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Western Digital's "Innovating to Fuel the Next Decade of Big Data" event hosts the presentation microwave-assisted magnetic recording (MAMR)-- a technology the company allows for future HDDs with over 40TB capacity.



MAMR promises "all the gain without the gain" of the other energy-assisted HDD technology, heat-assisted magnetic recording (HAMR). According to WD, MAMR manages such a breakthrough through a "spin torque oscillator," a means to generate a microwave field able to increase the ability to record data at ultra-high density without sacrificing reliability.

As such, WD claims MAMR enables recordings reaching 4 terabits-per-square-inch over time, allowing the creation of HDDs with 40TB capacity and beyond by 2025, before even further expansion beyond that timeline. The company has been working on the technology for over 8 years, and is confident it has a "multiple-year lead" over the competition.

Also shown off at the event are other WD technologies set for use in future HDDs, such as micro actuation advancements and Damascene recording head technology. These will also find use in MAMR HDDs, since they enable drives to handle ultra-high density read and write operations.

The first ultra-high capacity MAMR HDDs should hit the market in 2019.

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