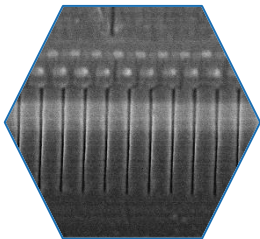
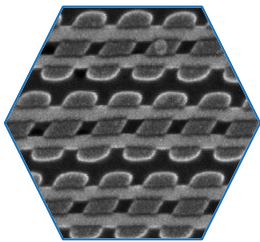
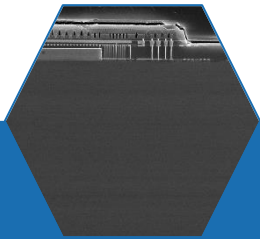




## Nanya Technology 8Gb Standard DRAM

*Reverse costing report on Nanya's highest density 8Gb DDR4 DRAM memory using 20nm process technology.*



COVID-19 had a positive impact on DRAM demand due to intensified network activity and strong PC demand. The heightened DRAM demand increased DRAM revenue to more than US\$17 billion in Q3 2020. Nanya Technology Corporation holds the fourth biggest DRAM market share after Samsung, SK Hynix and Micron, with a significant market share in the PC and automotive markets. DRAM shipments were dominated by 8Gb dies in 2020. Nanya is dedicated to DRAM manufacturing. It also provides the DRAM market with the highest die density of 8Gb.

Nanya's 8Gb DRAM memory transfers data with high speeds of up to 3200Mbps to keep pace with data intensive workloads. The analyzed memory uses 20nm process technology and provides the industry with dies that are cost competitive. With increasing memory cell integration on a single chip, DRAM manufacturers shrink the size of the memory cell and the transistor to manufacture DRAM with higher memory capacity and higher processing speeds. The CMOS transistors used in this DRAM are smaller compared to other DRAM components in the market. This transistor shrinkage allows for faster switching speed and lower power consumption. Memory cell size, design and material could vary from one DRAM manufacturer to another to provide consumers with reliable and fast operating memories. In the future DRAM cell material and

patterning techniques could evolve to continually increase the memory density.

This report examines the DDR4 8Gb memory from the Taiwanese DRAM manufacturer. The report contains an analysis of the DRAM memory package, die and memory cells. It also includes high resolution images of the die cross section and memory cells. The cost analysis comprises of an estimation of wafer and die cost, packaging, and final test cost estimation. A cost breakdown of each manufacturing step is detailed.

Finally, Nanya's 8Gb DRAM memory die size, density and capacitor cells are compared to Samsung and Micron's 8Gb low power DRAM. The report also includes the manufacturing cost comparison.

**Title:** Nanya Technology 8Gb Standard DRAM

**Pages:** 100

**Date:** December 2020

**Format:** PDF & Excel file

**Price:** EUR 3,990

**Reference:** SP20570

### COMPLETE TEARDOWN WITH

- Detailed photos
- Precise measurements
- Material analysis
- Manufacturing process flow
- Supply-chain evaluation
- Manufacturing cost analysis
- Estimated sales price
- Comparison with Micron and Samsung's 8Gb low power DDR4

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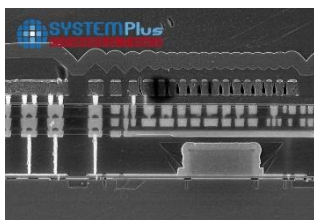


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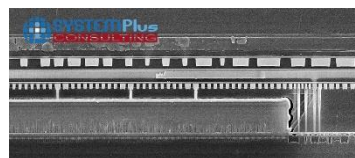
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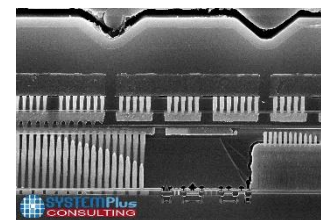
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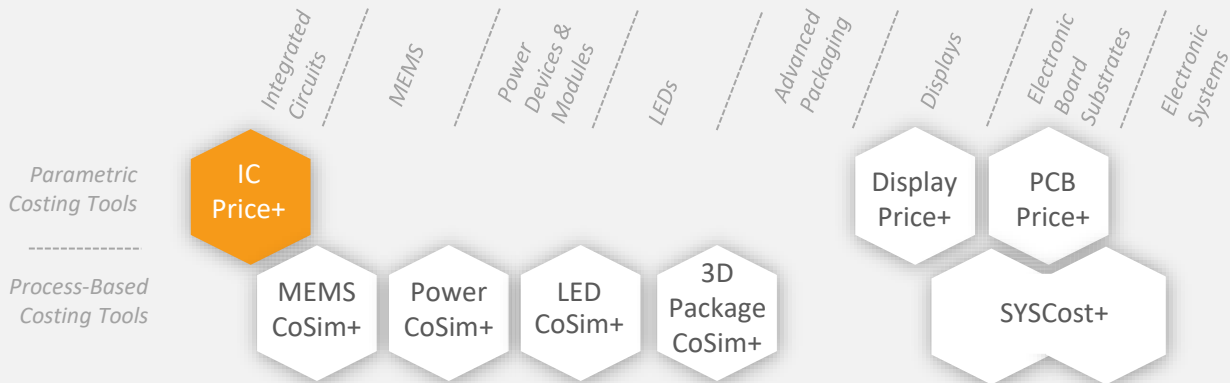


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## COSTING TOOLS



Our analysis is performed with our costing tool IC Price+.

System Plus Consulting offers powerful costing tools to evaluate any process or device, the production cost and selling price, from single chip to complex structures. All these tools are on sale under corporate license.

### IC Price+

The tool performs the necessary cost simulation of any Integrated Circuit: ASICs, microcontrollers, memories, DSP, smartpower...

## ABOUT SYSTEM PLUS CONSULTING

### WHAT IS A REVERSE COSTING®?

Reverse Costing® is the process of disassembling a device (or a system) in order to identify its technology and calculate its manufacturing cost, using in-house models and tools.



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# TERMS AND CONDITIONS OF SALES

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System Plus Consulting may change its prices whenever the company thinks it necessary. However, the company commits itself in invoicing at the prices in force on the date the order is placed.

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The quoted prices already include the rebates and discounts that System Plus Consulting could have granted according to the number of orders placed by the Buyer, or other specific conditions. No discount is granted in case of early payment.

## 4. TERMS OF PAYMENT

System Plus Consulting delivered services are to be paid within 30 days end of month by bank transfer except in the case of a particular written agreement.

If the payment does not reach System Plus Consulting on the deadline, the Buyer has to pay System Plus Consulting a penalty for late payment the amount of which is three times the legal interest rate. The legal interest rate is the current one on the delivery date. This penalty is worked out on the unpaid invoice amount, starting from the invoice deadline. This penalty is sent without previous notice.

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The Buyer is responsible for the use and interpretations he makes of the reports delivered by System Plus Consulting. Consequently, System Plus Consulting responsibility can in no case be called into question for any direct or indirect damage, financial or otherwise, that may result from the use of the results of our analysis or results obtained using one of our costing tools.

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