Active Errata List

1. **Reading Error**

Errata History

Lot Number	Errata List
All AT68166F lots	1
All AT68166FT lots	1

Errata Description

1. Reading error Description

Some AT68166 parts show a failure during read operation. Failure is always a 0 read fail (read 1 instead of 0). Read 1 is always fine.

Error is located in:

- Bit 5 : less than 5 bits are impacted on last column and last but one line
- Bit 6 : only 1 bit is impacted on last column and last but one line

When Bit6 fails, Bit5 has always already failed.

Other bit planes are never impacted.

The failure does not depend on activity on other addresses over the rest of memory.

Output enable has no influence on reading error behavior.

When a bit is failing, it can be reproduced any time on any tester at the same location, in the same conditions.

In conclusion, there may exist a very narrow window, within which, if the chip select line is asserted low and address lines change, a corruption of data Bit 5 (and Bit 6 sometimes) occurs during a RAM zero read access.

Typical window size is 0.3ns to 1ns.

Failure Conditions

- Addresses are stable at time T0.
- The RAM chip select (CSxn) is driven low in a T0 - 4ns / T0 timing window.

Rad Hard 16 MegaBit SRAM Multi-Chip Module

AT68166F/FT Errata Sheet

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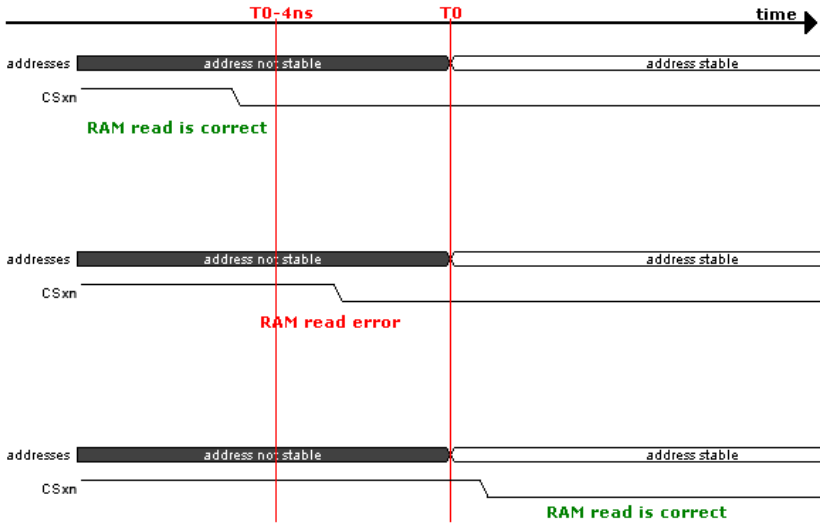
Figure 1. Worst case conditions: 125°C Failure Conditions



Workaround

Datasheet is guaranteed out of the window described in errata-sheet for both AT68166F/FT

1. As the first solution, Atmel strongly recommends the board designer to verify that best, typical and worst case conditions of the application do not lead to fall in the possible error window:
   - chip select activated (driven Low) before T0-4ns
   - chip select activated (driven Low) after T0
2. For boards falling in the not functional window, Atmel recommends to add a delay on CS to be out of the window (no evolution out of the window in guaranteed life-time and radiation exposure). Delay can be done by any solution as serial resistor, serial buffer or other.

3. Atmel envisages giving a better TELQV value than currently specified in the datasheet (1 or 2 ns improvement depending on versions). This improvement will give more margin on CSn to escape from the error window.

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