

MCx EEPROM Write Procedure Recommendations

EEPROM Write Procedure - Recommendations

- EEPROM write should be issued only when motor is in idle state (not spinning). VM should be $\geq 6V$ throughout the EEPROM write process to ensure that all power rails (AVDD, FB_BK and DVDD) stay within datasheet specs and EEPROM write is never interrupted due to any UVLO condition

Note

MCF8316C-Q1 allows EEPROM write and read operations only when the motor is not spinning.

- TI does not recommend writing to EEPROM during every power-up due to aging/write cycle limitations on number of EEPROM writes (20k write cycles at 85°C as per datasheet). Repetitive register settings change can be done at shadow/RAM locations (and not written to EEPROM); only default configurations need to be written to EEPROM (at first power-up only)
- TI recommends a **minimum wait time of 750ms** after issuing an EEPROM write to ensure the EEPROM write has completed before issuing a motor run command
 - This includes 300ms (typ.) EEPROM write time for all user configured EEPROM registers (as per datasheet)
 18. Write 0x8A500000 into register 0x0000EA to write the shadow register(0x000080-0x0000AE) values into the EEPROM.
 19. Wait for 300ms for the EEPROM write operation to complete
 - Additional 200ms to account for the ISR based polling of the EEPROM write command in the RAM register 0xEA
 - Additional 250ms to accommodate Process, Temperature and Aging variations in the EEPROM write time
- After 750ms, TI recommends reading 0xEA register to ensure it has been reset to 0x0. This confirms that the EEPROM write process has been completed successfully