



## DDR2 FAQ

- 1. Where did the DDR2 standard come from?**

Most memory standards, including DDR2, are developed by JEDEC- Joint Electronics Device Engineering Council. Completed standards are published and adopted by companies industry-wide.
- 2. What does DDR2 module look like?**

DDR2 modules look similar to DDR modules. DDR2 module has 240 pins, versus 184 pins on a DDR module. DDR2 unbuffered DIMMs, registered DIMMs, and SODIMMs are the same length as their DDR equivalents, 5,25”.
- 3. Is DDR2 faster than DDR? How much faster?**

Yes, DDR2 will be introduced at speed grades that are already the limit of DDR.  
Initial data rates of DDR2 will be the same as the highest JEDEC standard DDR data rate of 4000 mega transfers per second (MT/s). DDR2 will quickly ramp up to 533 MT/s, 667 MT/s, and beyond.
- 4. Why is DDR2 faster?**

DDR2 incorporates new features at the chip level. These include Off-chip Driver calibration (OCD) and On-Die Termination (ODT). DDR2 also incorporates a larger 4-bit prefetch, additive latency, and enhanced registers. Those features give it better signal integrity, thereby enabling higher clock speeds.
- 5. Can I use DDR2 in my DDR motherboard?**

No. DDR2 memory sockets can only support DDR2 DIMMs and vice versa. DDR2 modules have a different number of pins and have a notch in a different position than DDR.
- 6. Does DDR2 have the same bus width as DDR?**

Yes. Both of them have 64-bit wide data bus.
- 7. Will DDR2 run in dual channel mode?**

Most DDR2 chipsets are expected to support dual channel memory. Giving an effective 128-bit wide data bus. Dual channel systems handle memory processing more efficiently.
- 8. Does DDR2 use less power than DDR?**

Yes. DDR2 uses a 1.8V power supply for core and I/O voltage, compared to 2.5V for DDR and 3.3V for SDR. DDR2 has other power saving features like smaller page sizes and an active power down mode.

**9. Will DDR2 run cooler?**

Yes. Most DDR2 operated at 1.8V, compares to 2.5V for DDR and 3.3V for SDR. This is 28% reduction in supply voltage. Combined with other improvements made in the memory architecture, DDR2 requires less power and may increase battery life in portable devices.

**10. What are the advantages of DDR2?**

**Speed:** Faster data rate is the most significant improvements offered by DDR2. DDR2 starts at 400 MT/s.

**Power:** DDR2 uses lower operating voltage. Most DDR2 operated at 1.8V, compares to 2.5V for DDR and 3.3V for SDR. The less power required, the longer the battery life in portable devices.

**Termination:** On-die Termination (ODT) for both memory and controller improves signaling, and reduces system cost.

**Density:** High-density DDR2 modules are already available up to 4GB. Similar to DDR, mainstream DDR2 modules for desktops will be available in 256MB, 512MB, and 1GB densities.

If you have further questions about DDR2 module, please contact Princeton Technology support team.

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