



Application note 1 for the 2008 IC Cost Model – February 14, 2008 – updated July 14, 2008 to reflect model release 0806.

Using the 2008 IC Cost Model to estimate Foundry Wafer Selling Prices, Manufacturing Costs and Gross Margins

Introduction

A common application of the IC Knowledge – IC Cost Model is to produce estimates of foundry wafer pricing and manufacturing costs. For example, foundry customers often want to understand what kind of margin a foundry is charging them.

Estimating Average Selling Prices

The 2008 IC Cost Model includes company specific gross margins for foundries (note that for IDMs the wafer margin is zero by default). Starting with release 0801 foundry margins will be based on an analysis of available financial data for many of the foundries and adjusted to reflect 90% utilization. Utilization rates have a large impact on manufacturing costs and our experience is that foundries assume some high utilization level when setting prices. We believe that the Total Wafer Cost presented in cell D32 of the '2 Wafer Cost' worksheet in the IC Cost represents an average selling price for foundry wafers when a foundry process is selected and all defaults on the '4 Defaults' page are set to default.

Estimating Manufacturing Costs

In order to accurately estimate manufacturing costs the actual utilization experienced by the foundry must be taken into account. IC Knowledge posts utilization rates for the industry as a whole and for the four largest foundries on our web site here:

http://www.icknowledge.com/our_products/utilization.html

The general industry values are in the top table and the foundry values are in the bottom table. The utilization values can be entered using the dropdown list in cell D22 on the '4 Defaults' page. Please note that TSMC and Chartered over report their utilization and their reported values should be reduced to be consistent with other reported values. We divide TSMC utilization by 1.1 and Chartered utilization by 1.07 before entering them into the model. The manufacturing cost for wafers is displayed in cell D30 on the '2 Wafer Cost' worksheet.