# Fully-Parallel Pattern-Matching Engine with Dynamic Adaptability to Hamming or Manhattan Distance

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The proposed pattern-matching engine achieves distance-measure adaptability through pattern encoding and can therefore cover a wide range of high-performance real-time applications. Key to short nearest-match times is a compact fully-parallel associative-memory core. The performance of a $9.75mm^2$ test-circuit in $0.6\mu m$ CMOS technology is about equivalent to a 32bit computer with 1TOPS. The test-circuit suggests possible pattern length $\geq 768$ equivalent bit, $>10^7$ pattern/sec throughput, $<1.13\%$ winner-input-distance error and $<1.35mW$ power dissipation per reference pattern.