

# Marlboro Hardware Design Block Status

- SQ
  - Star memories & supporting logic implemented
  - Power management defined – control logic to be implemented
  - Hardware support for shader debug & Performance counters yet to be added
  - Main focus has been on debug to support the SP
- SP
  - Area optimizations implemented
  - Working to freeze the block with known precision issue - fixes will have little area and no timing impact
  - Clock gating done
- SX
  - Memory export function has yet to be verified
  - Alpha to mask optimization yet to be implemented
  - Performance counters defined – yet to be implemented
  - Clock gating done

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# Marlboro Hardware Design Block Status

- TP / TC
  - Critical path block with slow progress
  - Added design resources
  - Re-written some sections to reduce area and aid debug
- RB / RC / AB
  - Broken out Blend logic to a new top level block (AB)
  - Area optimizations:
    - reduced precision in AB from 16 to 12 bits
    - changed flop based queues to RAM based – not yet implemented
    - reduced number of CAM units
  - Performance counters have yet to be added
  - Support for 64 & 128 bit endian modes
  - Power management logic is complete



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# Marlboro Hardware Design Block Status

- MC
  - Pad Interface definition is complete and being implemented
  - Performance counters have been implemented
- MH
  - Adding newly defined support
    - 3D Array access through HDP
    - 64 & 128 bit endian modes
  - Performance counters have been added
  - Power management is being added now
- ROM
  - fully validated
- CG/CGM
  - in final validation
- TST / ID / DEBUG
  - implemented and reviewed



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# Marlboro Hardware Design Block Status

Block	Code Freeze Date	Synthesis		
		Area Reduction	Area (mm <sup>2</sup> ) pre-routed	Cycle Time
MC	12/31/02		0.95	2.5 / 1.71
MH	1/2/03		5.71	2.78
RB/RC	1/15/03		RB: 11.13 RC: 0.22	6.2
AB	12/18/02	0.5 sq mm	1.66	2.69
SX	1/3/03		3.05	2.5
SP	12/18/02	0.5 sq mm	11.06	2.5
SQ	1/15/03		4.69	2.5
TP	1/31/03		3.89	2.5
TC	1/31/03	~ 0.9 sq mm	20.02	7.5
Misc	1/31/03		0.30	2.5



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