
VIA Eden™ Processor



Low Power Fanless Processing

Specifically targeted at a range of business, industrial and commercial applications such as thin clients, silent desktops, IPCs and set top boxes where ultra cool, ultra quiet, reliable performance is essential. The VIA Eden™ processor family boasts an ultra-efficient architecture, world-class 90 nm production and the highly efficient VIA bus interface for unprecedented passively-cooled, “fanless” performance.

The VIA Eden™ ULV processors set new levels in low power consumption, achieving an unprecedented speed for a fanless processor of 1.6 GHz, drawing a maximum of just 8 watts while the the 500 MHz achieves within a remarkable 1 watt of power!

This unbeatable power efficiency and highly effective heat dissipation is combined with leading digital media performance in the ultra compact NanoBGA2 package measuring just 21 mm x 21 mm—opening up new realms for silent yet powerful system design.

Targeted at Key Embedded Markets

- Thin client
- Industrial PCs
- Mini PCs
- Public information/entertainment kiosks
- Point-of-Sales systems
- Intelligent displays
- Edge networking devices
- Hospital monitoring systems
- Municipal control & monitoring systems

Validated with the Following Chipsets

- VIA VX900 chipset
- VIA VX855 chipset
- VIA VX800 chipset
- VIA CX700M chipset
- VIA CN700 and VIA VT8237R Plus chipsets
- VIA CN896 and VIA VT8237S chipsets

| VIA Eden™ Processor Family | Processor Brand | Clock Speed | FSB | TDP Max & Voltage |
|----------------------------------|-----------------|-------------|---------|-------------------|
| | VIA Eden™ ULV | 1.6 GHz | 800 MHz | 8 W @ FlexVID |
| | VIA Eden™ ULV | 1.0 GHz | 400 MHz | 3.5 W @ 796 mV |
| | VIA Eden™ ULV | 500 MHz | 400 MHz | 1 W @ 700 mV |

VIA Eden™ ULV Processor Specifications

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| CPU clock speeds up to 1.6 GHz | Superior performance for mainstream digital media and productivity applications |
| Full x86 Operating System & software application compatibility | Leverages the richest and most cost-effective software development platforms, including Microsoft® Windows®, Linux and OpenBSD |

VIA CoolStream™ Architecture

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| 90 nm process technology | State-of-the-art 90 nm manufacturing process enables VIA Eden™ processor to operate up to 15% faster while using 20% less power |
| World's smallest x86 processor die (30mm²) | Enables a new generation of small form factor x86 platform designs |
| VIA PowerSaver™ Technology | Allows VIA processors to dynamically adjust frequency and voltage based on user requirements |
| Compact VIA NanoBGA2 package (21 mm x 21 mm) | Excellent thermal characteristics and compact package for greater system design innovation |

VIA StepAhead™ Technology Suite

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| VIA Bus supports 400 MHz FSB | High bandwidth connection to system core logic for optimum performance to memory and peripheral devices |
| 16 pipeline stages | Faster processor speed and efficiency |
| VIA TwinTurbo™ Technology | Enables processor to switch from low power mode to full performance extremely quickly for smoother operation |
| Efficiency enhanced 128 KB full-speed exclusive L2 cache with 32-way associativity | Greater memory optimization for enhanced digital media streaming and overall performance |
| Sophisticated branch prediction mechanism | Intuitive processing capability for better system operation |
| MMX, SSE, SSE2 & SSE3 instruction sets | Enhanced 3D and multimedia performance |
| Full-speed FPU | Additional processing power for 3D graphics, multimedia, and streaming functions |
| IO/APIC support | Greatly reduces interrupt latency |

VIA PadLock™ Security Engine

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| AES Encryption | World's fastest x86 security engine for unbreakable encryption of up to 25 Gbps |
| Secure Hash SHA-1 and SHA-256 | Hashes messages using SHA-1 and SHA-256 algorithms at a rate of 20 Gbps for message authentication, providing evidence if message is tampered or altered |
| Montgomery Multiplier | Provides hardware acceleration of encryption and decryption for public key algorithms such as RSA, reducing processor load |
| Two Quantum-based Random Number Generators | Provides an unshakable foundation for security, generating truly random numbers at a rate of 20 million random bits per second |
| NX bit Protection | Prevents worms attaching to programs and executing |