CFX Mandatory and Optional Capabilities by Equipment Type

This guide lists all of the mandatory CFX capabilities for equipment to be listed on the CFX Qualified Products List (QPL) and optional capabilities vendors can choose to qualify.
This table is a reference guide only. For the latest approved capabilities and their explanations, as well as the CFX messages that comprise them, read IPC-2591, Connected Factory Exchange (CFX).

Legend

M – Required for all machines in class / MR – Required if equipped with a barcode/RFID reader / O – Optional capability / Blank – Not applicable to machine class

		Endpoint Class														
Category	**Capability**	**Generic Equipment Endpoint**	**Automated Labeler / Laser Marker**	**Stencil Printer**	**SPI**	**SMT Mounter (Pick and Place)**	**AOI/AXI**	**Solder Reflow Oven**	**Reflow Profiling**	**Selective Solder**	**Through-Hole Component Insertion (THT)**	**Test Equipment**	**Conformal Coating**	**Cleaning**	**Hand Soldering**	**Wave Soldering**
CFX Core	**Core Communications**	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Track and Trace	**WIP Tracking**	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	WIP Identification	MR	M	MR	MR	MR	MR	MR	MR	MR	MR	MR	MR	MR	MR	MR
	Unit Initialization	O	M	O	O	O	O	O	O	O	O	O	O	O		O
	Panelized Unit Initialization	O	M	O	O	O	O	O	O	O	O	O	O	O		O
	Operator Tracking	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Equipment Data Tracking	O	O	O	O	O	O	O	O	O	O	O	O	O		O
	Unit Disqualification / Scrapping	O	O													
	Detailed Activity Tracking	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Material Trace with Internal Setup	O	O	O		O		O	O	O	O	O	O	O	O	O
	Exact Material Trace with Internal Setup	O				MR					MR					
	Exact Material Trace with External Setup	O				M					M					
	Tool Trace	MR	O	MR		O			O	O	O	O	O	O	O	O
Process Interlocking	**Process Route Validation**	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Unit Status Validation	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Unit Trace Validation	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Recipes	**Basic Recipe Visibility**	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

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	Remote Recipe Selection	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Remote Recipe Management	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Setup Validation	Internal Setup Validation	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Offline Setup					O					O					
	External Setup Validation	O	O	O		O					O					
Blocking and Locking	Material Blocking for External Setup	O	O	O		O					O					
	Material Blocking for Internal Setup	O	O	O		O					O					
	Station Locking	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Personalization	Unit Personalization					O					O	O				
Station Information	Station Performance Reporting	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	Advanced Station Performance Reporting	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Station Configuration Management	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Station Maintenance Tracking	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	Energy Consumption Tracking	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Test and Inspection	Production Unit Inspection				M		M									
	Automated Optical Inspection (AOI/AXI)						M									
	AOI Component Offset Measurement						O									
	Solder Paste Inspection				M											

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	Production Unit Test											M				
Specialized Processing	Solder Paste Reflow Processing							M								
	Solder Paste Reflow Profiling								M							
	Selective Solder Processing									M						
	Solder Paste Printing			M												
	Conformal Coating												M			
	Cleaning													M		
	Automated Labeler/Laser Marker		M													
	Hand Soldering Processing														M	
	Wave Soldering															M

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