

# SEMI E167.1-1213

## SPECIFICATION FOR SECS-II PROTOCOL FOR EQUIPMENT ENERGY SAVING MODE COMMUNICATIONS

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## 1 Purpose

1.1 The SEMI Specification for Equipment Energy Saving Mode Communications (EESM) defines concepts and message services. It does not provide for implementation using a specific protocol. This Document maps those concepts and message services to the SECS-II protocol.

## 2 Scope

2.1 This Document specifies implementation of the message services and data of the Specification for Equipment Energy Saving Mode Communications (EESM) using the SECS-II protocol.

2.2 This Document applies to all implementations of the Specification for Equipment Energy Saving Mode Communications (EESM) that use the SECS-II message protocol (SEMI E5).

**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 None.

## 4 Referenced Standards and Documents

### 4.1 SEMI Standards and Safety Guidelines

SEMI E5 — SEMI Equipment Communications Standard 2 Message Content (SECS-II)

SEMI E30 — Generic Model for Communications and Control of Manufacturing Equipment (GEM)

SEMI E167 — Specification for Equipment Energy Saving Mode Communications (EESM)

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

## 5 Terminology

### 5.1 Abbreviations and Acronyms

5.1.1 *EESM* — Equipment Energy Saving Mode Communications (Refers to the capability described in the SEMI Specification for Equipment Energy Saving Mode Communications.)

### 5.2 Definitions

5.2.1 *collection event* — an event (or grouping of related events) on the equipment that is considered to be significant to the host. [SEMI E30]

5.2.2 *host* — the factory computer system or an intermediate system that represents the factory and the user to the equipment. [SEMI E87]

5.2.3 *idle mode* — the condition where the equipment is energized and readied for process mode (all systems ready and temperatures controlled) but is not actually performing any active function such as material movement or processing. [SEMI S23]

5.2.4 *production equipment* — equipment used to produce semiconductor devices, including wafer sorting, process, and metrology equipment and excluding material handling equipment. [SEMI E157]

5.2.5 *sleep mode* — the condition where the equipment is energized but it is using less energy than in idle mode. The sleep mode is primarily differentiated from idle mode in that it is initiated by a specific single command signal provided to equipment, either from an equipment actuator, from an equipment electric interface, or a message received through factory control software (e.g. SECS). Other than the possible initiation of the sleep mode by an equipment actuator, entry into the sleep mode does not require manual actions. [SEMI S23]

## 6 Conventions

### 6.1 Requirements Identification

6.1.1 The following notation specifies the structure of requirement identifiers.

6.1.1.1 The following requirements prefix format is used at the beginning of requirement text. See Table 1 for the format notation of the requirements prefix.

- [Esss.ss-RQ-nnnnnn-nn]

6.1.1.2 To mark the end of the requirement text the following suffix format is used.

- [/RQ]

6.1.1.3 Requirements in the body text are highlighted with a border and light green background (may appear gray in black and white printouts).

[Esss.ss-RQ-nnnnnn-nn] Requirement text. [/RQ]

**Table 1 Requirement Identifiers**

| <i>Format Notation</i> | <i>Purpose</i>                                                                                                         |
|------------------------|------------------------------------------------------------------------------------------------------------------------|
| Esss.ss                | SEMI Standards Specification identifier. Examples: E087.00, E087.01, E134.00.                                          |
| RQ                     | Indicates this is a requirement identifier.                                                                            |
| nnnnn                  | Unique five-digit number within this Specification. 90000–99999 are reserved for use by SEMI.                          |
| .nn                    | Two-digit number that indicates version level of the requirement (.00 is used for the first version of a requirement). |
| /RQ                    | Indicates the end of a requirement.                                                                                    |

6.1.2 Requirements in tables are delimited in one of two ways.

6.1.2.1 Where the requirement occupies an entire row in the table, the requirement ID is placed in column 1. No ‘[/RQ]’ is used to mark the end of the requirements text in this case. The table may also contain rows that are not requirements. In this case, the column 1 cell is left blank.

6.1.2.2 Nonrequirements text related to a requirements row may be included in an adjacent row. The relationship between the rows is indicated by a broken line separating the two.

6.1.2.3 Where the requirement occupies only one cell, the text in the cell includes the requirement ID prefix and suffix similar to requirements in the body text.

6.1.2.4 No cell in a table will contain both requirement and nonrequirement text.

6.1.2.5 Cells that contain requirements are shaded light green.

6.1.2.6 Table 2 provides an example of requirements in a table. Note that in this example, the same requirement is presented in two alternative formats. In practice, mixing the two approaches in the same table is not typically done.

**Table 2 Example Table With Requirements**

| <i>RequirementID</i> | <i>Statement</i>                                                                                          | <i>Additional Detail</i>                                                        |
|----------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Esss.ss-RQ-nnnnnn-nn | The light shall be blue                                                                                   | There shall be no similar color in the light panel.                             |
|                      | The blue light is typically placed at the leftmost position in the light panel.                           |                                                                                 |
|                      | [Esss.ss-RQ-nnnnnn-nn] The light shall be blue. There shall be no similar color in the light panel. [/RQ] | The blue light is typically placed at the leftmost position in the light panel. |

6.1.3 Only text marked with the requirement identifier is a requirement of this Specification.

6.1.3.1 Clarification, examples, and related recommendations may be provided near a requirement, but are not part of the requirement.