



## NXP and TSMC to Deliver Industry's First Automotive 16 nm FinFET Embedded MRAM

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- *NXP and TSMC jointly develop embedded MRAM IP in TSMC 16 nm FinFET technology*
- *With MRAM, carmakers can more efficiently roll out new features, accelerate over-the-air (OTA) updates and remove production bottlenecks*
- *NXP's next generation of S32 zonal processors and general purpose automotive MCUs are scheduled to be the first product to sample in early 2025*

EINDHOVEN, The Netherlands, May 16, 2023 (GLOBE NEWSWIRE) -- NXP Semiconductors (NASDAQ: NXPI), the world leader in automotive processing, today announced its collaboration with TSMC to deliver the industry's first automotive embedded MRAM (Magnetic Random Access Memory) in 16 nm FinFET technology. As automakers transition to software-defined vehicles (SDVs), they need to support multiple generations of software upgrades on a single hardware platform. Bringing together NXP's high-performance S32 automotive processors with fast and highly reliable next-generation non-volatile memory in 16 nm FinFET technology provides the ideal hardware platform for this transition.

MRAM can update 20MB of code in ~3 seconds compared to flash memories that take about 1 minute, minimizing the downtime associated with software updates and enabling carmakers to eliminate bottlenecks that arise from long module programming times. Moreover, MRAM provides a highly reliable technology for automotive mission profiles by offering up to one million update cycles, a level of endurance 10x greater than flash and other emerging memory technologies.

SDVs enable carmakers to roll out new comfort, safety and convenience features via over-the-air (OTA) updates, extending the life of the vehicle and enhancing its functionality, appeal, and profitability. As software-based features become more widespread in vehicles, the frequency of updates will increase, and MRAM's speed and robustness will become even more important.

TSMC's 16FinFET embedded MRAM technology exceeds the rigorous requirements of automotive applications with its one-million cycle endurance, support for solder reflow, and 20-year data retention at 150°C.

"The innovators at NXP have always been quick to recognize the potential of TSMC's new process technologies, especially for demanding automotive applications," said Dr. Kevin Zhang, Senior Vice President of Business Development at TSMC. "We're excited to see our leading MRAM technology employed in NXP's S32 platform to enable the coming generation of software-defined vehicles."

"NXP's successful collaboration with TSMC spans decades and has consistently delivered high quality embedded memory technology to the automotive market," said Henri Ardevol, Executive Vice President and General Manager of Automotive Processing, NXP. "MRAM is a breakthrough addition to NXP's S32 automotive solution portfolio supporting next-generation vehicle architectures."

### Availability

Test vehicle samples are complete and in evaluation. Initial product samples are scheduled for lead customer availability in early 2025.

### About TSMC

TSMC pioneered the pure-play foundry business model when it was founded in 1987, and has been the world's largest dedicated semiconductor foundry ever since. The Company supports a thriving ecosystem of global customers and partners with the industry's leading process technologies and portfolio of design enablement solutions to unleash innovation for the global semiconductor industry. With global operations spanning Asia, Europe and North America, TSMC serves as a committed corporate citizen around the world.

TSMC deployed 272 distinct process technologies, and manufactured 10,761 products for 499 customers in 2019 by providing broadest range of advanced, specialty and advanced packaging technology services. TSMC is the first foundry to provide automotive grade 16 nm FinFET MRAM production capabilities. The Company is headquartered in Hsinchu, Taiwan.

### About NXP Semiconductors

NXP Semiconductors N.V. (NASDAQ: NXPI) brings together bright minds to create breakthrough technologies that make the connected world better, safer and more secure. As a world leader in secure connectivity solutions for embedded applications, NXP is pushing boundaries in the automotive, industrial & IoT, mobile, and communication infrastructure markets while delivering solutions that advance a more sustainable future. Built on more than 60 years of combined experience and expertise, the company has approximately 34,500 team members in more than 30 countries and posted revenue of \$13.21 billion in 2022. Find out more at [www.nxp.com](http://www.nxp.com).

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A photo accompanying this announcement is available at <https://www.globenewswire.com/NewsRoom/AttachmentNg/f3ec70ea-3f84-4f0b-a135-dc8e68b20347>



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Source: NXP USA, Inc.