AN1021
APPLICATION NOTE

Using the M40Z300W SUPERVISOR to Gain x16 NVRAM Functionality from Two 128K x 8 SRAMs

INTRODUCTION

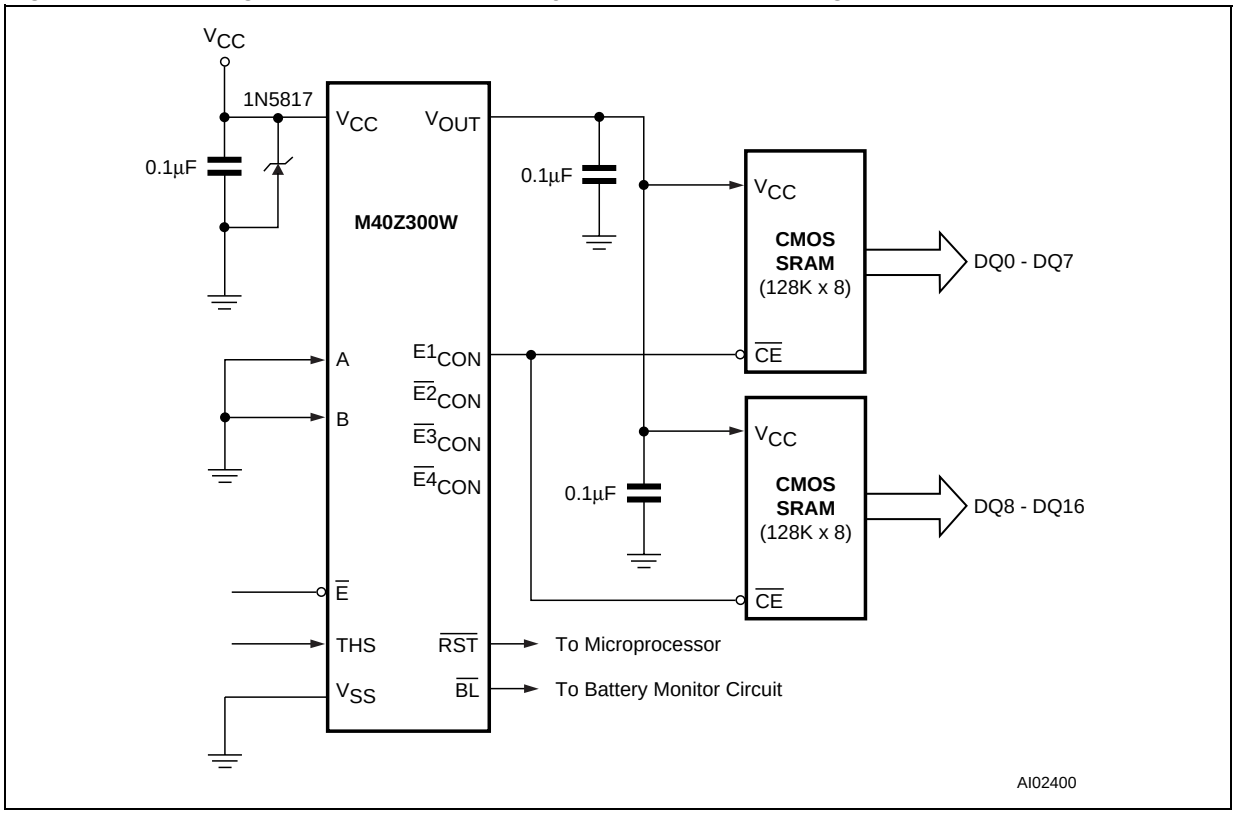
The M40Z300W from STMicroelectronics, Inc., can be used to make SRAM devices behave like non-volatile RAM (NVRAM). When the supply voltage, V_{CC}, falls below the preset threshold level, the device write protects the RAM, switches to its internal battery supply, and asserts the reset line. Figure 1 shows the arrangement for controlling two “128K x 8” devices now arranged as 128K x 16.

As soon as V_{CC} is found to be below the appropriate threshold value, the M40Z300W performs three vital functions:

1. It switches the SRAM devices to being write protected;
2. It switches the SRAM devices to being powered by the battery; and
3. It drives the reset line, $\overline{RST}$, low.

It also drives the $\overline{BL}$ line low if the internal battery voltage becomes less than 2.5 volts. This is monitored during every power-up and every 24-hour interval (while V_{CC} is valid).

Figure 1. Block diagram for 128K x16 battery-backed SRAM Configuration



CONTACT INFORMATION

If you have any questions or suggestions concerning the matters raised in this document, please send them to the following electronic mail addresses:

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Please remember to include your name, company, location, telephone number, and fax number.