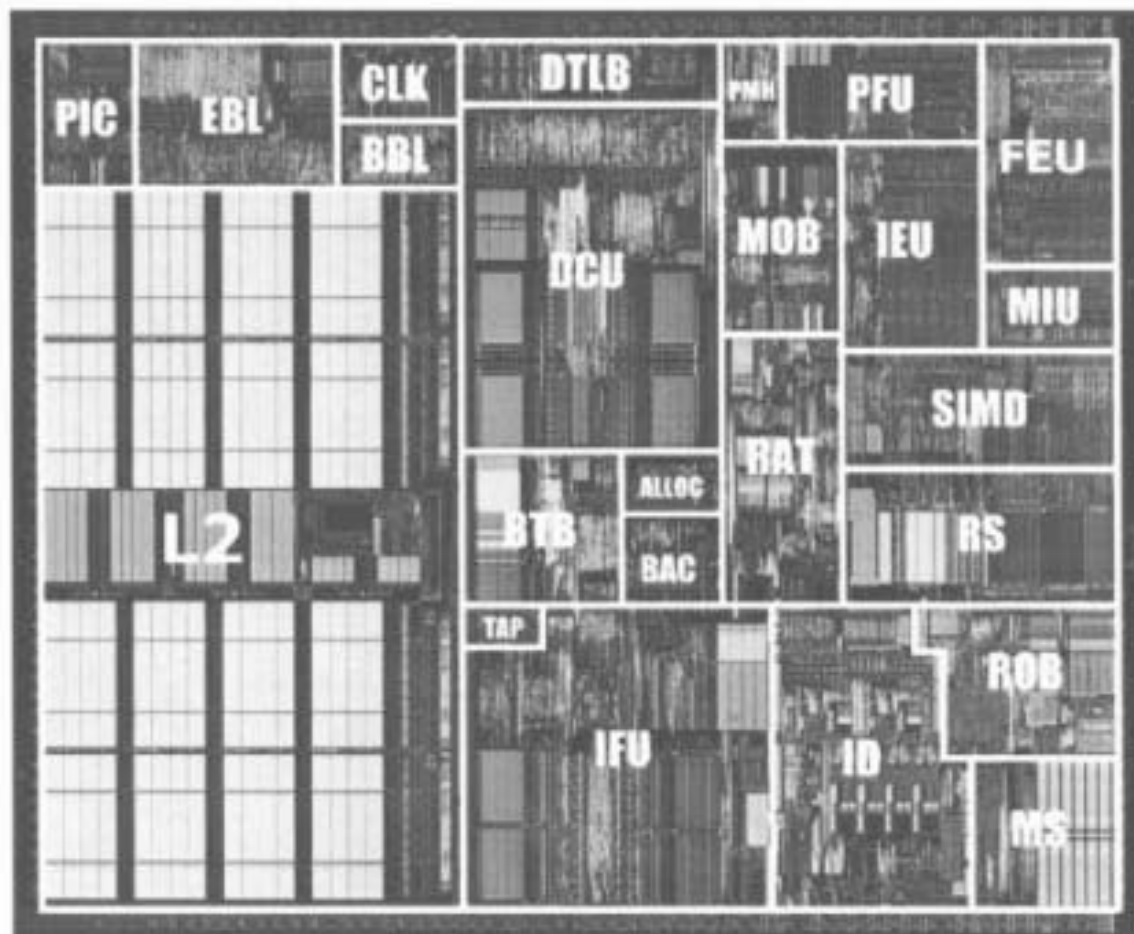


BREAKING THE 1GHZ BARRIER

ISSCC 2000



A GHz IA-32 Architecture Microprocessor Implemented on 0.18 μ m Technology with Aluminum Interconnect ^A & A 1GHz Alpha Microprocessor ^B

THE 1GHZ MILESTONE was reached less than 10 years after clock frequencies had reached 100MHz. The exponential growth in chip frequency and transistor count has continued since then at the same pace. At this rate, the next major milestone (10GHz) is expected within this decade; already 10GHz experimental circuit designs are appearing in ISSCC papers. However, exponential growth cannot continue forever; we can expect new inventions and new computing paradigms to emerge as CMOS technology reaches its ultimate physical limits.

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