

systems” (Cat 7)—Control systems using air blown over aerodynamic surfaces to increase or control the forces generated by the surfaces.

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“Electronically steerable phased array antenna”. (Cat 6)—An antenna that forms a beam by means of phase coupling (*i.e.*, the beam direction is controlled by the complex excitation coefficients of the radiating elements) and the direction of that beam can be varied (both in transmission and reception) in azimuth or in elevation, or both, by application of an electrical signal.

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“Time-modulated ultra-wideband”. (Cat 5 part 1 and Cat 5 part 2) The technique in which very short precisely time-controlled RF pulses are modulated in accordance with communications data by shifting pulse positions (usually called Pulse Position Modulation, PPM) channelized or scrambled in accordance with pseudo-random noise codes by PPM, then transmitted and received in the direct pulse form without using any carrier frequencies, consequently having extremely low power density over ultra-wide frequency bands. It is also known as Impulse Radio.

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## PART 774—[AMENDED]

8. The authority citation for part 774 continues to read as follows:

**Authority:** 50 U.S.C. app. 2401 *et seq.*; 50 U.S.C. 1701 *et seq.*; 10 U.S.C. 7420; 10 U.S.C. 7430(e); 18 U.S.C. 2510 *et seq.*; 22 U.S.C. 287c; 22 U.S.C. 3201 *et seq.*; 22 U.S.C. 6004; 30 U.S.C. 185(s), 185(u); 42 U.S.C. 2139a; 42 U.S.C. 6212; 43 U.S.C. 1354; 46 U.S.C. app. 466c; 50 U.S.C. app. 5; Sec. 901–911, Pub. L. 106–387; Sec. 221, Pub. L. 107–56; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 14, 2002, 67 FR 53721, August 16, 2002.

9. In Supplement No. 1 to part 774 (the Commerce Control List), Category 2—Materials Processing, the following Export Control Classification Numbers (ECCNs) are amended:

(a) Revise the Heading of product group A at the beginning of Category 2 from “Equipment, Assemblies and Components” to read “Systems, Equipment and Components”;

(b) Revising the *Items* paragraph in the List of Items Controlled section of ECCNs 2A001 and 2B006;

(c) Revising the Heading, removing the *License Requirement Notes* paragraph at the end of the License requirements section, and revising the

*Items* paragraph of the List of Items Controlled section of ECCN 2B001; and  
(d) Revising the Heading of 2B003, to read as follows:

\* \* \* \* \*

### 2A001 Anti-friction bearings and bearing systems, as follows, (see List of Items Controlled) and components therefor.

\* \* \* \* \*

#### List of Items Controlled

*Unit:* \* \* \*

*Related Controls:* \* \* \*

*Related Definitions:* \* \* \*

*Items:*

**Note:** 2A001 does not control balls with tolerance specified by the manufacturer in accordance with ISO 3290 as grade 5 or worse.

a. Ball bearings and solid roller bearings having all tolerances specified by the manufacturer in accordance with ISO 492 Tolerance Class 4 (or ANSI/ABMA Std 20 Tolerance Class ABEC–7 or RBEC–7, or other national equivalents), or better, and having both rings and rolling elements (ISO 5593) made from monel or beryllium;

**Note:** 2A001.a does not control tapered roller bearings.

b. Other ball bearings and solid roller bearings having all tolerances specified by the manufacturer in accordance with ISO 492 Tolerance Class 2 (or ANSI/ABMA Std 20 Tolerance Class ABEC–9 or RBEC–9, or other national equivalents), or better;

**Note:** 2A001.b does not control tapered roller bearings.

c. Active magnetic bearing systems using any of the following:

c.1. Materials with flux densities of 2.0 T or greater and yield strengths greater than 414 MPa;

c.2. All-electromagnetic 3D homopolar bias designs for actuators; or

c.3. High temperature (450 K (177°C) and above) position sensors.

### 2B001 Machine tools (see List of Items Controlled) and any combination thereof, for removing (or cutting) metals, ceramics or “composites”, which, according to the manufacturer’s technical specification, can be equipped with electronic devices for “numerical control”.

\* \* \* \* \*

#### List of Items Controlled

*Unit:* \* \* \*

*Related Controls:* \* \* \*

*Related Definitions:* \* \* \*

*Items:*

**Note 1:** 2B001 does not control special purpose machine tools limited to the manufacture of gears. For such machines, see 2B003.

**Note 2:** 2B001 does not control special purpose machine tools limited to the manufacture of any of the following parts:

a. Crank shafts or cam shafts;

b. Tools or cutters;

c. Extruder worms;

d. Engraved or faceted jewellery parts.

a. Machine tools for turning, having all of the following characteristics:

a.1. Positioning accuracy with “all compensations available” of less (better) than 6 µm along any linear axis; and

a.2. Two or more axes which can be coordinated simultaneously for “contouring control”;

**Note:** 2B001.a does not control turning machines specially designed for the production of contact lenses.

b. Machine tools for milling, having any of the following characteristics:

b.1. Having all of the following:

b.1.a. Positioning accuracy with “all compensations available” of less (better) than 6 µm along any linear axis; and

b.1.b. Three linear axes plus one rotary axis which can be coordinated simultaneously for “contouring control”;

b.2. Five or more axes which can be coordinated simultaneously for “contouring control”;

b.3. A positioning accuracy for jig boring machines, with “all compensations available”, of less (better) than 4 µm along any linear axis; or

b.4. Fly cutting machines, having all of the following characteristics:

b.4.a. Spindle “run-out” and “camming” less (better) than 0.0004 mm TIR; and

b.4.b. Angular deviation of slide movement (yaw, pitch and roll) less (better) than 2 seconds of arc, TIR, over 300 mm of travel.

c. Machine tools for grinding, having any of the following characteristics: c.1. Having all of the following:

c.1.a. Positioning accuracy with “all compensations available” of less (better) than 4 µm along any linear axis; and

c.1.b. Three or more axes which can be coordinated simultaneously for “contouring control”; or

c.2. Five or more axes which can be coordinated simultaneously for “contouring control”;

**Notes:** 2B001.c does not control grinding machines, as follows:

1. Cylindrical external, internal, and external-internal grinding machines having all the following characteristics:

a. Limited to cylindrical grinding; and

b. Limited to a maximum workpiece capacity of 150 mm outside diameter or length.

2. Machines designed specifically as jig grinders having any of following characteristics:

a. The c-axis is used to maintain the grinding wheel normal to the work surface; or

b. The a-axis is configured to grind barrel cams.

3. Surface grinders.

d. Electrical discharge machines (EDM) of the non-wire type which have two or more rotary axes which can be coordinated simultaneously for “contouring control”;

e. Machine tools for removing metals, ceramics or “composites” having all of the following characteristics:

e.1. Removing material by means of any of the following:

e.1.a. Water or other liquid jets, including those employing abrasive additives;