

The First Samsung LPDDR5 DRAM Chip

Written by Frederick Douglas
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Samsung reveals what it claims is the first 10nm-class 8Gb LPDDR5 DRAM chip-- an addition to the S. Korean company's DRAM lineup aimed for upcoming 5G and AI-powered mobile applications.



"This development of 8Gb LPDDR5 represents a major step forward for low-power mobile memory solutions," Samsung says. "We will continue to expand our next-generation 10nm-class DRAM lineup as we accelerate the move toward greater use of premium memory across the global landscape."

LPDDR5 is currently the most cutting edge memory standard-- so much so the JEDEC standards group is still to finalise the specification. However Samsung appears to have the details, and is showing off a memory chip with data rates of up to 6400Mb/s, 1.5x faster than LPDDR4X DRAM chips found in flagship mobile devices. As a result, the LPDDR5 chip can send 51.2GB of data in a second.

Allowing such a performance boost is a number of architectural enhancements, such as the doubling of memory subdivisions within the cell (from 8 to 16) and a speed-optimised circuit architecture able to verify and ensure the performance. Power saving technologies are also included, since the chip lowers the voltage in according to the operating speed of the corresponding application processor and a "deep sleep" mode cutting power usage to around half of the "idle" mode of LPDDR4X DRAM.

The LPDDR5 chip will be available in two bandwidths, 6400Mb/s with 1.1V operating voltage and 5500Mb/s at 1.05V.

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