

SEMI E37.1-0702 (Reapproved 0308) HIGH-SPEED SECS MESSAGE SERVICE SINGLE SELECTED- SESSION MODE (HSMS-SS or HSMS-SSS)

This standard was technically approved by the global Information and Control Committee. This edition was approved for publication by the global Audits and Reviews Subcommittee on December 20, 2007. It was available at www.semi.org in February 2008 and on CD-ROM in March 2008. Originally published 1995; previously published July 2002.

1 Purpose

- 1.1 HSMS-SS provides a means for independent manufacturers to produce implementations which can be connected without requiring specific knowledge of one another.
- 1.2 HSMS-SS is intended as an alternative to SEMI E4 (SECS-I) for applications where higher speed communication is needed.
- 1.3 HSMS-SS is intended as an alternative to SEMI E13 (SECS Message Services) for applications where TCP/IP is preferred over OSI as a communications basis.

2 Scope

2.1 High-Speed SECS Message Services Single-Session Mode (HSMS-SS) is a subsidiary standard to High-Speed SECS Message Services (HSMS) Generic Services.

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 Reference 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)

SEMI E37 — High-Speed SECS Message Services (HSMS) Generic Services

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

4 Terminology

4.1 Definitions

4.1.1 *device ID* — a 15-bit field in the message header used to identify a sub-entity within the equipment.

4.2 In addition, all definitions for HSMS Generic Services apply.

4.3 Note that the terms HSMS and HSMS generic services both refer to the HSMS Generic Services standard definition [SEMI E37].

5 HSMS-SS Overview and State Machine

5.1 This definition defines the HSMS-SS-specific use of HSMS Generic Services suitable for applications requiring a simple SECS-I replacement. The purpose of this standard is to explicitly limit the capabilities of the HSMS Generic Services to the minimum necessary for this type of application. Specifically, HSMS imposes the following limitations:

1. HSMS-SS eliminates the use of a number of HSMS procedures. Deselect is not to be used to end HSMS-SS communications (use Separate instead), and the Reject procedure is optional.
2. HSMS-SS limits certain other procedures such as Select to simplify operation for the specific case of SECS-I replacement.

5.2 The remainder of this document describes these limitations in more detail.

5.3 *HSMS-SS State Machine* — The HSMS-SS behavior and state machine differ from that specified in the HSMS Generic Services in the following ways:

1. The SelectionCounter defined in HSMS Generic Services is not required.
2. Various transitions are defined differently as illustrated in the HSMS-SS state machine illustrated below.

5.4 The HSMS-SS state machine is illustrated in the diagram below.

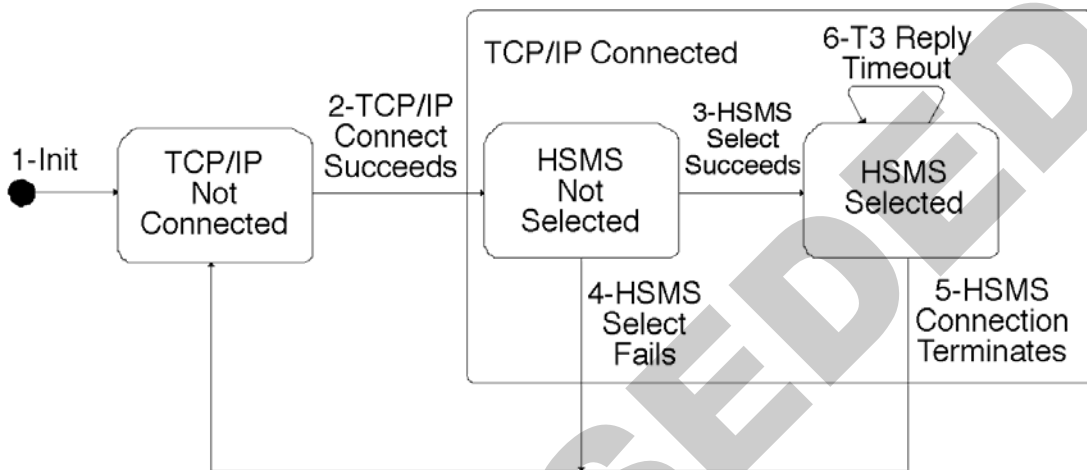


Figure 1

5.5 *State Transition Table for Passive Mode Connect*

Table 1 HSMS-SS Passive Mode Connect State Transitions

#	Old State	New State	Trigger	Actions
1	—	TCP/IP NOT CONNECTED	Initialization.	
2	TCP/IP NOT CONNECTED	HSMS NOT SELECTED	TCP/IP Connect Succeeds: 1. TCP/IP “accept” succeeds.	Start T7 timeout.
3	HSMS NOT SELECTED	HSMS SELECTED	HSMS Select Succeeds: 1. Receive Select.req and decide to allow it.	1. Cancel T7 timeout; and 2. Send Select.rsp with zero SelectStatus.
4	HSMS NOT SELECTED	TCP/IP NOT CONNECTED	HSMS Select Fails: 1. T7 Timeout waiting for Select.req; or 2. Receive Select.req and decide to reject it and send Select.rsp with non-zero SelectStatus; or 3. Receive any HSMS message other than Select.req; or 4. Receive HSMS message length not equal to 10; or 5. Receive bad HSMS message header; or 6. T8 timeout waiting for TCP/IP; or 7. Other unrecoverable TCP/IP Error (entity-specific).	1. Close TCP/IP connection.

#	Old State	New State	Trigger	Actions
5	HSMS SELECTED	TCP/IP NOT CONNECTED	HSMS Connection Terminates: 1. Decide to terminate and send Separate.req; or 2. Receive Separate.req; or 3. T6 timeout waiting for Linktest.rsp; or 4. Receive HSMS message <10; or 5. Receive HSMS message length > maximum supported by entity; or 6. Receive bad HSMS message header; or 7. T8 timeout waiting for TCP/IP; or 8. Other uncorrectable TCP/IP Error (entity- specific).	1. Close TCP/IP connection.
6	HSMS SELECTED	HSMS SELECTED	T3 Timeout waiting for Data Reply Message.	1. Cancel the Data Transaction as appropriate (entity-specific) but do not terminate the TCP/IP connection; and 2. If entity is EQUIPMENT send SECS-II S9F9.

5.6 State Transition Table for Active Mode Connect

Table 2 HSMS-SS Active Mode Connect State Transitions

#	Old State	New State	Trigger	Actions
1	—	TCP/IP NOT CONNECTED	Initialization	
2	TCP/IP NOT CONNECTED	HSMS NOT SELECTED	TCP/IP Connect Succeeds: 1. Decide to connect.	1. TCP/IP Connect; and 2. Send Select.req; and 3. Start T6 timeout.
3	HSMS NOT SELECTED	HSMS SELECTED	HSMS Select Succeeds: 1. Receive Select.rsp with zero SelectStatus.	1. Cancel T6 timeout.
4	HSMS NOT SELECTED	TCP/IP NOT CONNECTED	HSMS Select Fails: 1. T6 Timeout waiting for Select.rsp; or 2. Receive Select.rsp with non-zero Select.Status; or 3. Receive any HSMS message other than Select.rsp; or 4. Receive HSMS message length not equal to 10; or 5. Receive bad HSMS message header; or 6. T8 timeout waiting for TCP/IP; or 7. Other unrecoverable TCP/IP Error (entity- specific).	1. Close TCP/IP connection; and 2. Start T5 Timeout.