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 Embedded

VIA Eden™ ULV Processor Specifications

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

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 (30mm^2)	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

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

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

* All product specifications are subject to change without notice. Update: February 20, 2012.