

SEMI T20.2-1109 (Reapproved 0322) GUIDE FOR QUALIFICATIONS OF AUTHENTICATION SERVICE BODIES FOR DETECTING AND PREVENTING COUNTERFEITING OF SEMICONDUCTORS AND RELATED PRODUCTS

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NOTICE: Paragraphs entitled ‘NOTE:’ are not an official part of this Standard or Safety Guideline and are not intended to modify or supersede the official Standard or Safety Guideline. These have been supplied by the global technical committee to enhance the usage of the Standard or Safety Guideline.

NOTICE: The section symbol (§) is used to reference a numbered section, paragraph, or header and all subordinate paragraphs, headers, and embedded material (i.e., EXCEPTIONs, lists) therein. The paragraph symbol (§) is used to reference a particular numbered paragraph and embedded material therein. When duplicated (i.e., §§ and §§) the symbols are used to reference more than one section or paragraph, respectively.

1 Purpose

1.1 The approach that is covered by this Guide involves (1) labeling by trusted brand owners of batches of authentic parts with a secure batch number (encrypted serial number) on the product package and (2) an authentication service available to anyone considering purchase of a batch of parts, using the encrypted batch number as the basis for a validation check of the license plate.

NOTE 1: The nature of the license plate and its location on the product package are expected to be specified in the standard covering object labeling now under development in the Anti-Counterfeiting Task Force of the Traceability Committee.

1.2 This Guide is intended to supplement the requirements outlined in SEMI T20 in regard to the qualifications required of authentication service bodies.

2 Scope

2.1 This Guide describes the qualifications required for an authentication service body (ASB) to certify the authenticity of the encrypted serial number (refer to § 1.1). This authentication service involves the storage, examination and verification of the encrypted serial number submitted to the ASB by a brand owner (i.e., an entity, including independent or captive device manufacturers, fab-less suppliers, and authorized distributors, but excluding foundries, that is legally responsible for the integrity and performance of a product for sale to buyers).

2.2 This Guide includes:

2.2.1 Information, supply, and operating security requirements,

2.2.2 Requirements for verifying the authenticity of products through secure codes, and

2.2.3 ASB communication requirements.

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Limitations

3.1 This Guide does not address the details of either object labeling or authentication service communication.

NOTE 2: These issues are being developed in other related standards that are or will be appended to SEMI T20.

3.2 This Guide also does not address the requirements for bodies providing audit and certification of authentication service bodies. This aspect is covered in ISO/IEC 27002 and ISO 28003.

4 Referenced Standards and Documents

4.1 SEMI Standards and Safety Guidelines

SEMI M59 — Terminology for Silicon Technology

SEMI T20 — Specification for Authentication of Semiconductors and Related Products

4.2 ANSI Standard¹

ANSI/NASPO-SA-v3.0P-2005 — Security Risk Management Requirements Definition

4.3 ISO Standards²

ISO/IEC 16022 — Information Technology – International Symbology Specification – Data Matrix

ISO/IEC 27001 — Information Technology – Security Techniques – Information Security Management Systems – Requirements

ISO/IEC 27002 — Information Technology – Security Techniques – Code of Practice for Information Security Management (formerly ISO/IEC 17799)

ISO 28003 — Security Management Systems for the Supply Chain – Requirements for Bodies Providing Audit and Certification of Supply Chain Security Management Systems

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

5 Terminology

5.1 General terms, acronyms, and symbols associated with silicon technology and used in this Standard are listed and defined in SEMI M59.

5.2 Terms, acronyms, and symbols associated with anti-counterfeiting techniques are listed in SEMI T20.

6 Essential Qualifications for ASBs

6.1 Authentication service bodies (ASBs) shall:

6.1.1 Maintain information, supply, and operational security as evidenced by third-party certification in accordance with any one of the following as agreed between the ASB and its clients:

- Class I of ANSI/NASPO-SA-v3.0P-2005,
- Class II of ANSI/NASPO-SA-v3.0P-2005, or
- ISO/IEC 27001, with particular note given to ISO/IEC 27002.³

6.1.2 Register with an appropriate registry by providing to the registry its ASB name, the three digit ID that appears in all Authentication codes that it issues, the URL where its services may be accessed, and its level of certification and maintain this information by updating it at least once per calendar year.

6.1.3 Provide unique, nonsequential, consumable security codes using 2D Data Matrix (ECC 200) as described in ISO/IEC 16022 or other symbology with equivalent characteristics that are (1) capable of being created on demand by the brand owner using the service and (2) included on a label for placement on the appropriate part or part package.

NOTE 3: Characteristics of the label and label positions on the part or package are expected to be specified in the Standard relating to object labeling now under development in the Anti-Counterfeiting Task Force of the Traceability Committee.

6.1.3.1 Secure codes by encryption, public/private key, symmetric key, random number generation, etc., as agreed between the ASB and the brand owner.

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² International Organization for Standardization, ISO Central Secretariat, BIBC II, Chemin de Blandonnet 8, CP 401, 1214 Vernier, Geneva, Switzerland; Telephone: +41.22.749.01.11, <http://www.iso.org>

³ Additional related information may also be found in the ISO 28000 series documents listed in § 7.