SEMI E118.1-1103
SPECIFICATION FOR SECS-I AND SECS-II PROTOCOL FOR WAFER ID READER COMMUNICATION INTERFACE STANDARDS

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1 Purpose

1.1 This document maps the services and data of the Wafer ID Reader (WIDR) standard to SECS-II streams and functions and data definitions.

2 Scope

2.1 This document applies to all implementations of WIDR that use the SECS-II message protocol (SEMI E5).

NOTICE: This standard does not purport to address safety issues, if any, associated with its use. It is the responsibility of the users of this standard to establish appropriate safety and health practices and determine the applicability of regulatory or other limitations prior to use.

3 Referenced Standards

3.1 *SEMI Standards*

SEMI E4 — SEMI Equipment Communications Standard 1 Message Transfer (SECS-I)

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

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

4 Terminology

4.1 *Abbreviations and Acronyms*

4.1.1 *SECS* — SEMI Equipment Communications Standard

4.1.2 *WIDR* — Wafer ID Reader

5 Physical Requirements

5.1 The WIDR using the SECS-I protocol shall use a 9-pin female connector.

6 Service Message Mapping

6.1 Table 1 shows the specific SECS-II streams and functions that shall be used for SECS-II implementations of the service messages defined in SEMI E118.

6.2 Request and notification messages are mapped to primary (odd-numbered) SECS-II functions and response messages are mapped to secondary (even-numbered) SECS-II functions.

6.3 In some cases, a common set of parameters allows more than one service to be mapped to the same stream and function, with an additional SECS-II data item used to differentiate between the two services.

Table 1 Services Mapped to SECS-II Messages

Message Name	*Stream,Function*	*SECS-II Name*
ChangeState	S18,F13/F14	Subsystem Command Request/Acknowlege
Get Attributes	S18,F1/F2	Read Attribute Request/Data
Get Status	S18,F13/F14	Subsystem Command Request/Acknowledge
Perform Diagnostics	S18,F13/F14	Subsystem Command Request/Acknowledge
Read WID	S18,F9/F10	Read ID Request/Data
Reset	S18,F13/F14	Subsystem Command Request/Acknowledge
Set Attributes	S18,F3/F4	Write Attribute Request/Acknowledge
Read WIDC (See NOTE 1.)	S18,F9/F10	Read 2D Code Condition Request/Data

NOTE 1: This message can not be implemented appropriately. This message will be remapped.

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7 Service Parameter to Data Item Mapping

7.1 Table 2 shows the mapping between message parameters defined by WIDR and data items defined by SECS-II. For parameters specified in the definitions of a WIDR service, either the parameters themselves, or individual elements of complex parameters, map to a specific data item.

Table 2 Service Parameters to Data Item Mapping

Parameter Name	*SECS-II Data Item*	*Format*	*Values*
Attribute ID	ATTRID	20	Name of attribute
Attribute Value	ATTRVAL	20	
Wafer ID	MID	20	
2D Code Read Condition	List of CONDITION	L,7 1. <Cell Size> 2. <Contrast> 3. <Damage Percent> 4. <Number Error Bits> 5. <Read Time> 6. <Matrix Style> 7. <Matrix Polarity>	Current values of Cell Size, Contrast, Damage Percent, Number Error Bits, Read Time, Matrix Style, Matrix Polarity with the corresponding attributes for Code Condition. See Table 6.
PM Information	STATUS	20	"NE" = Normal execution, "MR" = Maintenance required
Result Status	SSACK	20	"NO" = Normal operation; "EE" = Execution error; "CE" = Communication error; "HE" = Hardware error
Status	List of STATUS	L,4 1. <PMInformation> 2. <AlarmStatus> 3. <OperationalStatus> 4. <HeadStatus>	Current values of PM Information with the corresponding attributes for WIDR and Head (if applicable). See Tables 4 and 5.
StateRequest	CPVAL	20	"OP", "MT"

NOTE 1: There are also data items used in SECS-II messages that do not map to specific services parameters. Services with the same set of parameters are mapped to the same SECS-II message by adding an additional data item to differentiate between the services. Table 3 contains the SECS-II data items that have not a corresponding WIDR service parameter.

Table 3 Additional Data Requirements Table

SECS-II Data Item	*Function*	*Value*
SSCMD	Used to differentiate between different subsystem commands indicated.	"ChangeState" "GetStatus" "Perform Diagnostics" "Reset"

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