

SEMI E94.1-1107

SPECIFICATION FOR SECS-II PROTOCOL FOR CONTROL JOB MANAGEMENT (CJM)

This standard was technically approved by the global Information & Control Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on September 5, 2007. It was available at www.semi.org in October 2007 and on CD-ROM in November 2007. Originally published November 2004; previously published November 2006.

1 Purpose

1.1 This document maps the services and data of SEMI E94 to SECS-II streams and functions and data definitions.

2 Scope

2.1 This is a specification covering equipment supporting automated control job management.

2.2 This document applies to all implementations of SEMI E94 that use the SECS-II message protocol [SEMI E5]. Compliance to this standard requires compliance to both SEMI E94 and 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 Limitations

3.1 This specification applies to semiconductor equipment that also uses SEMI E40 Process Jobs.

4 Referenced Standards and Documents

4.1 SEMI Standards

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

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

SEMI E39.1 — SECS-II Protocol for Object Services Standard (OSS)

SEMI E40 — Standard for Processing Management

SEMI E53 — Event Reporting

SEMI E94 — Specification for Control Job Management

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

5 Terminology

5.1 None.

6 Mapping

6.1 This section shows the specific SECS-II streams and functions that shall be used for SECS-II implementation of the services defined in SEMI E94, as well as the parameter mapping for data attached to services.

6.2 Message Mapping

6.2.1 Services Message Mapping

6.2.1.1 Table 1 defines the relationships between SEMI E94 services and SECS-II messages.

Table 1 Services Message Mapping Table

<i>Service Name</i>	<i>Stream, Function</i>	<i>SECS-II Message Name</i>
Create Object	S14,F9/10	Create Object Request/Acknowledge [SEMI E39.1]
CJAbort	S16,F27/28	Control Job Command Request/Acknowledge
CJCancel	S16,F27/28	Control Job Command Request/Acknowledge
CJDeselect	S16,F27/28	Control Job Command Request/Acknowledge
CJHOQ	S16,F27/28	Control Job Command Request/Acknowledge
CJPause	S16,F27/28	Control Job Command Request/Acknowledge
CJResume	S16,F27/28	Control Job Command Request/Acknowledge
CJStart	S16,F27/28	Control Job Command Request/Acknowledge
CJStop	S16,F27/28	Control Job Command Request/Acknowledge

6.2.2 Event Message Mapping

6.2.2.1 Table 2 defines the relationships between SEMI E94 collection events and SECS-II messages.

Table 2 Event Message Mapping Table

<i>Event Name</i>	<i>Stream, Function</i>	<i>SECS-II Message Name</i>
All state model transitions	If SEMI E30 style events: S6,F11/12 If SEMI E53 style events: S6,F11/12 S6,F13/14	If SEMI E30 style events: Event Report Send/Acknowledge If SEMI E53 style events: Event Report Send/Acknowledge Annotated Event Report Send/Ack

6.2.3 Parameter Mapping

6.2.3.1 Table 3 defines the relationships between SEMI E94 service parameters and SECS-II data definitions.

Table 3 Parameter to SECS-II Data Items Mapping

<i>Parameter Name</i>	<i>Range</i>	<i>SECS-II Data Item</i>
ACKcode	TRUE, FALSE	ACKA
Action	SAVEJOBS, REMOVEJOBS	CPVAL (U1) 0 = SAVEJOBS. This command does not destroy the Process Jobs specified by this Control Job. 1 = REMOVEJOBS. This command destroys all Process Jobs specified by this Control Job.
CtrlJobID	1–80 characters (Conforms to ObjID in SEMI E39.1, § 6.)	OBJID
ErrorCode	Enumerated	ERRCODE
ErrorInfo	Error	L,2 1. ErrorCode 2. ErrorText
ErrorText	1–80 characters	ERRTEXT

<i>Parameter Name</i>	<i>Range</i>	<i>SECS-II Data Item</i>
Status	Acknowledgement and error	L,2 1. ACKcode 2. ErrorInfo

6.2.4 SECS-II Data Items without Corresponding SEMI E94 Parameters

6.2.4.1 Table 4 contains the SECS-II data items that do not correspond to SEMI E94's service parameter.

Table 4 Additional Data Item Requirements Table

<i>Function</i>	<i>SECS-II Data Item</i>
Used to identify control job commands.	CTLJOBCMD
Used to satisfy SECS-II conventions for linking a multi block inquiry with subsequent multi block message.	DATAID

6.2.5 Variable Data Item Mapping

6.2.5.1 Table 5 shows the specific SECS-II data classes, and formats needed for SECS-II implementations of SEMI E94 variable data items.

Table 5 Variable Data Item Mapping

<i>Variable Name</i>	<i>Class</i>	<i>Format</i>
CtrlJobID	DVVAL	<OBJID>
QueueAvailableSpace	SV	5Q (U1, U2, U4, U8)
QueuedCJobs	SV	L,n n = number of queued control jobs 1. <CtrlJobID ₁ > ... n. <CtrlJobID _n >
SetUpName	ECV	20 (A[1..80]) Zero length string is used by the equipment to indicate "unknown".

7 SECS-II Attribute Definitions

7.1 ControlJob Object SECS-II Attributes Definitions

7.1.1 The following are the SECS-II structure definitions for the SEMI E94 ControlJob Object.

Table 6 ControlJob Object Attribute Definitions

<i>Attribute Name</i>	<i>Attribute Data Form: SECS-II Structure</i>
"ObjType"	20 (A) "ControlJob"
"ObjID"	<OBJID> CtrlJobID (Conforms to the restrictions of ObjID as specified in SEMI E39.1, § 6.)
"CarrierInputSpec"	L,n n = number of input carriers 1. <CARRIERID ₁ > ... n. <CARRIERID _n >