

World's First DDR2 Memory Module for Sub-Notebooks from Infineon; Selected as Preferred Supplier by Asus

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[Infineon Technologies AG](#) today announced the world's first DDR-Micro-DIMM (Dual In-line Memory Module) Module for Sub-Notebooks. Infineon's Jedec compliant Micro-DIMMs, which are only 65 per cent of the size of equal capacity SO-DIMMs (Small Outline DIMMs) used for [notebooks](#), will further accelerate the manufacturing of lighter and smaller sub-notebooks with enhanced functionalities and battery lifetime. Micro-DIMMs have the smallest area footprint of all memory modules at the same densities, and are an ideal solution for sub-notebooks.

Infineon has already secured its first design wins for the Micro-DIMM products, and was chosen as a preferred supplier by Asus, the world's largest manufacturer of computer motherboards.

Weighing only around 1 kg (kilogram), or 2,2 pounds, which is about one-fourth the weight of conventional notebooks, sub-notebooks combine the advantages of such handheld devices as PDAs with professional mobile computing capabilities. According to market research firm Gartner Dataquest, sub-notebooks are expected to constitute 17 per cent of the notebook market, with 9.4 million units sold per year, by 2007.

To offer sub-notebooks with increased functionalities and feature options, such as DVD drives, the space for standard components such as memory needs to be reduced, driving the need for innovative module design. Until now, DDR2-based notebooks have used SO-DIMMs with 200 pins, a form factor that limits the use of the modules in smaller sub-notebooks. Micro-DIMMs are manufactured using a new 214-pin “mezzanine connector” technique that reduces the size of the module and the area covered by the connector by about 40 per cent compared to currently available SO-DIMMs. While a combination of on-board memory and one Micro-DIMM slot will be sufficient to answer the memory needs of most sub-notebooks, the memory can be further increased by incorporating two module slots. Additionally, the use of low-power DDR2 components will reduce the power consumption of the module by approximately 50 percent, contributing to either extended battery life or allowing battery size reduction in the sub-notebook.

“Expanding our memory products portfolio with DDR2 Micro-DIMMs emphasizes our ‘One-Stop-Shopping Strategy’ for all kinds of memory needs,” said Dr. Carsten Gatzke, Senior Director Marketing of Infineon’s Commodity Memory Products Business Group. “This innovative, industry-leading technology reduces space, increases notebook designers’ flexibility and addresses changing customer requirements in the mobile computing market.”

Technical Information on the Micro-DIMM

Infineon's Jedec (Joint Electronic Device Engineering Council) compliant Micro-DIMM portfolio includes modules with 256MB (megabyte), 512MB and 1GB (gigabyte) densities. The small module PCB (printed circuit board) size is achieved with Infineon's small-size, single-die 512Mb (megabit) and 1Gb (gigabit) DDR2 memory components in compact Fine-Pitch Ball Grid Array (FBGA) packages. The 256MB and 512MB Micro-DIMMs use 4 and 8 single-die 512Mb DDR2 components, respectively. The Jedec compliant 60-ball FBGA packages operate at speeds of 400 Mbps (megabits per second) and 533 Mbps. The 1GB module uses 8 single-die 1Gb DDR2 components, and will complete the DDR2 Micro-DIMM portfolio.

Price and Availability

Samples of the Micro-DIMMs are available now for speeds of PC2-3200 and PC2-4300. The 256MB Micro-DIMMs are available at typical pricing of US-Dollar 80 to US-Dollar 100, 512MB densities are available from US-Dollar 150 to US-Dollar 170, and prices for 1GB Micro-DIMMs are available on request. Volume production of 256MB and 512MB Micro-DIMMs is planned to start in September 2004, and 1GB Micro-DIMMs are expected to be in volume production in 2005.

The original press release can be found [here](#).

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