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Government of India
Ministry of Commerce & Industry
Department of Commerce
Directorate General of Foreign Trade
Udyog Bhavan

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Subject: Amendment in Appendix 3 (SCOMET items) to Schedule- 2 of ITC (HS) Classification of Export and Import Items, 2018

S.O.(E) In exercise of the powers conferred by Section 5 and Section 14A of the Foreign Trade (Development and Regulation) Act, 1992, as amended, read with Para 1.02 of the Foreign Trade Policy 2015-2020, the Central Government hereby makes the following amendment in Appendix 3 to Schedule -2 of ITC (HS) Classification of Export and Import Items 2018, as notified in DGFT Notification No. 17/2015-20 dated 03.07.2018 :

1. Under the heading, Commodity Identification Note of SCOMET, Note 2 shall be substituted as under:-

Note 2 Notwithstanding anything contained in Note 1, the following items, will be classified under the relevant description in Category 0:

- a) Radioactive materials covered under 6A007.;*
- b) Any material containing Beryllium or "Zirconium with Hafnium content less than 2000 ppm" as the major constituent, or more than 60% Hafnium by weight, or "Boron enriched in Boron-10 isotope" or Niobium or tantalum covered under 6A008.;*
- c) Nuclear power generating equipment or propulsion equipment, including "nuclear reactors", and components therefor covered under 6A009. and 6A017.;*
- d) Simulators specially designed for military "nuclear reactors" covered under 6A017.;*
- e) Any alloy with niobium as a major constituent in solid or powder form covered under 8C102.;*
- f) Uranium-titanium alloys covered under 8C104.;*
- g) Any material containing "Zirconium with Hafnium content less than 2000 ppm" or "Boron enriched in Boron-10 isotope" as the major constituent covered under 8C111.;*
- h) Plutonium and Neptunium covered under 8C112.'*

2. In the Glossary to the SCOMET list, the following expressions shall be substituted:

' "Contouring control"'

Two or more "numerically controlled" motions operating in accordance with instructions that specify the next required position and the required feed rates to that

position. These feed rates are varied in relation to each other so that a desired contour is generated. (Ref. International Organization for Standardization (ISO) 2806-(1994) as amended)'

‘ "Cryptography"'

The discipline which embodies principles, means and methods for the transformation of data in order to hide its information content, prevent its undetected modification or prevent its unauthorized use. "Cryptography" is limited to the transformation of information using one or more 'secret parameters' (e.g., crypto variables) or associated key management.

Notes

1. "Cryptography" does not include 'fixed' data compression or coding techniques.
2. "Cryptography" includes decryption.

Technical Notes

1. 'Secret parameter': a constant or key kept from the knowledge of others or shared only within a group.
2. 'Fixed': the coding or compression algorithm cannot accept externally supplied parameters (e.g., cryptographic or key variables) and cannot be modified by the user'

‘ “Numerical control”'

The automatic control of a process performed by a device that makes use of numeric data usually introduced as the operation is in progress. (Ref. ISO 2382 (2015))'

‘ “Resolution”'

The least increment of a measuring device; on digital instruments, the least significant bit. (Ref. American National Standards Institute (ANSI) B-89.1.12)'

‘ "Radiant sensitivity"'

Radiant sensitivity (mA/W) = 0.807 x (wavelength in nm) x Quantum Efficiency (QE).

Technical Note


QE is usually expressed as a percentage; however, for the purposes of this formula QE is expressed as a decimal number less than one, e.g., 78% is 0.78.'

‘ "Satellite navigation system"'

A system consisting of ground stations, a constellation of satellites, and receivers, that enables receiver locations to be calculated on the basis of signals received from the satellites. It includes Global Navigation Satellite Systems (GNSS) and Regional Navigation Satellite Systems (RNSS).'

‘ "Stability"'

Standard deviation (1 sigma) of the variation of a particular parameter from its calibrated value measured under stable temperature conditions. This can be expressed as a function of time.



Statement of Understanding

For gyroscopes and accelerometers, "stability" can be estimated by determining the Allan variance noise-analysis value at the integration period (i.e., sample time) consistent with the stated measurement period, which may include extrapolating the Allan variance noise analysis beyond the instability point into the rate/acceleration random walk or rate/acceleration ramp regions to an integration period consistent with the stated measurement period (Reference: IEEE Std 952-1997 [R2008] or IEEE Std 1293-1998 [R2008]).'

3. In the SCOMET Category 1B, after the SCOMET Entry 1B036 and the entry relating thereto, the following entries shall be substituted:

S. No.	SCOMET Entry	Name of the Chemical	Entry in CWC Schedule	CAS Numbers	ITC (HS) Codes
37.	1B037	Diphenyl Methyl Phosphonate	2B04	3747-58-0	29313900
38.	1B038	Others	-	-	-

4. SCOMET entry 4A002.c. shall be substituted as under:-

'Machine tools for grinding, having any of the following characteristics:

1. "Positioning accuracies" with all compensations available better (less) than 4 μm according to ISO 230/2 (1988) along any linear axis (overall positioning);
2. Two or more contouring rotary axes; or
3. Five or more axes which can be coordinated simultaneously for "contouring control".

Note Item 4A002.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 a maximum workpiece capacity of 150 mm outside diameter or length; and

b. Axes limited to x, z and c.


2. Jig grinders that do not have a z-axis or a w-axis with an overall "positioning accuracy" less (better) than 4 μm according to ISO 230/2 (1988).'

5. SCOMET entry 4A002.d. shall be substituted as under:-

‘Non-wire type Electrical Discharge Machines (EDM) that have two or more contouring rotary axes and that can be coordinated simultaneously for “contouring control”.

Notes 1 Stated “positioning accuracy” levels derived under the following procedures from measurements made according to ISO 230/2 (1988) or national equivalents may be used for each machine tool model if provided to, and accepted by, national authorities instead of individual machine tests.

Stated “positioning accuracy” levels are to be derived as follows:

- a. Select five machines of a model to be evaluated;
 - b. Measure the linear axis accuracies according to ISO 230/2 (1988);
 - c. Determine the accuracy values (A) for each axis of each machine. The method of calculating the accuracy value is described in the ISO 230/2 (1988) standard;
 - d. Determine the average accuracy value of each axis. This average value becomes the stated “positioning accuracy” of each axis for the model ($\hat{A}_x, \hat{A}_y...$);
 - e. Since Item 4A002. refers to each linear axis, there will be as many stated “positioning accuracy” values as there are linear axes;
 - f. If any axis of a machine tool not controlled by Items 4A002.a., 4A002.b., or 4A002.c. has a stated “positioning accuracy” of 6 μm or better (less) for grinding machines, and 8 μm or better (less) for milling and turning machines, both according to ISO 230/2 (1988), then the builder should be required to reaffirm the accuracy level once every eighteen months.
2. Item 4A002. does not control special purpose machine tools limited to the manufacture of any of the following parts:
- a. Gears;
 - b. Crankshafts or cam shafts;
 - c. Tools or cutters;
 - d. Extruder worms.
- 

6. In SCOMET entry 4A002, the Technical Notes, shall be substituted as under:-

Technical Notes

1. *Axis nomenclature shall be in accordance with ISO 841 (2001), "Numerical Control Machines - Axis and Motion Nomenclature".*
2. *Not counted in the total number of contouring axes are secondary parallel contouring axes (e.g., the w-axis on horizontal boring mills or a secondary rotary axis the centreline of which is parallel to the primary rotary axis).*
3. *Rotary axes do not necessarily have to rotate over 360°. A rotary axis can be driven by a linear device, e.g., a screw or a rack-and-pinion.*
4. *For the purposes of 4A002, the number of axes which can be coordinated simultaneously for "contouring control" is the number of axes along or around which, during processing of the workpiece, simultaneous and interrelated motions are performed between the workpiece and a tool. This does not include any additional axes along or around which other relative motions within the machine are performed, such as:
 - a. *Wheel-dressing systems in grinding machines;*
 - b. *Parallel rotary axes designed for mounting of separate workpieces;*
 - c. *Co-linear rotary axes designed for manipulating the same workpiece by holding it in a chuck from different ends.**
5. *A machine tool having at least 2 of the 3 turning, milling or grinding capabilities (e.g., a turning machine with milling capability) must be evaluated against each applicable entry, 4A002.a., 4A002.b. and 4A002.c.*
6. *Items 4A002.b.3. and 4A002.c.3. include machines based on a parallel linear kinematic design (e.g., hexapods) that have 5 or more axes none of which is a rotary axis.'*

7. SCOMET entry 4A003.b. shall be substituted as under:-

'Linear displacement measuring instruments, as follows:

1. Non-contact type measuring systems with a "resolution" equal to or better (less) than 0.2 μm within a measuring range up to 0.2 mm;
2. Linear variable differential transformer (LVDT) systems having both of the following characteristics:

- a.
 1. "Linearity" equal to or less (better) than 0.1% measured from 0 to the full operating range, for LVDTs with an operating range up to 5 mm; or
 2. "Linearity" equal to or less (better) than 0.1% measured from 0 to 5 mm for LVDTs with an operating range greater than 5 mm; and
 - b. Drift equal to or better (less) than 0.1% per day at a standard ambient test room temperature ± 1 K ($\pm 1^\circ\text{C}$);
3. Measuring systems having both of the following characteristics:
- a. Containing a laser; and
 - b. Capable of maintaining for at least 12 hours, over a temperature range of ± 1 K ($\pm 1^\circ\text{C}$) around a standard temperature and a standard pressure:
 1. A "resolution" over their full scale of 0.1 μm or better; and
 2. With a "measurement uncertainty" equal to or better (less) than $(0.2 + L/2000)$ μm (L is the measured length in mm);

Note Item 4A003.b.3. does not control measuring interferometer systems, without closed or open loop feedback, containing a laser to measure slide movement errors of machine tools, dimensional inspection machines, or similar equipment.

Technical Note

In Item 4A003.b.3. 'linear displacement' means the change of distance between the measuring probe and the measured object.'

8. SCOMET entry 6A004.a. shall be substituted as under:-

'Bombs, torpedoes, rockets, missiles, other explosive devices and charges and related equipment and accessories, as follows, and specially designed components therefor:

N.B.1. For guidance and navigation equipment, see 6A011.

N.B.2. For Aircraft Missile Protection Systems (AMPS), see 6A004.c.

- a. Bombs, torpedoes, grenades, smoke canisters, rockets, mines, missiles, depth charges, demolition-charges, demolition-devices, demolition-kits, "pyrotechnic" devices, cartridges and simulators (i.e., equipment simulating the characteristics of any of these items), specially designed for military use;

Note 6A004.a. includes:

- a. *Smoke grenades, fire bombs, incendiary bombs and explosive devices;*
- b. *Missile or rocket nozzles and re-entry vehicle nosetips.'*

9. SCOMET entry 6A005 shall be substituted as under:-

'Fire control, surveillance and warning equipment, and related systems, test and alignment and countermeasure equipment, as follows, specially designed for military use, and specially designed components and accessories therefor:

- a. Weapon sights, bombing computers, gun laying equipment and weapon control systems;
- b. Other fire control, surveillance and warning equipment, and related systems, as follows:
 1. Target acquisition, designation, range-finding, surveillance or tracking systems;
 2. Detection, recognition or identification equipment;
 3. Data fusion or sensor integration equipment;
- c. Countermeasure equipment for items specified by 6A005.a. or 6A005.b.;

Note *For the purposes of 6A005.c., countermeasure equipment includes detection equipment.*

- d. Field test or alignment equipment, specially designed for items specified by 6A005.a., 6A005.b. or 6A005.c.'

10. SCOMET entry 6A006 shall be substituted as under:-

'Ground vehicles and components, as follows:

N.B. *For guidance and navigation equipment, see 6A011.*

- a. Ground vehicles and components therefor, specially designed or modified for military use;

Note 1 6A006.a. includes:

- a. *Tanks and other military armed vehicles and military vehicles fitted with mountings for arms or equipment for mine laying or the launching of munitions specified by 6A004.;*
- b. *Armoured vehicles;*
- c. *Amphibious and deep water fording vehicles;*
- d. *Recovery vehicles and vehicles for towing or transporting ammunition or weapon systems and associated load handling equipment;*
- e. *Trailers.*

Note 2 *Modification of a ground vehicle for military use specified by 6A006.a. entails a structural, electrical or mechanical change*

involving one or more components that are specially designed for military use. Such components include:

- a. Pneumatic tyre casings of a kind specially designed to be bullet-proof;*
- b. Armoured protection of vital parts (e.g., fuel tanks or vehicle cabs);*
- c. Special reinforcements or mountings for weapons;*
- d. Black-out lighting.*

6A006. b. Other ground vehicles and components, as follows:

1. Vehicles having all of the following:
 - a. Manufactured or fitted with materials or components to provide ballistic protection equal to or better than level III (NIJ 0108.01, September 1985, or comparable national standard);
 - b. 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;
 - c. Gross Vehicle Weight Rating (GVWR) greater than 4,500 kg; and
 - d. Designed or modified for off-road use;
 - e. Mine-Protected vehicle
2. Components having all of the following:
 - a. Specially designed for vehicles specified in 6A006.b.1.; and
 - b. Providing ballistic protection equal to or better than level III (NIJ 0108.01, September 1985, or comparable national standard).

N.B. See also 6A013.a.

Note 1 6A006. does not apply to civil vehicles designed or modified for transporting money or valuables.

Note 2 6A006. does not apply to vehicles that meet all of the following:

- a. Were manufactured before 1946;
- b. Do not have items specified by the Munitions List and manufactured after 1945, except for reproductions of original components or accessories for the vehicle; and
- c. Do not incorporate weapons specified in 6A001., 6A002. or 6A004. unless they are inoperable and incapable of discharging a projectile.

11. SCOMET entry 6A008.a.6. shall be substituted as under:-

‘DADE (1,1-diamino-2,2-dinitroethylene, FOX-7) (CAS 145250-81-3);’

12. SCOMET entry 6A008.a.33. shall be substituted as under:-

‘ "Explosives" not listed elsewhere in 6A008.a. and having any of the following:

- a. Detonation velocity exceeding 8,700 m/s, at maximum density, or
- b. Detonation pressure exceeding 34 GPa (340 kbar);’

13. SCOMET entries 6A008.a.36. & 37. shall be substituted as under:-

‘36. TEX (4,10-Dinitro-2,6,8,12-tetraoxa-4,10-diazaisowurtzitane);

37. GUDN (Guanylurea dinitramide) FOX-12 (CAS 217464-38-5);’

14. After the SCOMET entry 6A008.a.4., and the entry relating thereto, a new SCOMET entry 6A008.a.43. shall be added as under:-

‘43. TKX-50 (Dihydroxylammonium 5,5'-bistetrazole-1,1'-diolate);’

15. SCOMET entry 6A008.c.12. shall be substituted as under:-

‘Fuel mixtures, "pyrotechnic" mixtures or "energetic materials", not specified elsewhere in 6A008, having all of the following:

- a. Containing greater than 0.5% of particles of any of the following:
 1. Aluminium;
 2. Beryllium;
 3. Boron;
 4. Zirconium;
 5. Magnesium; or
 6. Titanium;
- b. Particles specified by 6A008.c.12. with a size less than 200 nm in any direction; and
- c. Particles specified by 6A008.c.12.a. with a metal content of 60% or greater;


Note 6A008.c.12. *includes thermites.*’

16. SCOMET entry 6A009.a. shall be substituted as under:-

‘Vessels and components, as follows:

1. Vessels (surface or underwater) specially designed or modified for military use, regardless of current state of repair or operating condition, and whether or not they contain weapon delivery systems or armour, and hulls or parts of hulls for such vessels, and components therefor specially designed for military use;

Note 6A009.a.1. *includes vehicles specially designed or modified for the delivery of divers.*’



17. SCOMET entry 6A009.a.2.a shall be substituted as under:-

‘Surface vessels, not specified in 6A009.a.1., having any of the following, fixed or integrated into the vessel:

- a. Automatic weapons specified in 6A001., or weapons specified in 6A002., 6A004., 6A012. Or 6A019., or 'mountings' or hard points for weapons having a calibre of 12.7 mm or greater;

Technical Note

'Mountings' refers to weapon mounts or structural strengthening for the purpose of installing weapons.'

18. SCOMET entry 6A009.b.3.a. shall be substituted as under:-

‘Diesel engines having all of the following:

- a. Power output of 37.3 kW (50 hp) or more; and
- b. 'Non-magnetic' content in excess of 75% of total mass;

Technical Note

For the purposes of 6A009.b.3., 'non-magnetic' means the relative permeability is less than 2.'

19. After the SCOMET entry 6A009.g., a new SCOMET entry 6A009.h. shall be added as under:-

‘Naval nuclear equipment and related equipment and components, as follows:

1. Nuclear power generating equipment or propulsion equipment, specially designed for vessels specified in 6A009.a. and components therefor specially designed or 'modified' for military use.

Technical Note

For the purpose of 6A009.h.1., '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.

Note 6A009.h.1. includes "nuclear reactors".

N.B See Commodity Identification Note 2 to SCOMET.'

20. In SCOMET entry 6A010, Note 5 shall be substituted as under:-

‘6A010.a. does not apply to "aircraft" or "lighter-than-air vehicles" that meet all of the following:

- a. Were first manufactured before 1946;
- b. Do not incorporate items specified by the Munitions List, unless the items are required to meet safety or airworthiness standards of civil aviation authorities of

one or more Wassenaar Arrangement Participating States; and

- c. *Do not incorporate weapons specified by the Munitions List, unless inoperable and incapable of being returned to operation.'*

21. Note 6 to SCOMET entry 6A010 shall be substituted as under:-

'6A010.d. does not apply to propulsion aero-engines that were first manufactured before 1946.'

22. SCOMET entry 6A011.b. shall be substituted as under:-

'"Satellite navigation system" jamming equipment and specially designed components therefor;'

23. Note 4 to SCOMET entry 6A013 shall be substituted as under:-

'The only helmets specially designed for bomb disposal personnel that are specified by 6A013.c. are those specially designed for military use.'

24. SCOMET entry 6A017.g. and the N.B thereto shall be substituted as under:-

'Nuclear power generating equipment or propulsion equipment, not specified elsewhere, specially designed for military use and components therefor specially designed or 'modified' for military use;

Note 6A017.g. includes "nuclear reactors".'

N.B See Commodity Identification Note of SCOMET List.

25. SCOMET entry 6A017.h. shall be substituted as under:-

'Equipment and material, coated or treated for signature suppression, specially designed for military use, not specified elsewhere in the Munitions List;'

26. SCOMET entry 6A017.m. shall be substituted as under:-

'Ferries, not specified elsewhere in the Munitions List, bridges and pontoons, specially designed for military use;'

27. SCOMET entry 6A017.p. shall be substituted as under:-

'"Fuel cells", not specified elsewhere in the Munitions List, specially designed or 'modified' for military use.'

28. SCOMET entry 6A021.c. shall be substituted as under:-

‘ "Software", not specified by 6A021.a. or 6A021.b., specially designed or modified to enable equipment not specified by the Munitions List to perform the military functions of equipment specified by the Munitions List.’

29. In SCOMET entry 8C101.a., Note 1.e. and Technical Note shall be inserted after Note 1.d.:-

‘Planar absorbers having no magnetic loss and fabricated from ‘open-cell foam’ plastic material with a density of 0.15 grams/cm³ or less.’

Technical Note

‘Open-cell foams’ are flexible and porous materials, having an inner structure open to the atmosphere. ‘Open-cell foams’ are also known as reticulated foams’.

30. SCOMET entry 6A008.a.6. shall be substituted as under:-

‘DADE (1,1-diamino-2,2-dinitroethylene, FOX-7) (CAS 145250-81-3);’

31. The Note under SCOMET entry 8A201.a shall be substituted as under:-

‘Note 8A201 does not apply to balls with tolerances specified by the manufacturer in accordance with ISO 3290:2001 as grade G5 (or national equivalents) or worse’.

32. In SCOMET entry 8A3, Note 2 shall be substituted and a new Note 3 shall be added as under:-

Note 2 *The status of integrated circuits described in 8A301.a.3. to 8A301.a.9., 8A301.a.12. or 8A301.a.14., which are unalterably programmed or designed for a specific function for another equipment is determined by the status of the other equipment*

N.B. *When the manufacturer or applicant cannot determine the status of the other equipment, the status of the integrated circuits is determined in 8A301.a.3. to 8A301.a.9., 8A301.a.12. and 8A301.a.13.*

Note 3 *The status of wafers (finished or unfinished), in which the function has been determined, is to be evaluated against the parameters of 8A301.a, 8A301.b., 8A301.d., 8A301.e., 8A301.g., 8A301.h., or 8A301.i.’*

33. In SCOMET entry 8A301.a., Note 1 shall be deleted and Note 2 shall read as under:-

Note *Integrated circuits include the following types:
- "Monolithic integrated circuits";*

- "Hybrid integrated circuits";
- "Multichip integrated circuits";
- "Film type integrated circuits", including silicon-on-sapphire integrated circuits;
- "Optical integrated circuits";
- "Three dimensional integrated circuits";
- "Monolithic Microwave Integrated Circuits" ("MMICs").

34. In SCOMET 8A301.a.2., the Note shall be substituted as under:-

Note 8A301.a.2. does not apply to integrated circuits designed for civil automobile or railway train applications.'

35. SCOMET entry 8A301.a.5.b. shall be substituted as under:

'Digital-to-Analogue Converters (DAC) having any of the following:

1. A resolution of 10 bit or more but less than 12 bit, with an 'adjusted update rate' exceeding 3,500 MSPS; or
2. A resolution of 12 bit or more and having any of the following:
 - a. An 'adjusted update rate' exceeding 1,250 MSPS but not exceeding 3,500 MSPS, and having any of the following:
 1. A settling time less than 9 ns to arrive at or within 0.024% of full scale from a full scale step; or
 2. A 'Spurious Free Dynamic Range' (SFDR) greater than 68 dBc (carrier) when synthesising a full scale analogue signal of 100 MHz or the highest full scale analogue signal frequency specified below 100 MHz; or
 - b. An 'adjusted update rate' exceeding 3,500 MSPS;

Technical Notes

1. 'Spurious Free Dynamic Range' (SFDR) is defined as the ratio of the RMS value of the carrier frequency (maximum signal component) at the input of the DAC to the RMS value of the next largest noise or harmonic distortion component at its output.
2. SFDR is determined directly from the specification table or from the characterisation plots of SFDR versus frequency.
3. A signal is defined to be full scale when its amplitude is greater than -3 dBfs (full scale).
4. 'Adjusted update rate' for DACs:
 - a. For conventional (non-interpolating) DACs, the 'adjusted update rate' is the rate at which the digital signal is converted to an analogue signal and the output analogue values are changed by the DAC. For DACs where the interpolation mode may be bypassed (interpolation factor of one), the DAC

should be considered as a conventional (non-interpolating) DAC.

b. For interpolating DACs (oversampling DACs), the 'adjusted update rate' is defined as the DAC update rate divided by the smallest interpolating factor. For interpolating DACs, the 'adjusted update rate' may be referred to by different terms including:

- input data rate
- input word rate
- input sample rate
- maximum total input bus rate
- maximum DAC clock rate for DAC clock input.'

36. SCOMET entry 8A301.b. shall be substituted as under:-

'Microwave or millimetre wave items, as follows:

Technical Note

For purposes of 8A301.b., the parameter peak saturated power output may also be referred to on product data sheets as output power, saturated power output, maximum power output, peak power output, or peak envelope power output.

1. "Vacuum electronic devices" and cathodes, as follows:

Note 1

8A301.b.1. does not apply to "vacuum electronic devices" designed or rated for operation in any frequency bands and having all of the following:

- a. Does not exceed 31.8 GHz; and
- b. Is "allocated by the ITU" for radio-communications services, but not for radio-determination.

Note 2

8A301.b 1. does not apply to non-"space-qualified" "vacuum electronic devices" having all of the following:

- a. An average output power equal to or less than 50 W; and
- b. Designed or rated for operation in any frequency band and having all of the following:
 1. Exceeds 31.8 GHz but does not exceed 43.5 GHz; and
 2. Is "allocated by the ITU" for radio-communications services, but not for radio-determination.'

37. SCOMET entry 8A301.b.1. shall be substituted as under:-

'a. Travelling-wave "vacuum electronic devices", pulsed or continuous wave, as follows:

1. Devices operating at frequencies exceeding 31.8 GHz;
2. Devices having a cathode heater with a turn on time to rated RF power of less than 3 seconds;
3. Coupled cavity devices, or derivatives thereof, with a "fractional bandwidth" of more than 7% or a peak power exceeding 2.5 kW;
4. Devices based on helix, folded waveguide, or serpentine waveguide circuits, or derivatives thereof, having any of the following:

- a. An "instantaneous bandwidth" of more than one octave, and average power (expressed in kW) times frequency (expressed in GHz) of more than 0.5;
 - b. An "instantaneous bandwidth" of one octave or less, and average power (expressed in kW) times frequency (expressed in GHz) of more than 1;
 - c. Being "space-qualified"; or
 - d. Having a gridded electron gun;
5. Devices with a "fractional bandwidth" greater than or equal to 10%, with any of the following:
- a. An annular electron beam;
 - b. A non-axisymmetric electron beam; or
 - c. Multiple electron beams;
- b. Crossed-field amplifier "vacuum electronic devices" with a gain of more than 17 dB;
 - c. Thermionic cathodes designed for "vacuum electronic devices" producing an emission current density at rated operating conditions exceeding 5 A/cm² or a pulsed (non-continuous) current density at rated operating conditions exceeding 10 A/cm²;
 - d. "Vacuum electronic devices" with the capability to operate in a 'dual mode'.

Technical Note

'Dual mode' means the "vacuum electronic device" beam current can be intentionally changed between continuous-wave and pulsed mode operation by use of a grid and produces a peak pulse output power greater than the continuous-wave output power.'

38. SCOMET entry 8A301.b.8. shall be substituted as under:-

'Microwave power amplifiers containing "vacuum electronic devices" specified by 8A301.b.1. and having all of the following:

- a. Operating frequencies above 3 GHz;
- b. An average output power to mass ratio exceeding 80 W/kg; and
- c. A volume of less than 400 cm³;

Note

8A301.b.8. does not apply to equipment designed or rated for operation in any frequency band which is "allocated by the ITU" for radio-communications services, but not for radio-determination.'

39. SCOMET entry 8A301.b.9. shall be substituted as under:-

'Microwave Power Modules (MPMs) consisting of, at least, a travelling-wave "vacuum electronic device", a "Monolithic Microwave Integrated Circuit" ("MMIC") and an integrated electronic power conditioner and having all of the following:

- a. A 'turn-on time' from off to fully operational in less than 10 seconds;
- b. A volume less than the maximum rated power in Watts multiplied by 10 cm³/W; and
- c. An "instantaneous bandwidth" greater than 1 octave

($f_{max.} > 2f_{min.}$) and having any of the following:

1. For frequencies equal to or less than 18 GHz, an RF output power greater than 100 W; or
2. A frequency greater than 18 GHz;

Technical Notes

1. To calculate the volume in 8A301.b.9.b., the following example is provided: for a maximum rated power of 20 W, the volume would be: $20 W \times 10 cm^3/W = 200 cm^3$.
2. The 'turn-on time' in 8A301.b.9.a. refers to the time from fully-off to fully operational, i.e., it includes the warm-up time of the MPM.'

40. SCOMET entry 8E303.g. shall be substituted as under:-

'g. 'Vacuum electronic devices' operating at frequencies of 31.8 GHz or higher.'

41. After SCOMET entries 8A301.b.3.c., the following entries are substituted and a new entry 8A 301.b.3.f. is added as under:-

- d. Rated for operation with a peak saturated power output greater than 1 W (30 dBm) at any frequency exceeding 37 GHz up to and including 43.5 GHz;
- e. Rated for operation with a peak saturated power output greater than 0.1 nW (-70 dBm) at any frequency exceeding 43.5 GHz; or
- f. Other than those specified by 8A301.b.3.a. to 8A301.b.3.e. and rated for operation with a peak saturated power output greater than 5 W (37.0 dBm) at all frequencies exceeding 8.5 GHz up to and including 31.8 GHz;

Note 1 *The status of a transistor in 8A301.b.3.a. through 8A301.b.3.e. whose rated operating frequency includes frequencies listed in more than one frequency range, as defined by 8A301.b.3.a. through 8A301.b.3.e., is determined by the lowest peak saturated power output threshold.*

Note 2 *8A301.b.3. includes bare dice, dice mounted on carriers, or dice mounted in packages. Some discrete transistors may also be referred to as power amplifiers, but the status of these discrete transistors is determined by 8A301.b.3.*

42. SCOMET entry 8A302.a.6 shall be substituted as under:-

'Digital data recorders having all of the following:

- a. A sustained 'continuous throughput' of more than 6.4 Gbit/s to disk or solid-state drive memory; and
- b. "Signal processing" of the radio frequency signal data while it is being recorded;'

43. SCOMET entry 8A302.d.4 . & 5. shall be substituted and a new SCOMET entry 8A302.d.6. shall be added as under:-

- ‘4. Single sideband (SSB) phase noise, in dBc/Hz, specified as being any of the following:
- Less (better) than $-(126+20 \log_{10}F-20 \log_{10}f)$ anywhere within the range of $10 \text{ Hz} \leq F \leq 10 \text{ kHz}$ anywhere within the frequency range exceeding 3.2 GHz but not exceeding 90 GHz; or
 - Less (better) than $-(206 - 20\log_{10}f)$ anywhere within the range of $10 \text{ kHz} < F \leq 100 \text{ kHz}$ anywhere within the frequency range exceeding 3.2 GHz but not exceeding 90 GHz;

Technical Note

In 8A302.d.4., F is the offset from the operating frequency in Hz and f is the operating frequency in MHz.

5. An 'RF modulation bandwidth' of digital baseband signals as specified by any of the following:

- Exceeding 2.2 GHz within the frequency range exceeding 4.8 GHz but not exceeding 31.8 GHz;
- Exceeding 550 MHz within the frequency range exceeding 31.8 GHz but not exceeding 37 GHz; or
- Exceeding 2.2 GHz within the frequency range exceeding 37 GHz but not exceeding 90 GHz; or

Technical Note


'RF modulation bandwidth' is the Radio Frequency (RF) bandwidth occupied by a digitally encoded baseband signal modulated onto an RF signal. It is also referred to as information bandwidth or vector modulation bandwidth. I/Q digital modulation is the technical method for producing a vector-modulated RF output signal, and that output signal is typically specified as having an 'RF modulation bandwidth'.

6. A maximum frequency exceeding 90 GHz;

Note 1 *For the purpose of 8A302.d., signal generators include arbitrary waveform and function generators.*

Note 2 *8A302.d. does not apply to equipment in which the output frequency is either produced by the addition or subtraction of two or more crystal oscillator frequencies, or by an addition or subtraction followed by a multiplication of the result.*

Technical Notes

- The maximum frequency of an arbitrary waveform or function generator is calculated by dividing the sample rate, in samples/second, by a factor of 2.5.*
 - For the purposes of 8A302.d.1.a., 'pulse duration' is defined as the time interval from the point on the leading edge that is 50% of the pulse amplitude to the point on the trailing edge that is 50 % of the pulse amplitude.'*
- 

44. SCOMET entry 8B301.h. shall be substituted as under:-

‘Multi-layer masks with a phase shift layer not specified by 8B301.g. and designed to be used by lithography equipment having a light source wavelength less than 245 nm;

Note 8B301.h. does not apply to multi-layer masks with a phase shift layer designed for the fabrication of memory devices not specified by 8A301.’

45. After the SCOMET entry 8D304, a new entry 8D305 shall be added as under:-

‘ "Software" specially designed to restore normal operation of a microcomputer, "microprocessor microcircuit" or "microcomputer microcircuit" within 1 ms after an Electromagnetic Pulse (EMP) or Electrostatic Discharge (ESD) disruption, without loss of continuation of operation.’

46. SCOMET entry 8E501.d.4. shall be substituted as under:-

‘Rated for operation with a peak saturated power output greater than 0.1 nW (-70 dBm) at any frequency exceeding 31.8 GHz up to and including 37 GHz;’

47. Under the heading CRYPTOGRAPHIC "INFORMATION SECURITY", SCOMET entry 8A502, shall be substituted as under:-

‘ "Information security" systems, equipment and components, as follows:

N.B. For "satellite navigation system" receiving equipment containing or employing decryption see 8A705., and for related decryption "software" and "technology" see 8D705., and 8E701.

a. Designed or modified to use 'cryptography for data confidentiality' having a 'described security algorithm', where that cryptographic capability is usable, has been activated, or can be activated by means of "cryptographic activation" not employing a secure mechanism, as follows:

1. Items having "information security" as a primary function;
2. Digital communication or networking systems, equipment or components, not specified in paragraph 8A502.a.1.;
3. Computers, other items having information storage or processing as a primary function, and components therefor, not specified in paragraphs 8A502.a.1. or 8A502.a.2.;

N.B. For operating systems, see also 8D502.a.1. and 8D502.c.1.

4. Items, not specified in paragraphs 8A502.a.1. to a.3., where the 'cryptography for data confidentiality' having 'described security algorithm' meets all of the following:

- a. It supports a non-primary function of the item; and
- b. It is performed by incorporated equipment or "software" that would, as a standalone item, be specified by (8A502, 8A503, 8A504, 8B502, 8C5, 8D502 and 8E502)-Part 2.

Technical Notes

1. For the purposes of 8A502.a., 'cryptography for data confidentiality' means "cryptography" that employs digital techniques and performs any cryptographic function other than any of the following:
 - a. "Authentication";
 - b. Digital signature;
 - c. Data integrity;
 - d. Non-repudiation;
 - e. Digital rights management, including the execution of copy-protected "software";
 - f. Encryption or decryption in support of entertainment, mass commercial broadcasts or medical records management; or
 - g. Key management in support of any function described in paragraph a. to f. above.
2. For the purposes of 8A502.a., 'described security algorithm' means any of the following:
 - a. A "symmetric algorithm" employing a key length in excess of 56 bits, not including parity bits;
 - b. An "asymmetric algorithm" where the security of the algorithm is based on any of the following:
 1. Factorisation of integers in excess of 512 bits (e.g., RSA);
 2. Computation of discrete logarithms in a multiplicative group of a finite field of size greater than 512 bits (e.g., Diffie-Hellman over Z/pZ); or
 3. Discrete logarithms in a group other than mentioned in paragraph b.2. in excess of 112 bits (e.g., Diffie-Hellman over an elliptic curve); or
 - c. An "asymmetric algorithm" where the security of the algorithm is based on any of the following:
 1. Shortest vector or closest vector problems associated with lattices (e.g., NewHope, Frodo, NTRUEncrypt, Kyber, Titanium);
 2. Finding isogenies between Supersingular elliptic curves (e.g., Supersingular Isogeny Key Encapsulation); or
 3. Decoding random codes (e.g., McEliece, Niederreiter).

Technical Note

An algorithm described by Technical Note 2.c. may be referred to as being post-quantum, quantum-safe or quantum-resistant.

Note 1

When necessary as determined by the appropriate authority in the exporter's country, details of items must be accessible and provided to the authority

upon request, in order to establish any of the following:

- a. Whether the item meets the criteria of 8A502.a.1. to a.4.; or

- b. Whether the cryptographic capability for data confidentiality specified by 8A502.a. is usable without "cryptographic activation".

Note 2 8A502.a. does not apply to any of the following items, or specially designed "information security" components therefor:

- a. Smart cards and smart card 'readers/writers' as follows:
1. A smart card or an electronically readable personal document (e.g., token coin, e-passport) that meets any of the following:
 - a. The cryptographic capability meets all of the following:
 1. It is restricted for use in any of the following:
 - a. Equipment or systems not described by 8A502.a.1. to a.4.;
 - b. Equipment or systems not using 'cryptography for data confidentiality' having 'described security algorithm'; or
 - c. Equipment or systems excluded from 8A502.a by entries b. to f. of this Note; and
 2. It cannot be reprogrammed for any other use; or
 - b. Having all of the following:
 1. It is specially designed and limited to allow protection of 'personal data' stored within;
 2. Has been, or can only be, personalized for public or commercial transactions or individual identification; and
 3. Where the cryptographic capability is not use-accessible;

Technical Note

'Personal data' includes any data specific to a particular person or entity, such as the amount of money stored and data necessary for "authentication".

2. 'Readers/writers' specially designed or modified, and limited, for items specified by paragraph a.1. of this Note;


Technical Note

'Readers/writers' include equipment that communicates with smart cards or electronically readable documents through a network.'

48. In SCOMET entry 8A502.a., after Note.2.a. and the technical note, the letters 'a. j' be deleted.

49. In SCOMET entry 8A502, after Note 2.i., the following shall be inserted as a new Note 2.j.:

'2.j Items specially designed for a 'connected civil industry application', meeting all of the following:

1. Being any of the following:
- 

- a. A network-capable endpoint device meeting any of the following:
 1. The "information security" functionality is limited to securing 'non-arbitrary data' or the tasks of "Operations, Administration or Maintenance" ("OAM"); or
 2. The device is limited to a specific 'connected civil industry application'; or
- b. Networking equipment meeting all of the following:
 1. Being specially designed to communicate with the devices specified by paragraph j.1.a. above; and
 2. The "information security" functionality is limited to supporting the 'connected civil industry application' of devices specified by paragraph j.1.a. above, or the tasks of "OAM" of this networking equipment or of other items specified by paragraph j. of this Note; and
2. Where the "information security" functionality implements only published or commercial cryptographic standards, and the cryptographic functionality cannot easily be changed by the user.

Technical Notes

1. 'Connected civil industry application' means a network-connected consumer or civil industry application other than "information security", digital communication, general purpose networking or computing.
2. 'Non-arbitrary data' means sensor or metering data directly related to the stability, performance or physical measurement of a system (e.g., temperature, pressure, flow rate, mass, volume, voltage, physical location etc.), that cannot be changed by the user of the device'.

50. SCOMET entry 8A502.b. is substituted as under:-

'Being a 'cryptographic activation token';

Technical Note

A 'cryptographic activation token' is an item designed or modified for any of the following:

1. Converting, by means of "cryptographic activation", an item not specified by (8A502, 8A503, 8A504, 8B502, 8C5, 8D502 and 8E502)-Part 2 into an item specified by 8A502.a. or 8D502.c.1., and not released by the Cryptography Note (Note 3 in Category 8 – Part 2), or
2. Enabling, by means of "cryptographic activation", additional functionality specified by 8A502.a. of an item already specified by (8A502, 8A503, 8A504, 8B502, 8C5, 8D502 and 8E502)-Part 2;'

51. SCOMET entry 8D502.b. is substituted as under:-

‘ "Software" having the characteristics of a 'cryptographic activation token' specified by 8D502.b.’

52. SCOMET entry 8E502.b. is substituted as under:-

‘ "Technology" having the characteristics of a 'cryptographic activation token' specified by 8E502.b.;’

53. SCOMET entry 8A601.a.2. is substituted as under:-

‘Passive systems, equipment and specially designed components therefor, as follows:

Note 8A601.a.2. also applies to receiving equipment, whether or not related in normal application to separate active equipment, and specially designed components therefor.

54. SCOMET entry 8A601.a.2.a is substituted as under:-

Hydrophones having any of the following:

Note The status of hydrophones specially designed for other equipment is determined by the status of the other equipment.

Technical Notes

- 1. Hydrophones consist of one or more sensing elements producing a single acoustic output channel. Those that contain multiple elements can be referred to as a hydrophone group.*
- 2. For the purposes of 8A601.a.2.a., underwater acoustic transducers designed to operate as passive receivers are hydrophones.’*

55. SCOMET entry 8A601.a.2.a.6. shall be substituted as under:

‘Designed for operation at depths exceeding 1,000 m and having a 'hydrophone sensitivity' better than -230 dB below 4 kHz;’

56. In SCOMET entry 8A603.b.4.b., Note 3.b.1. shall be substituted as under:

‘Having all of the following:

Having a minimum horizontal or vertical 'Instantaneous-Field-of-View (IFOV)' of at least 2 mrad (milliradians);’

57. In SCOMET entry 8A605, after Note 5, a new Note 6 shall be added as under:-

Note 6 For the purposes of 8A605.a. and 8A605. b., 'single transverse mode' refers to "lasers" with a beam profile having an M2-factor of less than

1.3, while 'multiple transverse mode' refers to "lasers" with a beam profile having an M^2 -factor of 1.3 or higher.'

58. SCOMET entry 8A605 shall be substituted as under:-

- a. Non-"tunable" continuous wave "(CW) lasers" having any of the following:
1. Output wavelength less than 150 nm and output power exceeding 1 W;
 2. Output wavelength of 150 nm or more but not exceeding 510 nm and output power exceeding 30 W;

Note 8A605.a.2. does not apply to Argon "lasers" having an output power equal to or less than 50W.


3. Output wavelength exceeding 510 nm but not exceeding 540 nm and any of the following:
 - a. 'Single transverse mode' output and output power exceeding 50 W; or
 - b. 'Multiple transverse mode' output and output power exceeding 150 W;
4. Output wavelength exceeding 540 nm but not exceeding 800 nm and output power exceeding 30 W;

- 8A605 a. 5. Output wavelength exceeding 800 nm but not exceeding 975 nm and any of the following:
- a. 'Single transverse mode' output and output power exceeding 50 W; or
 - b. 'Multiple transverse mode' output and output power exceeding 80 W;

- 8A605 a. 6. Output wavelength exceeding 975 nm but not exceeding 1,150 nm and any of the following:
- a. 'Single transverse mode' output and any of the following:
 1. Average output power exceeding 1,000 W; or
 2. Having all of the following:
 - a. Average output power exceeding 500 W; and
 - b. Spectral bandwidth less than 40 GHz; or

- b. 'Multiple transverse mode' output and any of the following:
 1. 'Wall-plug efficiency' exceeding 18% and output power exceeding 1000 W; or
 2. Output power exceeding 2 kW;

Note 1 8A605.a.6.b. does not apply to 'multiple transverse mode', industrial "lasers" with output power exceeding 2 kW and not exceeding 6 kW with a total mass greater than 1,200 kg. For the purpose of this note, total mass includes all components required to operate the "laser", e.g., "laser", power supply, heat exchanger, but excludes external optics for beam conditioning or delivery.



Note 2 8A605.a.6.b. does not apply to 'multiple transverse mode', industrial "lasers" having any of the following:


- a. (Reserved)
- b. Output power exceeding 1 kW but not exceeding 1.6 kW and having a BPP exceeding 1.25 mm•mrad;
- c. Output power exceeding 1.6 kW but not exceeding 2.5 kW and having a BPP exceeding 1.7 mm•mrad;
- d. Output power exceeding 2.5 kW but not exceeding 3.3 kW and having a BPP exceeding 2.5 mm•mrad;
- e. Output power exceeding 3.3 kW but not exceeding 6 kW and having a BPP exceeding 3.5 mm•mrad;
- f. (Reserved)
- g. (Reserved)
- h. Output power exceeding 6 kW but not exceeding 8 kW and having a BPP exceeding 12 mm•mrad; or
- i. Output power exceeding 8 kW but not exceeding 10 kW and having a BPP exceeding 24 mm•mrad;

Technical Note

For the purpose of 8A605.a.6.b., Note 2.a., 'brightness' is defined as the output power of the "laser" divided by the squared Beam Parameter Product (BPP), i.e. (output power)/BPP².

Technical Note

'Wall-plug efficiency' is defined as the ratio of "laser" output power (or "average output power") to total electrical input power required to operate the "laser", including the power supply/conditioning and thermal conditioning/heat exchanger.

- 8A605 a. 7. Output wavelength exceeding 1,150 nm but not exceeding 1,555 nm and any of the following:
a. 'Single transverse mode' and output power exceeding 50 W; or
b. 'Multiple transverse mode' and output power exceeding 80 W; or
- 8A605 a.8. Output wavelength exceeding 1,555 nm but not exceeding 1,850 nm, and output power exceeding 1 W;
- 8A605 a. 9. Output wavelength exceeding 1,850 nm but not exceeding 2,100 nm, and any of the following:
a. 'Single transverse mode' and output power exceeding 1 W; or
b. 'Multiple transverse mode' output and output power exceeding 120 W; or
- 8A605 a.10. Output wavelength exceeding 2,100 nm and output power exceeding 1 W;
- 8A605 b. Non-"tunable" "pulsed lasers" having any of the following:
1. Output wavelength less than 150 nm and any of the following:
a. Output energy exceeding 50 mJ per pulse and "peak power" exceeding 1 W; or
- 

- b. "Average output power" exceeding 1 W;
- 2. Output wavelength of 150 nm or more but not exceeding 510 nm and any of the following:
 - a. Output energy exceeding 1.5 J per pulse and "peak power" exceeding 30W; or
 - b. "Average output power" exceeding 30 W;

Note 8A605.b.2.b does not apply to Argon "lasers" having an "average output power" equal to or less than 50 W.

8A605 b. 3. Output wavelength exceeding 510 nm but not exceeding 540 nm and any of the following:

- a. 'Single transverse mode' output and any of the following:
 - 1. Output energy exceeding 1.5 J per pulse and "peak power" exceeding 50nW; or
 - 2. "Average output power" exceeding 50 W; or
- b. 'Multiple transverse mode' output and any of the following:
 - 1. Output energy exceeding 1.5 J per pulse and "peak power" exceeding 150 W; or
 - 2. "Average output power" exceeding 150 W;

8A605 b. 4. Output wavelength exceeding 540 nm but not exceeding 800 nm and any of the following:

- a. "Pulse duration" less than 1 ps and any of the following:
 - 1. Output energy exceeding 0.005 J per pulse and "peak power" exceeding 5 GW; or
 - 2. "Average output power" exceeding 20 W; or
- b. "Pulse duration" equal to or exceeding 1 ps and any of the following:
 - 1. Output energy exceeding 1.5 J per pulse and "peak power" exceeding 30 W; or
 - 2. "Average output power" exceeding 30 W;

8A605 b. 5. Output wavelength exceeding 800 nm but not exceeding 975 nm and any of the following:

- a. "Pulse duration" less than 1 ps and any of the following:
 - 1. Output energy exceeding 0.005 J per pulse and "peak power" exceeding 5 GW; or
 - 2. 'Single transverse mode' output and "average output power" exceeding 20 W;
- b. "Pulse duration" equal to or exceeding 1 ps and not exceeding 1 μ s and any of the following:

1. Output energy exceeding 0.5 J per pulse and "peak power" exceeding 50 W;
2. 'Single transverse mode' output and "average output power" exceeding 20 W; or
3. Multiple transverse mode' output and "average output power" exceeding 50 W; or

c. "Pulse duration" exceeding 1 μ s and any of the following:

1. Output energy exceeding 2 J per pulse and "peak power" exceeding 50 W;
2. Single transverse mode' output and "average output power" exceeding 50 W; or
3. 'Multiple transverse mode' output and "average output power" exceeding 80 W;

8A605 b. 6. Output wavelength exceeding 975 nm but not exceeding 1,150 nm and any of the following:

a. "Pulse duration" of less than 1 ps, and any of the following:

1. Output "peak power" exceeding 2 GW per pulse;
2. "Average output power" exceeding 30 W; or
3. Output energy exceeding 0.002 J per pulse;

b. "Pulse duration" equal to or exceeding 1 ps and less than 1 ns, and any of the following:


1. Output "peak power" exceeding 5 GW per pulse;
2. "Average output power" exceeding 50 W; or
3. Output energy exceeding 0.1 J per pulse;


c. "Pulse duration" equal to or exceeding 1 ns but not exceeding 1 ms and any of the following:

1. 'Single transverse mode' output and any of the following:

- a. "Peak power" exceeding 100 MW;
- b. "Average output power" exceeding 20 W limited by design to a maximum pulse repetition frequency less than or equal to 1 kHz;
- c. 'Wall-plug efficiency' exceeding 12%, "average output power" exceeding 100 W and capable of operating at a pulse repetition frequency greater than 1 kHz;
- d. "Average output power" exceeding 150 W and capable of operating at a pulse repetition frequency greater than 1 kHz; or
- e. Output energy exceeding 2 J per pulse; or

8A605 b. 6. c. 2. 'Multiple transverse mode' output and any of the following:

- a. "Peak power" exceeding 400 MW;
 - b. 'Wall-plug efficiency' exceeding 18% and "average output power" exceeding 500 W;
 - c. "Average output power" exceeding 2 kW; or
 - d. Output energy exceeding 4 J per pulse; or
- 

- 8A605 b. 6. d. "Pulse duration" exceeding 1 μ s and any of the following:
1. 'Single transverse mode' output and any of the following:
 - a. "Peak power" exceeding 500 kW;
 - b. 'Wall-plug efficiency' exceeding 12% and "average output power" exceeding 100 W; or
 - c. "Average output power" exceeding 150 W; or
 2. 'Multiple transverse mode' output and any of the following:
 - a. "Peak power" exceeding 1 MW;
 - b. 'Wall-plug efficiency' exceeding 18% and "average output power" exceeding 500 W; or
 - c. "Average output power" exceeding 2 kW;
- 8A605 b. 7. Output wavelength exceeding 1,150 nm but not exceeding 1,555 nm, and any of the following:
- a. "Pulse duration" not exceeding 1 μ s and any of the following:
 1. Output energy exceeding 0.5 J per pulse and "peak power" exceeding 50 W;
 2. 'Single transverse mode' output and "average output power" exceeding 20 W; or
 3. 'Multiple transverse mode' output and "average output power" exceeding 50 W; or
 - b. "Pulse duration" exceeding 1 μ s and any of the following:
 1. Output energy exceeding 2 J per pulse and "peak power" exceeding 50 W;
 2. 'Single transverse mode' output and "average output power" exceeding 50 W; or
 3. 'Multiple transverse mode' output and "average output power" exceeding 80 W; or
- 8A605 b. 8. Output wavelength exceeding 1,555 nm but not exceeding 1,850 nm, and any of the following:
- a. Output energy exceeding 100 mJ per pulse and "peak power" exceeding 1 W; or
 - b. "Average output power" exceeding 1 W;
- 8A605 b. 9. Output wavelength exceeding 1,850 nm but not exceeding 2,100 nm, and any of the following:
- a. 'Single transverse mode' and any of the following:
 1. Output energy exceeding 100 mJ per pulse and "peak power" exceeding 1 W; or
 2. "Average output power" exceeding 1 W; or
 - b. 'Multiple transverse mode' and any of the following:
 1. Output energy exceeding 100 mJ per pulse and "peak power" exceeding 10 kW; or
 2. "Average output power" exceeding 120 W; or
- 

59. SCOMET entry 8A605.d.1.b. shall be substituted as under:-

‘Individual multiple-transverse mode semiconductor "lasers" having any of the following:

1. Wavelength of less than 1,400 nm and average or CW output power, exceeding 15 W;
2. Wavelength equal to or greater than 1,400 nm and less than 1,900 nm and average or CW output power, exceeding 2.5 W; or
3. Wavelength equal to or greater than 1,900 nm and average or CW output power, exceeding 1 W;’

60. SCOMET entry 8B602 shall be substituted as under:-

‘Masks and reticles, specially designed for optical sensors specified by 8A602.a.1.b. or 8A602.a.1.d.’

61. SCOMET entry 8A702 shall be substituted as under:-

‘Gyros or angular rate sensors, having any of the following and specially designed components therefor:

N.B. *For angular or rotational accelerometers, see 8A701.b.*

a. Specified to function at linear acceleration levels less than or equal to 100 g and having any of the following:

1. An angular rate range of less than 500 degrees per second and having any of the following:

a. A "bias" "stability" of less (better) than 0.5 degree per hour, when measured in a 1 g environment over a period of one month, and with respect to a fixed calibration value; or

b. An "angle random walk" of less (better) than or equal to 0.0035 degree per square root hour; or

Note 8A702.a.1.b. does not apply to "spinning mass gyros".

8A702. a. 2. An angular rate range greater than or equal to 500 degrees per second and having any of the following:

a. A "bias" "stability" of less (better) than 4 degrees per hour, when measured in a 1 g environment over a period of three minutes, and with respect to a fixed calibration value; or

8A702. a. 2. b. An "angle random walk" of less (better) than or equal to 0.1 degree per square root hour; or

Note 8A702.a.2.b. does not apply to "spinning mass gyros".

8A702. b. Specified to function at linear acceleration levels exceeding 100 g.’



62. SCOMET entry 8A703 shall be substituted as under:--

'Inertial measurement equipment or systems', having any of the following:

Note 1 'Inertial measurement equipment or systems' incorporate accelerometers or gyroscopes to measure changes in velocity and orientation in order to determine or maintain heading or position without requiring an external reference once aligned. 'Inertial measurement equipment or systems' include:

- Attitude and Heading Reference Systems (AHRSs);
- Gyrocompasses;
- Inertial Measurement Units (IMUs);
- Inertial Navigation Systems (INSs);
- Inertial Reference Systems (IRSs);
- Inertial Reference Units (IRUs).

Note 2 8A703 does not apply to 'inertial measurement equipment or systems' which are certified for use on "civil aircraft" by civil aviation authorities of one or more Wassenaar Arrangement Participating States.

Technical Note

'Positional aiding references' independently provide position, and include:

- a. "Satellite navigation system";
- b. "Data-Based Referenced Navigation" ("DBRN").'

63. The SCOMET entry 8A705 shall be substituted as under:--

' "Satellite navigation system" receiving equipment having any of the following and specially designed components therefor:

N.B. For equipment specially designed for military use, see 6A011. '

64. SCOMET entry 8A705 shall be substituted as under:-

- 'a. Employing a decryption algorithm specially designed or modified for government use to access the ranging code for position and time; or
- b. Employing 'adaptive antenna systems'.

Note 8A705.b. does not apply to "satellite navigation system" receiving equipment that only uses components designed to filter, switch, or combine signals from multiple omnidirectional antennae that do not implement adaptive antenna techniques.

Technical Note

For the purposes of 8A705.b. 'adaptive antenna systems' dynamically generate one or more spatial nulls in an antenna array pattern by signal processing in the time domain or frequency domain.'

65. SCOMET entry 8A703.b. shall be substituted as under:-

‘ "Source code" for hybrid integrated systems which improves the operational performance or reduces the navigational error of systems to the level specified by 8A703. or 8A708. by continuously combining heading data with any of the following:

1. Doppler radar or sonar velocity data;
2. "Satellite navigation system" reference data; or
3. Data from "Data-Based Referenced Navigation" ("DBRN") systems;’

66. SCOMET entry 8D705 shall be substituted as under:-

‘ "Software" specially designed to decrypt "satellite navigation system" ranging code designed for government use.’

67. SCOMET entry 8A801.c. shall be substituted as under:-

‘Unmanned submersible vehicles, as follows:

1. Unmanned submersible vehicles having any of the following:
 - a. Designed for deciding a course relative to any geographical reference without real-time human assistance;
 - b. Acoustic data or command link; or
 - c. Optical data or command link exceeding 1,000 m;
2. Unmanned submersible vehicles, not specified in 8A801c.1., having all of the following:
 - a. Designed to operate with a tether;
 - b. Designed to operate at depths exceeding 1,000 m; and
 - c. Having any of the following:
 1. Designed for self-propelled manoeuvre using propulsion motors or thrusters specified by 8A802.a.2.; or
 2. Fibre optic data link;’

68. SCOMET entry 8A801.d. shall be substituted as under:-

‘(Reserved)’

69. SCOMET entry 8A802.d. shall be substituted as under:-

‘Underwater vision systems having all of the following:

1. Specially designed or modified for remote operation with an underwater vehicle; and

2. Employing any of the following techniques to minimise the effects of back scatter:
 - a. Range-gated illuminators; or
 - b. Range-gated laser systems;'

70. SCOMET entry 8B8 shall be substituted as under:-

' 8B8 MARINE (TEST, INSPECTION AND PRODUCTION EQUIPMENT)

8B801 Water tunnels designed to have a background noise of less than 100 dB (reference 1 μ Pa, 1 Hz) within the frequency range exceeding 0 Hz but not exceeding 500 Hz and designed for measuring acoustic fields generated by a hydro-flow around propulsion system models.'

71. SCOMET entry 8A904 shall be substituted as under:-

'Space launch vehicles, "spacecraft", "spacecraft buses", "spacecraft payloads", "spacecraft" on-board systems or equipment, terrestrial equipment, and air-launch platforms, **as under:-**

- a. Space launch vehicles;
- b. "Spacecraft";
- c. "Spacecraft buses";
- d. "Spacecraft payloads" incorporating items specified by 8A301.b.1.a.4., 8A302.g., 8A501.a.1., 8A501.b.3., 8A502.c., 8A502.e., 8A602.a.1., 8A602.a.2., 8A602.2.b., 8A602.2.d., 8A603.b., 8A604.4.c., 8A604.e., 8A608.d., 8A608.e., 8A608.k., 8A608.l. or 8A910.c.;
- e. On-board systems or equipment, specially designed for "spacecraft" and having any of the following functions:

1. 'Command and telemetry data handling';

Note For the purpose of 8A904.e.1., 'command and telemetry data handling' includes bus data management, storage, and processing.

2. 'Payload data handling'; or

Note For the purpose of 8A904.e.2., 'payload data handling' includes payload data management, storage, and processing.

3. 'Attitude and orbit control';

Note For the purpose of 8A904.e.3., 'attitude and orbit control' includes sensing and actuation to determine and control the position and orientation of a "spacecraft".

N.B. For equipment specially designed for military use, see 6A011.c.

8A904.f. Terrestrial equipment specially designed for "spacecraft", as follows:

1. Telemetry and telecommand equipment specially designed for any of the following data processing functions:



- a. Telemetry data processing of frame synchronisation and error corrections, for monitoring of operational status (also known as health and safe status) of the "spacecraft bus"; or
 - b. Command data processing for formatting command data being sent to the "spacecraft" to control the "spacecraft bus";
2. Simulators specially designed for 'verification of operational procedures' of "spacecraft".

Technical Note

For the purposes of 8A904.f.2., 'verification of operational procedures' is any of the following:

1. *Command sequence confirmation;*
2. *Operational training;*
3. *Operational rehearsals; or*
4. *Operational analysis*

8A904.g. "Aircraft" specially designed or modified to be air-launch platforms for space launch vehicles.'

72. SCOMET entry 8A910.d. shall be substituted as under:-

'Pulsed liquid rocket engines with thrust-to-weight ratios equal to or more than 1 kN/kg and a 'response time' of less than 30 ms.

Technical Note

For the purposes of 8A910.d., 'response time' is the time required to achieve 90% of total rated thrust from start-up'


73. SCOMET entry 8B901 shall be substituted as under:-

'Manufacturing equipment, tooling or fixtures, as follows:

- a. Directional solidification or single crystal casting equipment designed for "superalloys";
- b. Casting tooling, specially designed for manufacturing gas turbine engine blades, vanes or "tip shrouds", manufactured from refractory metals or ceramics, as follows:
 1. Cores;
 2. Shells (moulds);
 3. Combined core and shell (mould) units;
- c. Directional-solidification or single-crystal additive-manufacturing equipment, specially designed for manufacturing gas turbine engine blades, vanes or "tip shrouds".'

74. SCOMET entry 8E903.a.7. shall be substituted as under:-

(Reserved)



2. The complete Appendix 3 (SCOMET Items) to Schedule- 2 of ITC (HS) Classification of Export and Import Items, 2018 would be made available on the web-portal of DGFT under heading Policies and Sub-heading SCOMET (<http://dgft.gov.in/scomet>).

3. **This Notification shall come into force after 90 days of the issue of this Notification.**

4. **Effect of this Notification:-**

Appendix 3 (SCOMET Items) to Schedule - 2 of ITC (HS) Classification of Export and Import Items, 2018 has been amended.



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