, and tip shrouds;  
e. If “specially designed” for gas turbine engines controlled in 9A619.a, combustor cowls, diffusers, domes, and shells;  
f. Engine monitoring systems (i.e., those that conduct prognostics, diagnostics, and monitor health) “specially designed” for gas turbine engines and components controlled in this ECCN 9A619.  
g. through w. [RESERVED]  
x. Parts,” “components,” “accessories,” and “attachments” that are “specially designed” for a commodity controlled by this ECCN 9A619 (other than ECCN 9A619.c) or for a defense article enumerated in USML Category XIX and not specified elsewhere on the USML or in ECCN 3A611.y, 9A610.y or 9A619.y.

**Note to paragraph .x:** “Parts,” “components,” “accessories,” and “attachments” specified in USML subcategory XIX(f) are subject to the controls of that paragraph. “Parts,” “components,” “accessories,” and “attachments” specified in ECCN 3A611.y, 9A610.y or 9A619.y are subject to the controls of that paragraph.

y. Specific “parts,” “components,” “accessories,” and “attachments” “specially designed” for a commodity subject to control in this entry, ECCN 9A610, or for a defense article in USML Category VIII or Category XIX and not elsewhere specified on the USML or in the CCL, and other commodities, as follows, and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor:

- y.1. Oil tank and reservoirs;
- y.2. Oil lines and tubes;
- y.3. Fluid hoses, and lines (for a commodity subject to control in this entry or a defense article in USML Category XIX), fittings, couplings, and brackets therefor;
- y.4. Fluid filters and filter assemblies;
- y.5. Clamps (for a commodity subject to control in this entry or a defense article in USML Category XIX);
- y.6. Shims;
- y.7. Identification plates and nameplates;
- y.8. Fluid manifolds; and
- y.9. Check valves for fluid systems.

\* \* \* \* \*  
**9B619 Test, inspection, and production “equipment” and related commodities “specially designed” for the “development” or “production” of commodities enumerated or otherwise described in ECCN 9A619 or USML Category XIX (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 9B619.y.	NS Column 1.

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
RS applies to entire entry except 9B619.y.	RS Column 1.
RS applies to 9B619.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 9B619.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

LVS: \$1,500  
GBS: N/A

**Special Conditions for STA**

STA: Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in ECCN 9B619.

**List of Items Controlled**

*Related Controls:* USML Category XIX(f)(1) controls “parts,” “components,” “accessories,” and “attachments” “specially designed” for the engines described in Category XIX(f)(1), but does not control the commodities enumerated or otherwise described in ECCN 9B619. USML Category XIX(f)(2)–(11) controls other engine “parts,” “components,” “accessories,” “attachments,” and “systems.”

*Related Definitions:* N/A

*Items:*

a. Test, inspection, and production “equipment” “specially designed” for the “production,” “development,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities enumerated or otherwise described in ECCN 9A619 (except for 9A619.y) or in USML Category XIX, and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor.

b. Equipment, cells, or stands “specially designed” for testing, analysis and fault isolation of engines, “systems,” “components,” “parts,” “accessories,” and “attachments” enumerated or otherwise described in ECCN 9A619 (except for 9A619.y) on the CCL or in Category XIX on the USML.

c. through x. [Reserved]

y. Bearing pullers “specially designed” for the “production” or “development” of commodities enumerated or otherwise described in ECCN 9A619 (except for 9A619.y) or USML Category XIX and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor.

\* \* \* \* \*

**9D515 “Software” “specially designed” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishing of “spacecraft” and related commodities, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 9D515.y.	NS Column 1.
RS applies to entire entry except 9D515.y.	RS Column 1.
RS applies to 9D515.y, except to Russia for use in, with, or for the International Space Station (ISS), including launch to the ISS.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.

#### List Based License Exceptions (See Part 740 for a Description of All License Exceptions)

TSR: N/A

#### Special Conditions for STA

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for 9D515.b, .d, or .e. (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any "software" in 9D515.

#### List of Items Controlled

*Related Controls:* "Software" directly related to articles enumerated in USML Category XV is subject to the control of USML paragraph XV(f). See also ECCNs 3D001, 6D001, 6D002, and 6D991 for controls of specific software "specially designed" for certain "space-qualified" items.

*Related Definitions:* N/A

#### Items:

a. "Software" (other than "software" controlled in paragraphs .b, .d, or .e of this entry) "specially designed" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled by ECCN 9A515 (except 9A515.d or .e) or 9B515.

b. "Source code" that:

b.1. Contains the algorithms or control principles (e.g., for clock management), precise orbit determination (e.g., for ephemeris or pseudo range analysis), signal construct (e.g., pseudo-random noise (PRN) anti-spoofing) "specially designed" for items controlled by ECCN 9A515;

b.2. Is "specially designed" for the integration, operation, or control of items controlled by ECCN 9A515;

b.3. Contains algorithms or modules "specially designed" for system, subsystem, component, part, or accessory calibration, manipulation, or control of items controlled by ECCN 9A515;

b.4. Is "specially designed" for data assemblage, extrapolation, or manipulation of items controlled by ECCN 9A515;

b.5. Contains the algorithms or control laws "specially designed" for attitude, position, or flight control of items controlled in ECCN 9A515; or

b.6. Is "specially designed" for built-in test and diagnostics for items controlled by ECCN 9A515.

c. [Reserved]

d. "Software" "specially designed" for the "development," "production," operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.d.

e. "Software" "specially designed" for the "development," "production," operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.e.

f. through x. [Reserved]

y. Specific "software" "specially designed" for the "development," "production," operation, or maintenance of commodities enumerated in ECCN 9A515.y.

\* \* \* \* \*

**9D610 Software "specially designed" for the "development," "production," operation, or maintenance of military aircraft and related commodities controlled by 9A610, equipment controlled by 9B610, or materials controlled by 9C610 (see List of Items Controlled).**

#### License Requirements

*Reason for Control:* NS, RS, MT, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 9D610.y.	NS Column 1.
MT applies to software "specially designed" for the operation, installation, maintenance, repair, overhaul, or refurbishing of commodities controlled for MT reasons in 9A610 or 9B610.	MT Column 1.
RS applies to entire entry except 9D610.y.	RS Column 1.
RS applies to 9D610.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 9D610.y.	See § 746.1(b) for UN controls.

#### List Based License Exceptions (See Part 740 for a Description of All License Exceptions)

TSR: N/A

#### Special Conditions for STA

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for 9D610.b. (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any software in 9D610.

#### List of Items Controlled

*Related Controls:* Software directly related to articles enumerated or otherwise described in USML Category VIII is subject to the control of USML paragraph VIII(i).

*Related Definitions:* N/A

#### Items:

a. "Software" (other than software controlled in paragraphs .b or .y of this entry) "specially designed" for the "development," "production," operation, or maintenance of commodities controlled by ECCN 9A610, ECCN 9B610, or ECCN 9C610.

b. "Software" "specially designed" for the "development" or "production" of any of the following:

b.1. Static structural members;

b.2. Exterior skins, removable fairings, non-removable fairings, radomes, access doors and panels, and in-flight opening doors;

b.3. Control surfaces, leading edges, trailing edges, and leading edge flap seals;

b.4. Leading edge flap actuation system commodities (i.e., power drive units, rotary geared actuators, torque tubes, asymmetry brakes, position sensors, and angle gearboxes) "specially designed" for fighter, attack, or bomber aircraft controlled in USML Category VIII;

b.5. Engine inlets and ducting;

b.6. Fatigue life monitoring systems "specially designed" to relate actual usage to the analytical or design spectrum and to compute amount of fatigue life "specially designed" for aircraft controlled by either USML subcategory VIII(a) or ECCN 9A610.a, except for Military Commercial Derivative Aircraft;

b.7. Landing gear, and "parts" and "components" "specially designed" therefor, "specially designed" for use in aircraft weighing more than 21,000 pounds controlled by either USML subcategory VIII(a) or ECCN 9A610.a, except for Military Commercial Derivative Aircraft;

b.8. Conformal fuel tanks and "parts" and "components" "specially designed" therefor;

b.9. Electrical "equipment," "parts," and "components" "specially designed" for electro-magnetic interference (EMI)—i.e., conducted emissions, radiated emissions, conducted susceptibility and radiated susceptibility—protection of aircraft that conform to the requirements of MIL-STD-461;

b.10. HOTAS (Hand-on Throttle and Stick) controls, HOCAS (Hands on Collective and Stick), Active Inceptor Systems (i.e., a combination of Active Side Stick Control Assembly, Active Throttle Quadrant Assembly, and Inceptor Control Unit), rudder pedal assemblies for digital flight control systems, and parts and components "specially designed" therefor;

b.11. Integrated Vehicle Health Management Systems (IVHMS), Condition Based Maintenance (CBM) Systems, and Flight Data Monitoring (FDM) systems;

b.12. Equipment "specially designed" for system prognostic and health management of aircraft;

b.13. Active Vibration Control Systems; or

b.14. Self-sealing fuel bladders "specially designed" to pass a .50 caliber or larger gunfire test (MIL-DTL-5578, MIL-DTL-27422).

c. to x. [Reserved]

y. Specific "software" "specially designed" for the "development," "production," operation, or maintenance of commodities enumerated in ECCN 9A610.y.

**9D619 Software "specially designed" for the "development," "production,"**

**operation or maintenance of military gas turbine engines and related commodities controlled by 9A619, equipment controlled by 9B619, or materials controlled by 9C619 (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, RS, AT, UN

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 9D619.y.	NS Column 1.
RS applies to entire entry except 9D619.y.	RS Column 1.
RS applies to 9D619.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 9D619.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

*TSR:* N/A

**Special Conditions for STA**

*STA:* (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for 9D619.b. (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any software in ECCN 9D619.

**List of Items Controlled**

*Related Controls:* Software directly related to articles enumerated or otherwise described in USML Category XIX is subject to the control of USML paragraph XIX(g).

*Related Definitions:* N/A

*Items:*

a. “Software” (other than software controlled in paragraph .b of this entry) “specially designed” for the “development,” “production,” operation, or maintenance of commodities controlled by ECCN 9A619 (except 9A619.y), ECCN 9B619 (except 9B619.y), or ECCN 9C619.

b. “Software” “specially designed” for the “development” or “production” of any of the following:

b.1. Front, turbine center, and exhaust frames;

b.2. Low pressure compressor (*i.e.*, fan) “components” and “parts” as follows: nose cones, casings, blades, vanes, spools, shrouds, blisks, shafts and disks;

b.3. High pressure compressor “components” and “parts” as follows: casings, blades, vanes, spools, shrouds, blisks, shafts, disks, and impellers;

b.4. Combustor “components” and “parts” as follows: casings, fuel nozzles, swirlers, swirler cups, deswirlers, valve injectors, igniters, diffusers, liners, chambers, cowlings, domes and shells;

b.5. High pressure turbine “components” and “parts” as follows: casings, shafts, disks, blades, vanes, nozzles, and tip shrouds;

b.6. Low pressure turbine “components” and “parts” as follows: casings, shafts, disks, blades, vanes, nozzles, and tip shrouds;

b.7. Augmentor “components” and “parts” as follows: casings, flame holders, spray bars, pilot burners, augmentor fuel controls, flaps (external, convergent, and divergent), guide and synchronization rings, and flame detectors and sensors;

b.8. Mechanical “components” and “parts” as follows: fuel metering units and fuel pump metering units, valves (fuel throttle, main metering, oil flow management), heat exchangers (air/air, fuel/air, fuel/oil), debris monitoring (inlet and exhaust), seals (carbon, labyrinth, brush, balance piston, and knife-edge), permanent magnetic alternator and generator, eddy current sensors;

b.9. Torquemeter assembly (*i.e.*, housing, shaft, reference shaft, and sleeve);

b.10. Digital engine control systems (*e.g.*, Full Authority Digital Engine Controls (FADEC) and Digital Electronic Engine Controls (DEEC)) “specially designed” for gas turbine engines controlled in this ECCN; or

b.11. Engine monitoring systems (*i.e.*, prognostics, diagnostics, and health) “specially designed” for gas turbine engines and components controlled in this ECCN.

c. to x. [RESERVED]

y. Specific “software” “specially designed” for the “development,” “production,” operation, or maintenance of commodities enumerated in ECCN 9A619.y or 9B619.y.

\* \* \* \* \*

**9E515 “Technology” “required” for the “development,” “production,” operation, installation, repair, overhaul, or refurbishing of “spacecraft” and related commodities, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, MT, RS, AT

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>
NS applies to entire entry except 9E515.y.	NS Column 1.
MT applies to technology for items in 9A515.d, 9A515.e.2, and 9B515.a controlled for MT reasons.	MT Column 1.
RS applies to entire entry except 9E515.y.	RS Column 1.
RS applies to 9E515.y, except to Russia for use in, with, or for the International Space Station (ISS), including launch to the ISS.	China, Russia, or Venezuela (see § 742.6(a)(7)).
AT applies to entire entry.	AT Column 1.

**License Requirement Note:** The Commerce Country Chart is not used for determining license requirements for “technology” classified ECCN 9E515.f. See § 742.6(a)(9),

which specifies that such “technology” is subject to a worldwide license requirement.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

*TSR:* N/A

**Special Conditions for STA**

*STA:* (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for ECCN 9E515.b, .d, .e, or .f unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for certain 9x515 and “600 series” items). (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any “technology” in 9E515.

**List of Items Controlled**

*Related Controls:* Technical data directly related to articles enumerated in USML Category XV are subject to the control of USML paragraph XV(f). See also ECCNs 3E001, 3E003, 6E001, and 6E002 for specific “space-qualified” items. See ECCNs 9E001 and 9E002 for technology for the International Space Station, the James Webb Space Telescope (JWST) and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor. See USML category XV(f) for controls on technical data and defense services related to launch vehicle integration.

*Related Definitions:* N/A

*Items:*

a. “Technology” “required” for the “development,” “production,” installation, repair (including on-orbit anomaly resolution and analysis beyond established procedures), overhaul, or refurbishing of commodities controlled by ECCN 9A515 (except 9A515.a.1, .a.2, .a.3, .a.4, .b, .d, .e, or .g), ECCN 9B515, or “software” controlled by ECCN 9D515.a.

b. “Technology” “required” for the “development,” “production,” failure analysis or anomaly resolution of software controlled by ECCN 9D515.b.

c. [Reserved]

d. “Technology” “required” for the “development,” “production,” operation, failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.d.

e. “Technology” “required” for the “development,” “production,” failure analysis or anomaly resolution of commodities controlled by ECCN 9A515.e.

f. “Technology” “required” for the “development,” “production,” installation, repair (including on-orbit anomaly resolution and analysis beyond established procedures), overhaul, or refurbishing of commodities controlled by ECCN 9A515.a.1, .a.2, .a.3, .a.4, or .g.

g. through x. [Reserved]

y. Specific “technology” “required” for the “production,” “development,” operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software enumerated in ECCN 9A515.y or 9D515.y.

**Note 1:** [RESERVED]

**Note 2:** *Activities and technology/technical data directly related to or required for the*



spaceflight (e.g., sub-orbital, orbital, lunar, interplanetary, or otherwise beyond Earth orbit) passenger or participant experience, regardless of whether the passenger or participant experience is for space tourism, scientific or commercial research, commercial manufacturing/production activities, educational, media, or commercial transportation purposes, are not subject to the ITAR or the EAR. Such activities and technology/technical data include those directly related to or required for:

(i) "Spacecraft" access, ingress, and egress, including the operation of all "spacecraft" doors, hatches, and airlocks;

(ii) physiological training (e.g., human-rated centrifuge training or parabolic flights, pressure suit or spacesuit training/operation);

(iii) medical evaluation or assessment of the spaceflight passenger or participant;

(iv) training for and operation by the passenger or participant of health and safety related hardware (e.g., seating, environmental control and life support, hygiene facilities, food preparation, exercise equipment, fire suppression, communications equipment, safety-related clothing or headgear) or emergency procedures;

(v) viewing of the interior and exterior of the spacecraft or terrestrial mock-ups;

(vi) observing "spacecraft" operations (e.g., pre-flight checks, landing, in-flight status);

(vii) training in "spacecraft" or terrestrial mock-ups for connecting to or operating passenger or participant equipment used for purposes other than operating the "spacecraft"; or

(viii) donning, wearing or utilizing the passenger's or participant's flight suit, pressure suit or spacesuit, and personal equipment.

\* \* \* \* \*

**9E610 Technology "required" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of military aircraft and related commodities controlled by 9A610, equipment controlled by 9B610, materials controlled by 9C610, or software controlled by 9D610 (see List of Items Controlled).**

**License Requirements**

Reason for Control: NS, RS, MT, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry except 9E610.y.	NS Column 1.
RS applies to entire entry except 9E610.y.	RS Column 1.
RS applies to 9E610.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).

Control(s)	Country chart (see Supp. No. 1 to part 738)
MT applies to "technology" "required" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software controlled for MT reasons in 9A610, 9B610, or 9D610 for MT reasons.	MT Column 1.
AT applies to entire entry.	AT Column 1.
UN applies to entire entry except 9E610.y.	See § 746.1(b) for UN controls.

**List Based License Exceptions (See Part 740 for a Description of All License Exceptions)**

TSR: N/A

**Special Conditions for STA**

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for 9E610.b. (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any technology in 9E610.

**List of Items Controlled**

Related Controls: Technical data directly related to articles enumerated or otherwise described in USML Category VIII are subject to the control of USML paragraph VIII(i).

Related Definitions: N/A

**Items:**

a. "Technology" (other than technology controlled by paragraphs .b or .y of this entry) "required" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software controlled by ECCN 9A610, 9B610, 9C610, or 9D610.

**Note:** "Build-to-print technology" "required" for the "production" of items described in paragraphs b.1 through b.15 of this entry is classified under 9E610.a.

b. "Technology" (other than "build-to-print technology") "required" for the "development" or "production" of any of the following:

- b.1. Static structural members;
- b.2. Exterior skins, removable fairings, non-removable fairings, radomes, access doors and panels, and in-flight opening doors;
- b.3. Control surfaces, leading edges, trailing edges, and leading edge flap seals;
- b.4. Leading edge flap actuation system commodities (i.e., power drive units, rotary geared actuators, torque tubes, asymmetry brakes, position sensors, and angle gearboxes) "specially designed" for fighter, attack, or bomber aircraft controlled in USML Category VIII;
- b.5. Engine inlets and ducting;
- b.6. Fatigue life monitoring systems "specially designed" to relate actual usage to

the analytical or design spectrum and to compute amount of fatigue life "specially designed" for aircraft controlled by either USML subcategory VIII(a) or ECCN 9A610.a, except for Military Commercial Derivative Aircraft;

b.7. Landing gear, and "parts" and "components" "specially designed" therefor, "specially designed" for use in aircraft weighing more than 21,000 pounds controlled by either USML subcategory VIII(a) or ECCN 9A610.a, except for Military Commercial Derivative Aircraft;

b.8. Conformal fuel tanks and "parts" and "components" "specially designed" therefor;

b.9. Electrical "equipment," "parts," and "components" "specially designed" for electro-magnetic interference (EMI)—i.e., conducted emissions, radiated emissions, conducted susceptibility and radiated susceptibility—protection of aircraft that conform to the requirements of MIL-STD-461;

b.10. HOTAS (Hand-on Throttle and Stick) controls, HOCAS (Hands on Collective and Stick), Active Inceptor Systems (i.e., a combination of Active Side Stick Control Assembly, Active Throttle Quadrant Assembly, and Inceptor Control Unit), rudder pedal assemblies for digital flight control systems, and parts and components "specially designed" therefor;

b.11. Integrated Vehicle Health Management Systems (IVHMS), Condition Based Maintenance (CBM) Systems, and Flight Data Monitoring (FDM) systems;

b.12. Equipment "specially designed" for system prognostic and health management of aircraft;

b.13. Active Vibration Control Systems;

b.14. Self-sealing fuel bladders "specially designed" to pass a .50 caliber or larger gunfire test (MIL-DTL-5578, MIL-DTL-27422); or

b.15. Technology "required" for the "development" or "production" of "parts" or "components" controlled in 9A610.x and "specially designed" for damage or failure-adaptive flight control systems controlled in Category VIII(h)(7) of the USML.

c. through x. [Reserved]

y. Specific "technology" "required" for the "production," "development," operation, installation, maintenance, repair, overhaul, or refurbishing of commodities or software enumerated in ECCN 9A610.y or 9D610.y.

**9E619 "Technology" "required" for the "development," "production," operation, installation, maintenance, repair, overhaul, or refurbishing of military gas turbine engines and related commodities controlled by 9A619, equipment controlled by 9B619, materials controlled by 9C619, or software controlled by 9D619 (see List of Items Controlled).**

**License Requirements**

Reason for Control: NS, RS, AT, UN

Control(s)	Country chart (see Supp. No. 1 to part 738)
NS applies to entire entry except 9E619.y.	NS Column 1.

<i>Control(s)</i>	<i>Country chart (see Supp. No. 1 to part 738)</i>	<b>Note:</b> “Build-to-print technology” “required” for the “production” of items described in paragraphs b.1 through b.10 of this entry is classified under 9E619.a.	
RS applies to entire entry except 9E619.y.	RS Column 1.	b. “Technology” (other than “build-to-print technology”) “required” for the “development” or “production” of any of the following: b.1. Front, turbine center, and exhaust frames; b.2. Low pressure compressor ( <i>i.e.</i> , fan) “components” and “parts” as follows: Nose cones and casings; b.3. High pressure compressor “components” and “parts” as follows: Casings; b.4. Combustor “components” and “parts” as follows: Casings, fuel nozzles, swirlers, swirler cups, deswirlers, valve injectors, and igniters; b.5. High pressure turbine “components” and “parts” as follows: Casings b.6. Low pressure turbine “components” and “parts” as follows: Casings; b.7. Augmentor “components” and “parts” as follows: Casings, flame holders, spray bars, pilot burners, augmentor fuel controls, flaps (external, convergent, and divergent), guide and synchronization rings, and flame detectors and sensors; b.8. Mechanical “components” and “parts” as follows: Fuel metering units and fuel pump metering units, valves (fuel throttle, main metering, oil flow management), heat exchangers (air/air, fuel/air, fuel/oil), debris monitoring (inlet and exhaust), seals (carbon, labyrinth, brush, balance piston, and “knife-edge”), permanent magnetic alternator and generator, eddy current sensors; b.9. Torquemeter assembly ( <i>i.e.</i> , housing, shaft, reference shaft, and sleeve); or b.10. Materials controlled by ECCN 9C619.b.	c. “Technology” “required” for the “development” or “production” of any of the following: c.1. Low pressure compressor ( <i>i.e.</i> , fan) “components” and “parts” as follows: blades, vanes, spools, shrouds, blisks, shafts and disks; c.2. High pressure compressor “components” and “parts” as follows: blades, vanes, spools, shrouds, blisks, shafts, disks, and impellers; c.3. Combustor “components” and “parts” as follows: diffusers, liners, chambers, cowlings, domes and shells; c.4. High pressure turbine “components” and “parts” as follows: shafts and disks, blades, vanes, nozzles, tip shrouds; c.5. Low pressure turbine “components” and “parts” as follows: shafts and disks, blades, vanes, nozzles, tip shrouds; c.6. Digital engine control systems ( <i>e.g.</i> , Full Authority Digital Engine Controls (FADEC) and Digital Electronic Engine Controls (DEEC)) “specially designed” for gas turbine engines controlled in this ECCN; or c.7. Engine monitoring systems ( <i>i.e.</i> , prognostics, diagnostics, and health) “specially designed” for gas turbine engines and components controlled in this ECCN. d. through x. [Reserved] y. Specific “technology” “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishment of commodities controlled by 9A619.y or 9B619.y, or “software” controlled by ECCN 9D619.y.
RS applies to 9E619.y.	China, Russia, or Venezuela (see § 742.6(a)(7)).		
AT applies to entire entry.	AT Column 1.		
UN applies to entire entry except 9E619.y.	See § 746.1(b) for UN controls.		
<b>List Based License Exceptions (See Part 740 for a Description of All License Exceptions)</b>			
TSR: N/A			
<b>Special Conditions for STA</b>			
STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for 9E619.b. or .c. (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any technology in ECCN 9E619.			
<b>List of Items Controlled</b>			
<i>Related Controls:</i> Technical data directly related to articles enumerated or otherwise described in USML Category XIX are subject to the control of USML Category XIX(g).			
<i>Related Definitions:</i> N/A			
<i>Items:</i>			
a. “Technology” (other than “technology” controlled by paragraphs .b and .c of this entry) “required” for the “development,” “production,” operation, installation, maintenance, repair, overhaul, or refurbishment of items controlled by ECCN 9A619 (except 9A619.y), ECCN 9B619 (except 9B619.y), ECCN 9C619, or ECCN 9D619 (except 9D619.y).			

Dated: May 1, 2020.

**Matthew S. Borman,**  
Deputy Assistant Secretary for Export Administration.

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