

STMicroelectronics designs complex Systems on a Chip (SoC) in advanced technology nodes for market segments such as enterprise, networking, MCU and high reliability automotive. These products are designed with thousands of memory instances with very high-quality standards. The production goals are to accelerate cycle time in the New Product Introduction (NPI) phase and shorten turn-around-time in failure analysis when defective parts with embedded memories are detected. Synopsys STAR Memory System™ is used to test, repair and diagnose embedded memories while Synopsys Yield Explorer performs analytics on memory diagnostic data to help quickly identify and resolve systematic failure mechanisms for the most advanced process nodes. The combined solution is a key enabler for STMicroelectronics to introduce new SoCs to the market with the latest process technologies.

- Thousands of embedded memory instances covering 40 to 80% of the total SoC area
- New and complex fault types associated with advanced process technologies
- ISO26262 certified memory test and repair solution to meet high-reliability test and diagnosis criteria
- Minimal design impact of DFT logic
- Leverage industry-standard interfaces and minimize Automated Test Equipment (ATE) time for testing
- Rapid generation of production-ready test patterns and easy-to-use bitmap flow
- ~~Edge-to-edge~~ **Edge-to-edge** fault isolation to enable process fix and maintain the production ramp-up pace

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