NXP Semiconductors
Engineering Bulletin

Document Number: EB851
Rev. 0, 03/2017

MPC57xx Flash Erase-Suspend and Erase-Abort Operations

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This engineering bulletin provides guidance on the use of the flash erase-suspend and erase-abort operations for the MPC57xx family of devices.

2 MPC57xx Flash Erase-Suspend and Erase-Abort operations

MPC57xx flash memory arrays may experience extended erase times after prolonged use of the erase-suspend or erase-abort operations provided by the flash memory controller. Use of these operations will normally be part of an EEPROM emulation driver and the extended erase time may eventually lead to the need for early EEPROM block retirement. The remaining flash blocks will still be available for EEPROM emulation use.

The erase-suspend/abort operations are used in rare situations, in which an “Immediate” write must halt an erase operation already in progress on one of the other flash blocks. For example, to avoid unacceptable write latencies for critical data during an unplanned power-down, an “Immediate” write operation may be needed to ensure that data is properly recorded prior to final power loss.

Applications that use standard automotive EEPROM emulation at traditional data storage rates will not experience any loss of capability. However, applications that may artificially drive the use of erase-suspend or erase-abort at higher rates should be reviewed to ensure no long-term reduction in EEPROM write/erase endurance can occur. Please consult your local NXP technical support engineers for assistance. Please also consult NXP application note, AN4868 “EEPROM Emulation with Qorivva MPC55x, MPC56xx, and MPC57xx Microcontrollers” for details on recommended EEPROM emulation best practices.

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