

Technology Assessment of DRAM and Advanced Memory Products

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Prime: Airbus DS, Sub-Contractors: IDA, Thales			ESA Budget:	326 k€
TRP Contract #4000104887/12/NL/RA			TO's: K. Hernan, R. Dittrich, J. Beister (TEC-EDC)	
TRL	Initial: N/A	Current: N/A	Target TRL: N/A	

Background:

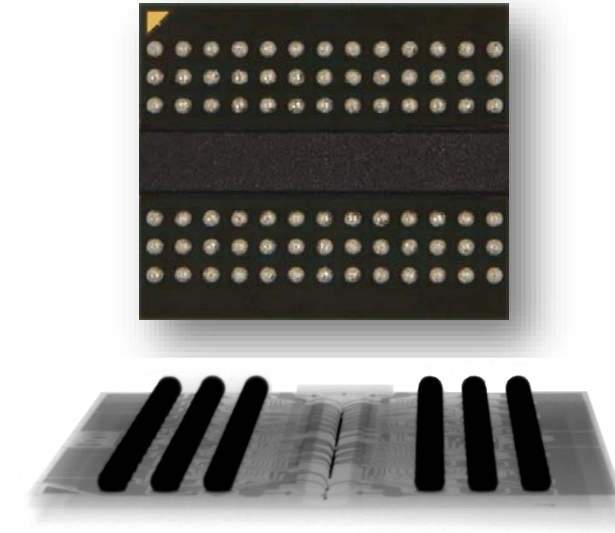
Space system architects continuously demand for larger digital memory systems for satellites. Budget pressures ensure that these new systems must not only be bigger, but they must also be cheaper. The processing power available from today's off-the-shelf embedded technology and boards far exceeds that available only two years ago. Commercial Off-The-Shelf (COTS) modules loaded with leading-edge components are finding their way into orbit.

Objective:

This project aimed at the evaluation of commercially available memories for space applications. Technologies selected for evaluation within this contract were DRAM (volatile) and MRAM (magnetoresistive, non-volatile) type memories.

Achievements:

- DRAM Parts (4Gbit DDR3 from Nanya & Hynix) assessed
- Selected MRAM components: Everspin 1Mbit & 16Mbit
- Tasks regarding MRAM investigation had to be partially descoped due to resource issues at prime contractor ADS.
- The collected data gives an overview on capabilities and issues regarding space usage of 4 memory components from different manufacturers.
- Despite the partial descoping of the MRAM part, the radiation data collected on MRAM memories within this project gives a first baseline for future evaluations regarding this relatively new technology.



Bottom view of commercial DRAM component (above) and tilted x-ray picture of the same component (below)

