

# Species Of DRAM

Over the years, memory manufacturers developed several types of DRAM (dynamic RAM) to keep up with the demand for faster computing speed.



28.5MHz

**FPM DRAM (fast page mode DRAM)**—FPM DRAM, which is also called FPM RAM, supports typical data transfer speeds between 80ns and 100ns (nanoseconds; a billionth of a second). FPM DRAM allows the CPU (central processing unit) to retrieve related bits of data from a single column in the array, without making individual requests for each bit.



40MHz

**EDO DRAM (extended data output DRAM)**—EDO DRAM, which is also called EDO RAM, operates approximately 10% faster than FPM DRAM. It's different from DRAM because it "extends the output," allowing the processor to begin the process of retrieving a second bit of data as soon as the first bit has been sent on its way.



66MHz

**BEDO DRAM (burst EDO DRAM)**—BEDO DRAM is a modification of EDO DRAM. Instead of transferring data at a constant rate of speed, BEDO DRAM adds an occasional burst of high-speed data transfer. Think of it like two runners on a track. Both run at a constant speed of six miles per hour, except that the second runner increases his pace to 10 miles per hour on the backstretch of each lap. The second runner will finish ahead of the first runner because of these bursts of speed.



133MHz

**SDRAM (synchronous DRAM)**—SDRAM represents a leap in DRAM technology. This species of DRAM synchronizes itself to the CPU's clock (a mechanism that resides in the CPU and generates a series of electronic pulses, called cycles, that pace the entire system), like a musician pacing himself by a metronome. By falling into the same rhythm as the CPU clock, SDRAM can operate faster and more efficiently.



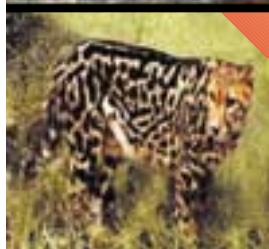
266MHz

**DDR SDRAM (double-data-rate SDRAM)**—DDR SDRAM, which is sometimes referred to as SDRAM II, is a faster version of SDRAM. It's faster because it lets two bits of data per cycle transmit between memory and the CPU.



600MHz

**RDRAM (Rambus DRAM)**—RDRAM takes its name from the company that developed and produces it: Rambus Inc. RDRAM uses a propriety technology that widens the data channels coming into and out of memory. These wider channels are capable of carrying more data than previous DRAM species could carry.



800MHz

**DRDRAM (Direct Rambus DRAM)**—DRDRAM is simply an improved version of RDRAM, with even wider data channels that can carry more data between memory and the CPU.