



Operations and Outsourced Manufacturing

SOLUTIONS FOR THE FABLESS INDUSTRY

Complete WIP and inventory management support for semiconductor operations, including yield and cycle time history, consolidated WIP status, complete forward and backward product genealogy, complete lot and product attribute tracking, all fully integrated with planning, customer service, and ERP.

WIP Report		Report Type: Product Production									
Product Family		All Vendors									
All Items		Res Excel									
		FAB		DRB		ASY		TST		TMA	
		WIP	INV	WIP	INV	WIP	INV	WIP	INV	WIP	INV
Chartered	AR0000-P	0	0	0	1700	0	0	0	0	0	0
Chartered	AR0000-W	0	10	0	0	0	0	0	0	0	0
Chartered	AR0000-S	0	0	0	1900	0	0	0	0	0	0
Chartered	AR0000-G	0	10	0	0	0	0	0	0	0	0
AMVICR	AR0000-W	0	0	0	0	0	490	0	0	0	0
AMVICR	AR0000-S	0	0	0	0	0	0	0	0	0	0
	(H) PROD0000E28	0	0	0	0	0	0	0	0	0	0
AMVICR	AR0000-G	0	0	0	0	0	0	0	0	0	0
Totals:		0	20	0	3600	0	490	0	0	0	0

WIP Report – Production Summary
Consolidated Inventory across vendors, production stages, and product families

Yield Analysis		Report Type: Yield by Attribute Set									
Date Range		01/01/2000 - 12/31/2000									
Attribute Set/Rev No	Output Name	Completion Dt	In Qty	Out Qty	Yld Loss	Wrd Loss	Opn Yld	40 Yld	Variance		
AR0000-BGA249	AR0000-BGA249		1400	1390	0	20	99.00%	98.75%	0.25%		
AR0000-P	AR0000-P	03/07/2000	4000	3400	600	0	85.00%	85.00%	-5.00%		
CH00002	PR0000000620	03/07/2000	2000	1400	600	0	80.00%	80.00%	-5.00%		
CH000024	PR0000000619	03/20/2000	2000	1800	200	0	80.00%	80.00%	-10.00%		
AR0000-W	AR0000-W		90	90	0	0	100.00%	100.00%	0.00%		
AR0000-S	AR0000-S		2000	1900	100	0	90.00%	95.00%	-5.00%		
AR0000-G	AR0000-G		40	40	0	0	100.00%	100.00%	0.00%		
AR0000-W	AR0000-W		4185	3688	472	23	88.16%	88.16%	-35.71%		
AS0000			20251	19759	491	101	97.00%	97.00%	-0.00%		
POS			4235	4004	112	119	99.00%	94.55%	4.45%		
MOS-IRT			647	631	11	5	100.00%	97.53%	2.47%		
MEM			4119	3633	378	208	88.00%	88.20%	4.80%		
FB			23088	21131	1876	81	100.00%	91.52%	6.48%		

Yield Analysis by Product Family
Yield analysis by product, product family, part, vendor, lot, and production attribute

Genealogy Report						
Completion Date	Process/Rev	Attrib Set/Rev	Resulting Item No	Responsible Company	Company Location	Input Units / Output Units
07/26/2004	FAB-TSMC/1	R5000/1	R5000	TSMC	TSMC.TW FL	25 / 25
Collected Attribute						
		Attribute Name	Attribute Value			
		Wafer Lot	TS984801			
		Vnd Lot	TS984801			
		Wafer Size	12 inch			
		Mask Set ID	MSK-R5000 ver A			
		Proc Flow ID	PRC FB R5000 ver A			
08/06/2004	SRT-ASE/1	R5000-R/1	R5000-P	ASE	ASE KS	5000 / 4536
Collected Attribute						
		Attribute Name	Attribute Value			
		Vnd Lot	ASP421607.2			
		Date/Trace Code	2004W33			
		BOM ID	BOM R5000 BGA249 ver B			
		M88 ID	ASSY M8 R5000 BGA249 ver C			
		Mark Spec ID	MRK BGA ver E			
		Num of I/O	249			
		Pkg Outline	23 x 23			
		Pkg Type	BGA			
		Proc Flow ID	PRC ASY R5000 BGA ver B			
		Sub-LF ID	BGA249 SUB ver C			
		Environ Type	Lead-Free			
08/19/2004	ASY-ASE/1	R5000-BGA249/1	R5000-BGA249	ASE	ASE KS	2036 / 2013
Collected Attribute						
		Attribute Name	Attribute Value			
		Vnd Lot	ASP421607.2			
		Date/Trace Code	2004W33			
		BOM ID	BOM R5000 BGA249 ver B			
		M88 ID	ASSY M8 R5000 BGA249 ver C			
		Mark Spec ID	MRK BGA ver E			
		Num of I/O	249			
		Pkg Outline	23 x 23			
		Pkg Type	BGA			
		Proc Flow ID	PRC ASY R5000 BGA ver B			
		Sub-LF ID	BGA249 SUB ver C			
		Environ Type	Lead-Free			

Product Genealogy
Lot and unlimited production attribute tracking, forward and backwards traceability

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Streamlines Business Processes

Lot routing, procurement, and inventory valuation are integrated into one transaction flow, eliminating unneeded steps and streamlining the overall outsourced manufacturing process.

Supports Semiconductor Manufacturing

Production models are based on an inverted BOM and many to one production model. Multiple production models, yield and cycle time requirements, binning and multiple package options, as well as downgrades and rework, are all fully supported.

Delivers Full Lot Genealogy

Wafer lot, internal lot, and vendor lot can be tracked for every step in the process. Unlimited production attributes can be tracked and used for detailed analysis. Every part has full genealogy associated with it at all times.

FEATURES OVERVIEW

Operation Cycle Time Management	Ability to track cycle time data by product, vendor, production step, and product variables for detailed sorting and analysis.
Streamlined Processes	Integrated procurement, production, and lot routing business processes, to streamline management of outsourced production.
Operations Yield Management	Ability to track yield data by product, vendor, production step, and product variables, for detailed sorting and analysis.
Vendor Integration	Automated updates from vendors and contract manufacturers to status WIP and inventory, and for real-time analysis of vendor data. Enables improved data quality and supports on-time delivery.
Lot Routing (Split/Merges, Genealogy)	Track wafer lot, vendor lot, and internal lot at every step of the production process. Maintain and track complete lot history, product identification and process genealogy, for forward and backward tracking. Fully supports lot splits and merges.
Semiconductor Production Model	Support for multiple units of measure including input, output, and procurement. Built around the concept of the inverted bill of materials. Support for genealogy, and multiple packaging options.
Multi-Chip Module	Support for multiple die in one package. Includes indented genealogy and consigned material consumption management for tracking substrate lots or other production materials.
Re-work, Re-Screen, Re-Test	Supports test analysis and production enhancement, reclamation and bonus processes, as well as re-test and re-screen production processes. Captures detailed scrap and yield information, quarantine material, and variances.
Fully Auditable	Tracks and saves a complete process history of every vendor and production step, including detailed product and production information by step.
Easy Integration	Full integration with planning and forecasting modules. Flexible integration options for integration success, providing benefits such as a closed loop process for 3-way match of order to approved production completion, to vendor invoice, and production pay-points fully integrated with payables process.

