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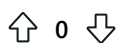
## HBM cost and CPU memory cost comparison

I have heard that GPU HBM cost much more than CPU DRAM, but I'm not sure if it's 10x or else. Failed to find numbers for Nvidia DGX or TPU or other game GPUs. Anyone knows more? Thanks!

Edit: It seems the ratio is twice per this blogpost <https://unifiedguru.com/high-bandwidth-memory-hbm-delivers-impressive-performance-gains/>

1 GB of HBM costs twice as much as 1 GB of DDR5

Very surprising that GPU HBM cost only 2x than CPU memory, why cannot we have very big HBM on GPU then?



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CalmCalmBelong • 6mo ago

Roughly ... HBM is about 5x the price of GDDR which is about 3x the price of standard DDR, at the same density (e.g. 8Gbit).

<https://dramexchange.com/>

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trainableai OP • 6mo ago

Thank you for the pointer! So GDDR5 8GB is 3.538 and DDR4 is 1.450, I don't see HBM price? Btw, why is GDDR6 8GB only 3.088 which is cheaper than GDDR5?



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very little to do with technology. If two of the three major suppliers have transitioned wafer starts to GDDR6, then there's only one supplier left making GDDR5, and ... they can charge what they want.. Samsung is a bit famous for this: making bank on single-sourcing "trailing edge" stuff that SK Hynix and Micron have moved on from.



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However, with the ChatGPT boom and the demand for the Hopper GH100, the price of HBM3 has skyrocketed five times, again compared to GDDR

Do we know the number before ChatGPT boom?



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**ObjectSimilar5829** • 6mo ago

Doesn't HBM cost more to put it in to a chiplet/board?



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**trainableai** OP • 6mo ago

I think so. [u/CalmCalmBelong](#) above pointed out that the price of HBM is about 5x of CPU DRAM.

However, with the ChatGPT boom and the demand for the Hopper GH100, the price of HBM3 has skyrocketed five times, again compared to GDDR



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**CalmCalmBelong** • 6mo ago

To be sure: 5x of graphics DRAM, not CPU DRAM.

And yes, of course, chiplet assembly and test is much more expensive than traditional board-level packaging. I wasn't including that "system" cost, just the \$/Gbit of the chip/chiplet itself.



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