

# EMxxLX xSPI Industrial STT-MRAM

## *The Highest Performing Persistent Memory in the Industry*

### Features

- Expanded SPI bus interface supporting Octal, Quad, Dual and Single SPI protocol
- Up to 200MHz single and double transfer rate (STR/DTR) for Octal SPI
- Unlimited read and write operations
- JEDEC compliant: JESD251, JESD251-1
- Byte level writes and reads with no erase required in persistent memory operating mode
- High Data integrity: No external ECC required.
- SPI backwards compatibility: NVSRAM, FRAM, NOR, Toggle MRAM
- SPI, xSPI Commands for Program/Erase emulated NOR compatible Execute-in-place (XIP)
- Densities available: 4Mb, 8Mb, 16Mb, 32Mb, 64Mb, 128Mb
- 400MBps sustained throughput with OSPI at 200MHz, DTR, for reads and writes
- JEDEC standard, RoHS compliant packages:
  - 24-ball BGA, 6mm x 8mm (5 x 5 array)
  - 8-pin DFN, 6mm x 8mm for 8Mb-128Mb
  - 8-pin DFN, 5mm x 6mm for 4Mb, 8Mb, & 16Mb
- Operating temperature range
  - Commercial: 0°C to +70°C
  - Industrial: -40°C to +85°C
  - Extended Temp -40°C +105°C



## Device Description

The **EMxxLX** is the industry's first xSPI serial interface persistent memory based on Everspin's unique industrial STT MRAM technology. It is a high-performance, multiple I/O, SPI-compatible MRAM device featuring a high-speed, low pin count SPI compatible bus interface with a clock frequency of up to 200 MHz and a single 1.8V power supply. The EM064LX delivers up to 400MBps reads and writes via eight I/O signals with a clock frequency of 200MHz.

A new era of universal memory applications is enabled with the **EMxxLX**, replacing products such as FRAM, SRAM, BBSRAM, NVSRAM and over-provisioned NOR devices. Targets applications are: Industrial IoT, Process Automation and Control, FPGA Configuration, Aero/Avionics, Medical, and Gaming. It is a great choice for the following application usage models:



Scrambling  
Memory



Continuous  
Ring Buffers



Data Logging



Write Buffer



Journaling



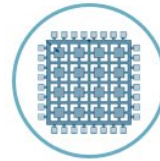
Code Storage &  
Execution (+XIP)



Boot Load  
Configuration



Data RAM



Instant FPGA  
Re-Configurability

For more information please visit [www.everspin.com/xspi-industrial-iot-and-embedded-systems](http://www.everspin.com/xspi-industrial-iot-and-embedded-systems) or contact your local Everspin sales location, [www.everspin.com/sales](http://www.everspin.com/sales).

