a. Electrical erasable programmable read-only memories (EEPROMs) with a storage capacity:
  1. Exceeding 1 Mbit per package; or
  2. Exceeding 256 kbit per package and a maximum access time of less than 80 ns;
b. Static random-access memories (SRAMs) with a storage capacity:
  1. Exceeding 1 Mbit per package; or
  2. Exceeding 256 kbit per package and a maximum access time of less than 25 ns;
c. Storage integrated circuits manufactured from a compound semiconductor;

1031. 1. a. 5. Converter integrated circuits, as follows:
  a. Analogue-to-digital converters having any of the following:
    1. A resolution of 8 bit or more, but less than 12 bit, with a total conversion time to maximum resolution of less than 10 ns;
    2. A resolution of 12 bit with a total conversion time to maximum resolution of less than 200 ns; or
    3. A resolution of more than 12 bit with a total conversion time to maximum resolution of less than 2 microseconds;
  b. Digital-to-analogue converters with a resolution of 12 bit or more, and a "settling time" of less than 10 ns;

1031. 1. a. 6. Electro-optical or "optical integrated circuits" for "signal processing" having all of the following:
  a. One or more internal "laser" diodes;
  b. One or more internal light detecting elements; and
  c. Optical waveguides;

1031. 1. a. 7. Field programmable gate arrays having either of the following:
  a. An equivalent gate count of more than 30,000 (2 input gates); or
  b. A typical "basic gate propagation delay time" of less than 0.4 ns;

1031. 1. a. 8. Field programmable logic arrays having either of the following:
  a. An equivalent gate count of more than 5,000 (2 input gates); or
  b. A toggle frequency exceeding 100 MHz;

1031. 1. a. 9. Neural network integrated circuits;

1031. 1. a. 10. Custom integrated circuits for which either the function is unknown, or the embargo status of the equipment in which the integrated circuits will be used is unknown to the manufacturer, having any of the following:
  a. More than 144 terminals;
  b. A typical "basic gate propagation delay time" of less than 0.4 ns; or
  c. An operating frequency exceeding 3 GHz;

1031. 1. a. 11. Digital integrated circuits, other than those described in 1031.1.a.3 to 10., based upon any compound semiconductor and having either of the following:
  a. An equivalent gate count of more than 300 (2 input gates); or
  b. A toggle frequency exceeding 1.2 GHz;

1031. 1. b. Microwave or millimetre wave devices:

1031. 1. b. 1. Electronic vacuum tubes and cathodes, as follows: (For "frequency agile" tubes, see Item 2011 on the Munitions List.)
NOTE:
1031.1.b.1. does not embargo tubes designed or rated to operate in the Standard Civil Telecommunications Bands at frequencies not exceeding 31 GHz.
  a. Travelling wave tubes, pulsed or continuous wave, as follows:
    1. Operating at frequencies higher than 31 GHz;
    2. Having a cathode heater element with a turn on time to rated RF power of less than 3 seconds;
    3. Coupled cavity tubes, or derivatives thereof;
    4. Helix tubes, or derivatives thereof, with any of the following:
      a. 1. An "instantaneous bandwidth" of half an octave or more; and

2. The product of the rated average ouput power (expressed in kW) and the maximum operating frequency (expressed in GHz) of more than 0.2;
  b. 1. An "instantaneous bandwidth" of less than half an octave; and
    2. The product of the rated average ouput power (expressed in kW) and the maximum operating frequency (expressed in GHz) of more than 0.4; or
  c. "Space qualified";
b. Crossed-field amplifier tubes with a gain of more than 17 dB;
c. Impregnated cathodes for electronic tubes, with either of the following:
  1. Having a turn on time to rated emission of less than 3 seconds; or
  2. Producing a continuous emission current density at rated operating conditions exceeding 5 A/cm^2;

1031. 1. b. 2. Microwave integrated circuits or modules containing "monolithic integrated circuits" operating at frequencies exceeding 3 GHz;
NOTE:
1031.1.b.2. does not embargo circuits or modules for equipment designed or rated to operate in the Standard Civil Telecommunications Bands at frequencies not exceeding 31 GHz.

1031. 1. b. 3. Microwave transistors rated for operation at frequencies exceeding 31 GHz;

1031. 1. b. 4. Microwave solid state amplifiers, as follows:
  a. Operating at frequencies exceeding 10.5 GHz and having an "instantaneous bandwidth" of more than half an octave;
  b. Operating at frequencies exceeding 31 GHz;
NOTE:
1031.1.b.4. does not embargo amplifiers:
  1. Specially designed for medical applications;
  2. Specially designed for use in "simple educational devices"; or
  3. Having an output power of no more than 10 W and specially designed for:
    a. Industrial or civilian intrusion, detection and alarm systems;
    b. Traffic or industrial movement control and counting systems; or
    c. Systems for the detection of environmental pollution of air or water.

1031. 1. b. 5. Electronically or magnetically tunable band-pass or band-stop filters having more than 5 tunable resonators capable of tuning across a 1.5:1 frequency band (f_{max}/f_{min}) in less than 10 microseconds with:
  a. A band-pass bandwidth of more than 0.5% of centre frequency; or
  b. A band-stop bandwidth of less than 0.5% of centre frequency;

1031. 1. b. 6. Microwave assemblies capable of operating at frequencies exceeding 31 GHz;

1031. 1. b. 7. Flexible waveguides designed for use at frequencies exceeding 40 GHz;

1031. 1. c. Acoustic wave devices, as follows, and specially designed components therefor:
  1. Surface acoustic wave and surface skimming (shallow bulk) acoustic wave devices (i.e., "signal processing" devices employing elastic waves in materials), having either of the following:
NOTE:
1031.1.c.1. does not embargo devices specially designed for home electronics or entertainment.
    a. A carrier frequency exceeding 1 GHz; or
    b. A carrier frequency of 1 GHz or less, and:
      1. A frequency side-lobe rejection exceeding 55 dB;
      2. A product of the maximum delay time and the bandwidth (time in microseconds and bandwidth in MHz) of more than 100; or