Computing

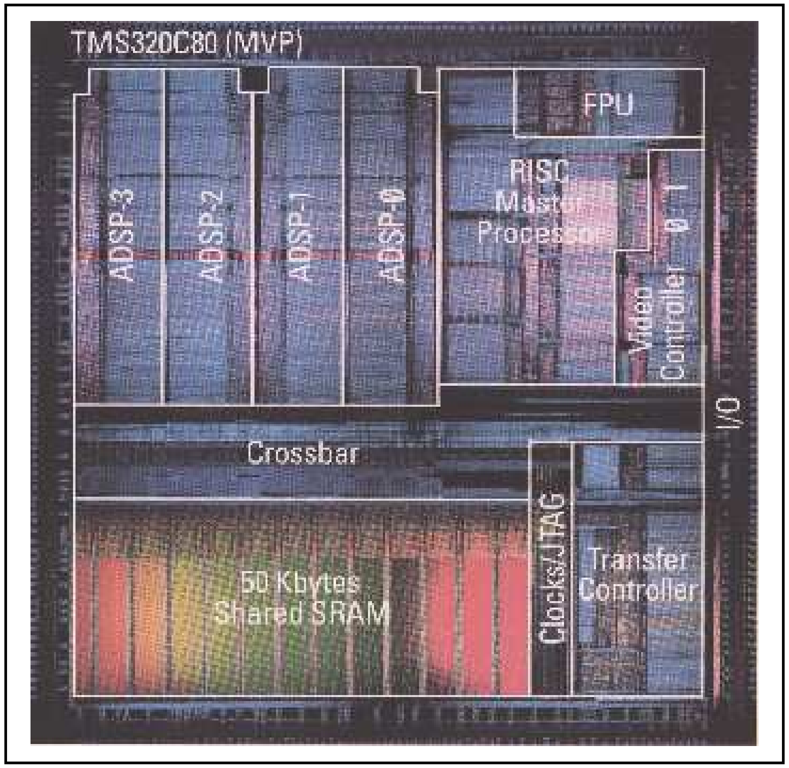
Compression drives needs

Radiation primary concern

DSP needed for compression

Programmatics suggest MCM

- C80 DSP (2 BOPS), can be hardened to 100 krad
- R3000 (Rad Hard)
- 6 x 3U VME cage



4 identical boards: Each with a R3000 central processor, a DSP modules (DSP + VRAM + direct camera interfaces), DRAM and I/O. 5th slot occupied by radar electronics. Sufficient to handle sensor fusion for terrain and position.

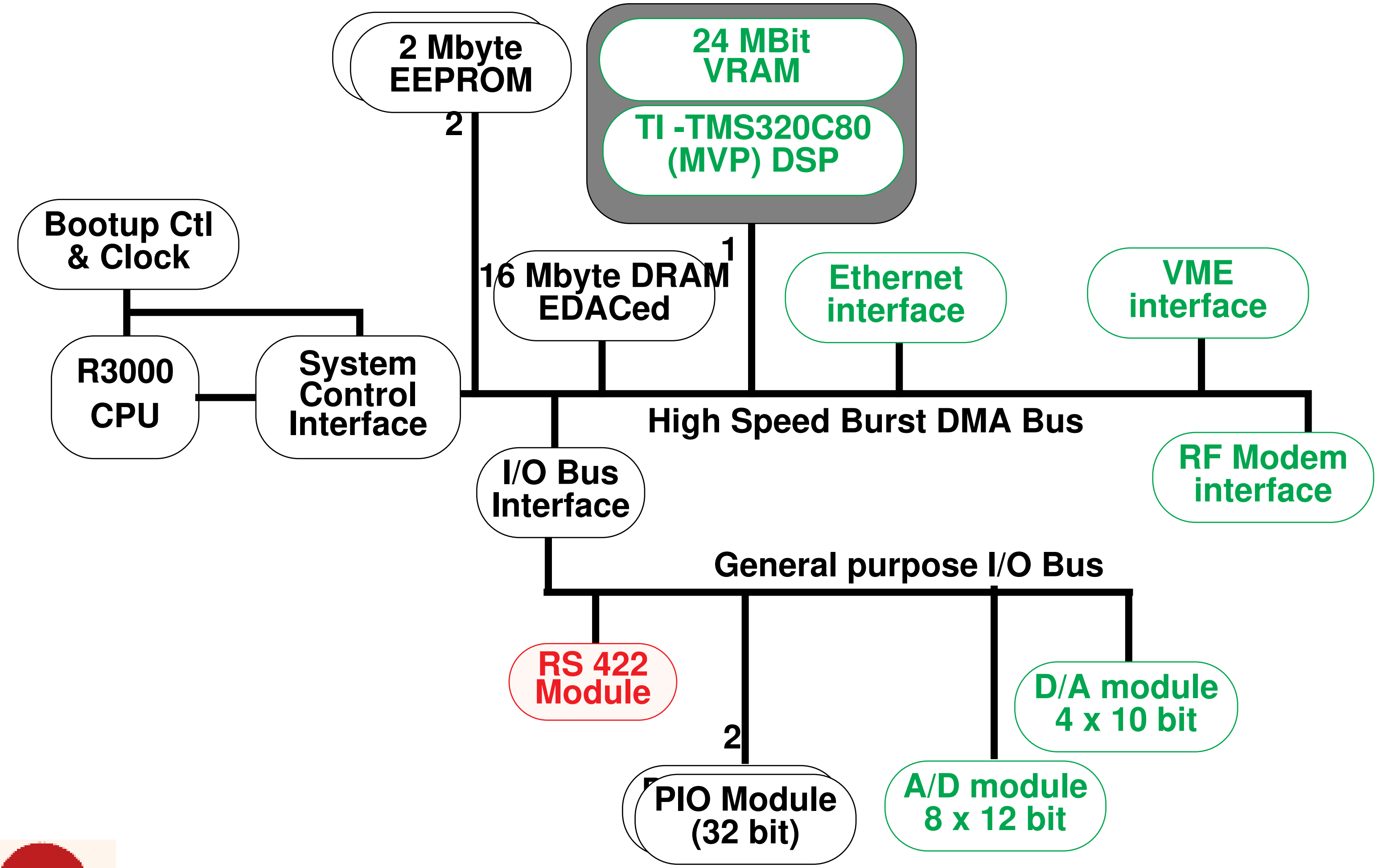
Computing (2)

Component (#)	Cost ($M)	Power (W)	Mass (kg)	Margin used	Model and Vendor
VME cage	.1+.2	16.2	3.5	8%	
MCM (4)	1.4+.3	90	7.3	8%	TI, Anders., DDI, Harris
Cabling to power	.05+.075	-	.5	8%	

Primary issues to be addressed:

- Reducing computing needs w. focus on algorithms
- Designing from MCM block dia. to detail and rule checks
- Complete radiation tolerant/qualified parts list
- Quick PCB prototype for reality check
- Strategic alliance/enterprise to reduce mission cost

Computing Board Design



Computing Board Development