

**CATEGORY 5 – TELECOMMUNICATIONS  
AND “INFORMATION SECURITY”**

**Part 2 – “INFORMATION SECURITY”**

**Note 1: [RESERVED]**

**Note 2:** Category 5 - Part 2, “information security” products, when accompanying their user for the user's personal use or as tools of trade, are eligible for License Exceptions TMP or BAG, subject to the terms and conditions of these license exceptions.

**Note 3:** Cryptography Note: ECCNs 5A002, 5A003, 5A004 and 5D002, do not control items as follows:

**a. Items meeting all of the following:**

1. Generally available to the public by being sold, without restriction, from stock at retail selling points by means of any of the following:

- a. Over-the-counter transactions;
- b. Mail order transactions;
- c. Electronic transactions; or
- d. Telephone call transactions;

2. The cryptographic functionality cannot be easily changed by the user;

3. Designed for installation by the user without further substantial support by the supplier; and

**4. [RESERVED]**

5. When necessary, details of the items are accessible and will be provided, upon request, to the appropriate authority in the exporter's country in order to ascertain compliance with

conditions described in paragraphs 1. through 3. of this Note a.;

**b.** Hardware components or ‘executable software’, of existing items described in paragraph a. of this Note, that have been designed for these existing items, and meeting all of the following:

1. “Information security” is not the primary function or set of functions of the component or ‘executable software’;

2. The component or ‘executable software’ does not change any cryptographic functionality of the existing items, or add new cryptographic functionality to the existing items;

3. The feature set of the component or ‘executable software’ is fixed and is not designed or modified to customer specification; and

4. When necessary, as determined by the appropriate authority in the exporter's country, details of the component or ‘executable software’, and details of relevant end-items are accessible and will be provided to the authority upon request, in order to ascertain compliance with conditions described above.

**Technical Note:** For the purpose of the Cryptography Note, ‘executable software’ means “software” in executable form, from an existing hardware component excluded from 5A002, 5A003 or 5A004 by the Cryptography Note.

**Note:** ‘Executable software’ does not include complete binary images of the “software” running on an end-item.

**Note to the Cryptography Note:**

1. To meet paragraph a. of Note 3, all of the following must apply:

a. The item is of potential interest to a wide range of individuals and businesses; and

b. The price and information about the main functionality of the item are available before purchase without the need to consult the vendor or supplier. A simple price inquiry is not considered to be a consultation.

2. In determining eligibility of paragraph a. of Note 3, BIS may take into account relevant factors such as quantity, price, required technical skill, existing sales channels, typical customers, typical use or any exclusionary practices of the supplier.

**N.B. to Note 3 (Cryptography Note):** You must submit a classification request or self-classification report to BIS for mass market encryption commodities and software eligible for the Cryptography Note employing a key length greater than 64 bits for the symmetric algorithm (or, for commodities and software not implementing any symmetric algorithms, employing a key length greater than 768 bits for asymmetric algorithms or greater than 128 bits for elliptic curve algorithms) in accordance with the requirements of § 740.17(b) of the EAR in order to be released from the “EI” and “NS” controls of ECCN 5A002 or 5D002.

**Note 4:** Category 5 - Part 2 does not apply to items incorporating or using “cryptography” and meeting all of the following:

a. The primary function or set of functions is not any of the following:

1. “Information security”;

2. A computer, including operating systems, parts and components therefor;

3. Sending, receiving or storing information (except in support of entertainment, mass commercial broadcasts, digital rights management or medical records management); or

4. Networking (includes operation, administration, management and provisioning);

b. The cryptographic functionality is limited to supporting their primary function or set of functions; and

c. When necessary, details of the items are accessible and will be provided, upon request, to the appropriate authority in the exporter's country in order to ascertain compliance with conditions described in paragraphs a. and b. above.

**A. “END ITEMS,” “EQUIPMENT,” “ACCESSORIES,” “ATTACHMENTS,” “PARTS,” “COMPONENTS,” AND “SYSTEMS”**

**I. CRYPTOGRAPHIC “INFORMATION SECURITY”**

**5A002 “Information security” systems, equipment and “components,” as follows (see List of Items Controlled).**

**License Requirements**

Reason for Control: NS, AT, EI

Control(s)	Country Chart (See Supp. No. 1 to part 738)
NS applies to entire entry	NS Column 1.
AT applies to entire entry	AT Column 1.

EI applies to entire entry	Refer to §742.15 of the EAR.
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**License Requirements Note:** See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.

**List Based License Exceptions** (See Part 740 for a description of all license exceptions)

- LVS: Yes: \$500 for “components”.  
N/A for systems and equipment.  
GBS: N/A  
CIV: N/A  
ENC: Yes for certain EI controlled commodities, see §740.17 of the EAR for eligibility.

### List of Items Controlled

**Related Controls:** (1) ECCN 5A002.a controls “components” providing the means or functions necessary for “information security.” All such “components” are presumptively “specially designed” and controlled by 5A002.a. (2) See USML Categories XI (including XI(b)) and XIII(b) (including XIII(b)(2)) for controls on systems, equipment, and components described in 5A002.d or .e that are subject to the ITAR. (3) After classification or self-classification in accordance with § 740.17(b) of the EAR, mass market encryption commodities that meet eligibility requirements are released from “EI” and “NS” controls. These commodities are designated 5A992.c.

**Related Definitions:** N/A

*Items:*

a. Systems, equipment and components, for cryptographic “information security,” as follows:

**N.B.:** For the control of Global Navigation Satellite Systems (GNSS) receiving equipment containing or employing decryption, see ECCN 7A005, and for related decryption “software” and “technology” see 7D005 and 7E001.

a.1. Designed or modified to use “cryptography” employing digital techniques performing any cryptographic function other than authentication, digital signature, or execution of copy-protected “software,” and having any of the following:

#### **Technical Notes:**

1. Functions for authentication, digital signature and the execution of copy-protected “software” include their associated key management function.

2. Authentication includes all aspects of access control where there is no encryption of files or text except as directly related to the protection of passwords, Personal Identification Numbers (PINs) or similar data to prevent unauthorized access.

a.1.a. A “symmetric algorithm” employing a key length in excess of 56-bits; or

**Technical Note:** In Category 5 - Part 2, parity bits are not included in the key length.

a.1.b. An “asymmetric algorithm” where the security of the algorithm is based on any of the following:

a.1.b.1. Factorization of integers in excess of 512 bits (e.g., RSA);

a.1.b.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

a.1.b.3. Discrete logarithms in a group other than mentioned in 5A002.a.1.b.2 in excess of 112 bits (e.g., Diffie-Hellman over an elliptic curve);

a.2. [Reserved]

**N.B.:** See 5A004.a for items formerly specified in 5A002.a.2.

**Note:** 5A002.a does not control any of the following:

(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 is restricted for use in equipment or systems, excluded from 5A002, 5A003 or 5A004 by Note 4 in Category 5 - Part 2 or entries (b) to (i) of this Note, and 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 user-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 (a)(1) of this Note;

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

(b) Cryptographic equipment specially designed and limited for banking use or 'money transactions';

**Technical Note:** 'Money transactions' in 5A002 Note (b) includes the collection and settlement of fares or credit functions.

(c) Portable or mobile radiotelephones for civil use (e.g., for use with commercial civil cellular radio communication systems) that are not capable of transmitting encrypted data directly to another radiotelephone or equipment (other than Radio Access Network (RAN) equipment), nor of passing encrypted data through RAN equipment (e.g., Radio Network Controller (RNC) or Base Station Controller (BSC));

(d) Cordless telephone equipment not capable of end-to-end encryption where the maximum effective range of unboosted cordless operation (i.e., a single, unrelayed hop between terminal and home base station) is less than 400 meters according to the manufacturer's specifications;

(e) Portable or mobile radiotelephones and similar client wireless devices for civil use, that implement only published or commercial cryptographic standards (except for anti-piracy functions, which may be non-published) and also meet the provisions of paragraphs a.2. to a.5. of the Cryptography Note (Note 3 in Category 5 – Part 2), that have been customized for a specific civil industry application with features that do not affect the cryptographic

functionality of these original non-customized devices;

(f) Wireless "personal area network" equipment that implement only published or commercial cryptographic standards and where the cryptographic capability is limited to a nominal operating range not exceeding 30 meters according to the manufacturer's specifications, or not exceeding 100 meters according to the manufacturer's specifications for equipment that cannot interconnect with more than seven devices;

(g) Equipment meeting all of the following:

1. All cryptographic capability specified by 5A002.a meets any of the following:

a. It cannot be used; or

b. It can only be made useable by means of "cryptographic activation;" and

2. When necessary as determined by the appropriate authority in the exporter's country, details of the equipment are accessible and will be provided to the authority upon request, in order to ascertain compliance with conditions described above;

**N.B.1:** See 5A002.a for equipment that has undergone "cryptographic activation."

**N.B.2:** See also 5A002.b, 5D002.d and 5E002.b.

(h) Mobile telecommunications Radio Access Network (RAN) equipment designed for civil use, which also meet the provisions 2. to 5. of part a. of the Cryptography Note (Note 3 in Category 5 – Part 2), having an RF output power limited to 0.1W (20 dBm) or less, and supporting 16 or fewer concurrent users;

(i) Routers, switches or relays, where the "information security" functionality is limited to

the tasks of "Operations, Administration or Maintenance" ("OAM") implementing only published or commercial cryptographic standards; or

(j) General purpose computing equipment or servers, where the "information security" functionality meets all of the following:

1. Uses only published or commercial cryptographic standards; and

2. Is any of the following:

a. Integral to a CPU that meets the provisions of Note 3 in Category 5 - Part 2;

b. Integral to an operating system that is not specified by 5D002; or

c. Limited to "OAM" of the equipment.

b. Designed or modified to enable, by means of "cryptographic activation," an item to achieve or exceed the controlled performance levels for functionality specified by 5A002.a that would not otherwise be enabled;

c. Designed or modified to use or perform "quantum cryptography;"

**Technical Note:** "Quantum cryptography" is also known as Quantum Key Distribution (QKD).

d. Designed or modified to use cryptographic techniques to generate channelizing codes, scrambling codes or network identification codes, for systems using ultra-wideband modulation techniques and having any of the following:

d.1. A bandwidth exceeding 500 MHz;

or

d.2. A "fractional bandwidth" of 20% or more;

e. Designed or modified to use cryptographic techniques to generate the spreading code for “spread spectrum” systems, not controlled in 5A002.d, including the hopping code for “frequency hopping” systems.

b. [Reserved]

c. Commodities classified as mass market encryption commodities in accordance with § 740.17(b) of the EAR.

**5A992 Equipment not controlled by 5A002 (see List of Items Controlled).**

**II. NON-CRYPTOGRAPHIC “INFORMATION SECURITY”**

**License Requirements**

**5A003 “Systems,” “equipment” and “components,” for non-cryptographic “information security,” as follows (see List of Items Controlled).**

*Reason for Control:* AT

**License Requirements**

*Reason for Control:* NS, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738).</i>
AT applies to entire entry	AT Column 1

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
NS applies to entire entry	NS Column 2.
AT applies to entire entry	AT Column 1.

**License Requirements Note:** See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.

**List Based License Exceptions** (See Part 740 for a description of all license exceptions)

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LVS: Yes: \$500 for “components.”  
N/A for systems and equipment.  
GBS: N/A  
CIV: N/A

LVS: N/A  
GBS: N/A  
CIV: N/A

**List of Items Controlled**

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

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

a. Communications cable systems designed or modified using mechanical, electrical or electronic means to detect surreptitious intrusion;

a. [Reserved]

*Note:* 5A003.a applies only to physical layer security.

b. “Specially designed” or modified to reduce the compromising emanations of information-bearing signals beyond what is necessary for health, safety or electromagnetic interference standards.

**III. DEFEATING, WEAKENING OR BYPASSING “INFORMATION SECURITY”**

**5A004 “Systems,” “equipment” and “components” for defeating, weakening or bypassing “information security,” as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, AT, EI

Control(s)	Country Chart (See Supp. No. 1 to part 738)
NS applies to entire entry	NS Column 1.
AT applies to entire entry	AT Column 1.
EI applies to entire entry	Refer to §742.15 of the EAR.

**License Requirements Note:** See §744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.

**List Based License Exceptions** (See Part 740 for a description of all license exceptions)

LVS: Yes: \$500 for “components.”  
N/A for systems and equipment.

GBS: N/A  
CIV: N/A  
ENC: Yes for certain EI controlled commodities, see §740.17 of the EAR for eligibility.

**List of Items Controlled**

*Related Controls:* ECCN 5A004.a controls “components” providing the means or functions necessary for “information security.” All such “components” are presumptively “specially designed” and controlled by 5A004.a.

*Related Definitions:* N/A

*Items:*

a. Designed or modified to perform ‘cryptanalytic functions.’

*Note:* 5A004.a includes systems or equipment, designed or modified to perform ‘cryptanalytic functions’ by means of reverse engineering.

**Technical Note:** ‘Cryptanalytic functions’ are functions designed to defeat cryptographic mechanisms in order to derive confidential variables or sensitive data, including clear text, passwords or cryptographic keys.

b. [Reserved]

**B. TEST, INSPECTION AND “PRODUCTION EQUIPMENT”**

**5B002 “Information Security” test, inspection and “production” equipment, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, AT

Control(s)	Country Chart (See
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	<i>Supp. No. 1 to part 738).</i>
NS applies to entire entry	NS Column 1
AT applies to entire entry	AT Column 1

**List Based License Exceptions** (See Part 740 for a description of all license exceptions)

- LVS: N/A
- GBS: N/A
- CIV: N/A
- ENC: Yes for certain EI controlled equipment, see §740.17 of the EAR for eligibility.

**List of Items Controlled**

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

- a. Equipment “specially designed” for the “development” or “production” of equipment controlled by 5A002, 5A003, 5A004 or 5B002.b;
- b. Measuring equipment “specially designed” to evaluate and validate the “information security” functions of equipment controlled by 5A002, 5A003 or 5A004, or of “software” controlled by 5D002.a or 5D002.c.

**C. “MATERIALS” - [RESERVED]**

**D. “SOFTWARE”**

**5D002 “Software” as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, AT, EI

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738).</i>
NS applies to entire entry	NS Column 1
AT applies to entire entry	AT Column 1
EI applies to “software” in 5D002.a, c.1 and .d, for commodities or “software” controlled for EI reasons in ECCNs 5A002, 5A004 or 5D002.	Refer to §742.15 of the EAR.  <i>Note: Encryption software is controlled because of its functional capacity, and not because of any informational value of such software; such software is not accorded the same treatment under the EAR as other “software”; and for export licensing purposes, encryption software is treated under the EAR in the same manner as a commodity included in ECCN 5A002.</i>

**License Requirements Note:** See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.

**List Based License Exceptions** (See Part 740 for a description of all license exceptions)

CIV: N/A



TSR: N/A  
 ENC: Yes for certain EI controlled software, see §740.17 of the EAR for eligibility.

levels for functionality specified by 5A002.a that would not otherwise be enabled.

**List of Items Controlled**

*Related Controls:* After classification or self-classification in accordance with § 740.17(b) of the EAR, mass market encryption software that meet eligibility requirements are released from “EI” and “NS” controls. This software is designated as 5D992.c.

*Related Definitions:* 5D002.a controls “software” designed or modified to use “cryptography” employing digital or analog techniques to ensure “information security.”

*Items:*

- a. “Software” “specially designed” or modified for the “development,” “production” or “use” of equipment controlled by 5A002, 5A003 or 5A004, or of “software” controlled by 5D002.c;
  - b. “Software” “specially designed” or modified to support “technology” controlled by 5E002;
  - c. Specific “software” as follows:
    - c.1. “Software” having the characteristics, or performing or simulating the functions of the equipment, controlled by 5A002, 5A003 or 5A004;
    - c.2. “Software” to certify “software” controlled by 5D002.c.1;
- Note:* 5D002.c does not apply to “software” limited to the tasks of “OAM” implementing only published or commercial cryptographic standards.
- d. “Software” designed or modified to enable, by means of “cryptographic activation,” an item to achieve or exceed the controlled performance

**5D992 “Information Security” “software” not controlled by 5D002 as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738).</i>
AT applies to entire entry	AT Column 1

**License Requirements Note:** See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.

**List Based License Exceptions** (See Part 740 for a description of all license exceptions)

CIV: N/A  
 TSR: N/A

**List of Items Controlled**

*Related Controls:* This entry does not control “software” designed or modified to protect against malicious computer damage, e.g., viruses, where the use of “cryptography” is limited to authentication, digital signature and/or the decryption of data or files.

*Related Definitions:* N/A

*Items:*

- a. [Reserved]
- b. [Reserved]
- c. “Software” classified as mass market encryption software in accordance with § 740.17(b) of the EAR.

**E. “TECHNOLOGY”**

**5E002 “Technology” as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* NS, AT, EI

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738).</i>
NS applies to entire entry	NS Column 1
AT applies to entire entry	AT Column 1
EI applies to “technology” in 5E002.a for commodities or “software” controlled for EI reasons in ECCNs 5A002, 5A004 or 5D002, and to “technology” in 5E002.b.	Refer to § 742.15 of the EAR.

**License Requirements Notes:**

*(1) See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or*

*“development” of such microprocessors.*

*(2) When a person performs or provides technical assistance that incorporates, or otherwise draws upon, “technology” that was either obtained in the United States or is of US-origin, then a release of the “technology” takes place. Such technical assistance, when rendered with the intent to aid in the “development” or “production” of encryption commodities or software that would be controlled for “EI” reasons under ECCN 5A002, 5A004 or 5D002, may require authorization under the EAR even if the underlying encryption algorithm to be implemented is from the public domain or is not of U.S.-origin.*

**List Based License Exceptions** (See Part 740 for a description of all license exceptions)

- CIV: N/A
- TSR: N/A
- ENC: Yes for certain EI controlled technology, see §740.17 of the EAR for eligibility.

**List of Items Controlled**

*Related Controls:* See also 5E992. This entry does not control “technology” “required” for the “use” of equipment excluded from control under the Related Controls paragraph or the Technical Notes in ECCN 5A002 or “technology” related to equipment excluded from control under ECCN 5A002.

*Related Definitions:* N/A

*Items:*

- a. “Technology” according to the General Technology Note for the “development,” “production” or “use” of equipment controlled by 5A002, 5A003, 5A004 or 5B002, or of “software” controlled by 5D002.a or 5D002.c.
- b. “Technology” to enable, by means of “cryptographic activation,” an item to achieve or

exceed the controlled performance levels for functionality specified by 5A002.a that would not otherwise be enabled.

*Note:* 5E002 includes “information security” technical data resulting from procedures carried out to evaluate or determine the implementation of functions, features or techniques specified in Category 5-Part 2.

**5E992 “Information Security” “technology” according to the General Technology Note, not controlled by 5E002, as follows (see List of Items Controlled).**

**License Requirements**

*Reason for Control:* AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738).</i>
AT applies to entire entry	AT Column 1

**License Requirements Note:** See § 744.17 of the EAR for additional license requirements for microprocessors having a processing speed of 5 GFLOPS or more and an arithmetic logic unit with an access width of 32 bit or more, including

*those incorporating “information security” functionality, and associated “software” and “technology” for the “production” or “development” of such microprocessors.*

**List Based License Exceptions** (See Part 740 for a description of all license exceptions)

CIV: N/A  
 TSR: N/A

**List of Items Controlled**

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

- a. [Reserved]
- b. “Technology”, n.e.s., for the “use” of mass market commodities controlled by [5A992.c](#) or mass market “software” controlled by [5D992.c](#).

**EAR99 Items subject to the EAR that are *not* elsewhere specified in this CCL Category or in any other category in the CCL are designated by the number EAR99.**