



SEMI AUX023-0915 OVERVIEW GUIDE TO SEMI STANDARD FOR 450 MM WAFERS

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SEMI® INTERNATIONAL STANDARDS

450mm SEMI Standards Overview

I) Purpose

A purpose of this document is to promote an integrated understanding of the 450mm SEMI Standards.

The 450mm standards extend over subjects covered by the following committees:

Silicon Wafer Committee

Physical Interfaces & Carriers Committee

Information & Control Committee

Japan Packaging Committee

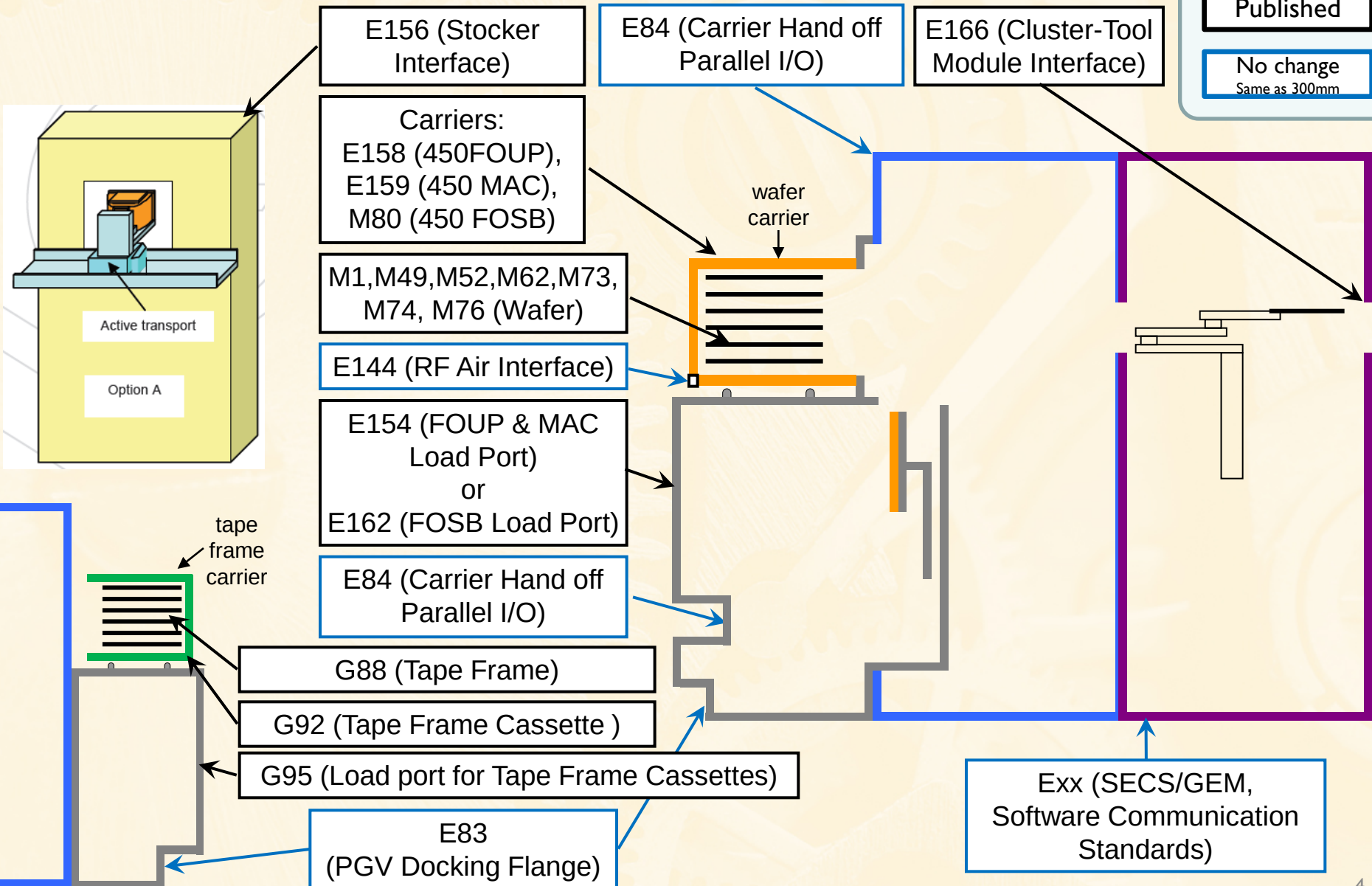
2) The List of Published 450mm SEMI Standards

Standard Number	Title
SEMI M1	Specification for Polished Single Crystal Silicon Wafers
SEMI M49	Guide for Specifying Geometry Measurement Systems for Silicon Wafers for the 130 nm to 16 nm Technology Generations
SEMI M52	Guide for Specifying Scanning Surface Inspection Systems for Silicon Wafers for the 130 nm to 11 nm Technology Generations
SEMI M62	Specifications for Silicon Epitaxial Wafers
SEMI M73	Test Methods for Extracting Relevant Characteristics from Measured Wafer Edge Profiles
SEMI M74	Specification for 450mm Diameter Mechanical Handling Polished Wafer
SEMI M76	Specification for Developmental 450mm Diameter Polished Single Crystal Wafer
SEMI M80	Mechanical Specification for Front-Opening Shipping Box Used to Transport and Ship 450 mm Wafers
SEMI E83	Specification for PGV Mechanical Docking Flange
SEMI E154	Mechanical Interface for 450mm Load Port
SEMI E156	Mechanical Specification for 450mm AMHS Stocker to Transport Interface
SEMI E158	Mechanical Specification for Fab Wafer Carrier Used to Transport and Store 450mm Wafers (450 FOUP) and Kinematic Coupling
SEMI E159	Mechanical Specification for Fab Wafer Carrier Used to Transport and Store 450mm Wafers (450 MAC) and Kinematic Coupling
SEMI E162	Mechanical Interface Specification for 450 mm Front-Opening Shipping Box Load Port
SEMI E166	Specification for 450 mm Cluster Module Interface: Mechanical Interface and Transport Standard
SEMI G88	Specification for Tape Frame for 450 mm Wafer
SEMI G92	Specification for Tape Frame Cassette for 450 mm Wafer
SEMI G95	Mechanical Interface Specification for 450 mm Load Port for Tape Frame Cassettes in the Backend Process

3) Overview of 450mm SEMI Standards

Status

Published

No change
Same as 300mm

4) 450mm/300mm Comparison Table

Item		300mm	450mm	Standard Name
Wafer		N/A	M74	Mechanical Handling Polished Wafer
		M1	M1 (Rev)	Polished Single Crystal Si Wafer
		M28	M76	Developmental Polished Single Crystal Si Wafer
		M49	←	Geometry Measurement Systems for Silicon Wafers
		M52	←	Scanning Surface Inspection Systems for Silicon Wafers
		M62	←	Silicon Epitaxial Wafers
		M73	←	Test Methods for Extracting Relevant Characteristics from Measured Wafer Edge Profiles
Load Port		E15.1	E154	Load Port
		E62		FIMS
		E63		BOLTS-M
		E64		Cart Docking Interface
		E110		Indicator / Switch Placement
		E83	E83 (Rev)	PGV Docking Flange
		N/A	E162	FOSB Load port
		G82	G95	Load Port for Tape Frame Cassettes
Carrier	FOUP	E1.9	E158	Cassette
		E47.1		Front Opening Unified Pod
		E57		Kinematic Coupling
	MAC	N/A	E159	Multi Application Carrier
	FOSB	M31	M80	Front Opening Shipping Box
	Tape Frame	G77	G92	Tape Frame Cassette
Stocker Interface		E85	E156	Stocker Interface
Cluster Tool		E21.1	E166	Cluster-Tool Module Interface
		E22.1		Cluster-Tool End Effector #1)
Communication		E84	←	Carrier Hand off Parallel I/O
		E99	←	Carrier Reader/Writer Functional
		E144	←	RF Air Interface
Packaging		G74	G88	Tape Frame
		G87		Plastic Tape Frame

NOTE #1: A set of Wafer Transport Plane Exclusion Zone Dimensions example is given as Related Information in E166.

5) 300mm PIC Related Standards (Reference)

