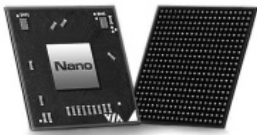


VIA Nano™ Processor



Energy Efficient and Optimized Embedded Computing Experience

The VIA Nano™ is VIA's next-generation processor based on superscalar, speculative out-of-order 64-bit architecture. This architecture and process technology provides a highly compatible, high-performance, and low-power consumption solution for embedded computing. The VIA Nano™ processor platform is an open platform that allows developers to put in as many features as possible with a fast time-to-market.

Leveraging advanced 65 nanometer process technology, the VIA Nano™ processor is an ideal blend of powerful performance and energy efficiency. The processor augments that with aggressive power and thermal management features within the compact 21 mm x 21 mm NanoBGA2 package for an idle power as low as 100 mW (0.1 W). Underscoring VIA's leadership in processor miniaturization, the VIA Nano™ processor comes with ultra compact dimensions, enabling small form factor designs and embedded applications.

The Nano™ is uniquely suited to rigorous computational and media processing demands, and delivers optimized performance for the demanding computing, multimedia and connectivity applications, such as Blu-ray Disc™ and HD video playback.

The VIA Nano™ processor family offers as much as four times the performance of VIA's C7® processor, while maintaining the same power range — extending VIA's performance per watt leadership. Pin compatibility with VIA C7® processors will ensure a smooth transition for OEMs and motherboard vendors, and provide an easy upgrade path for current system or board designs.

In addition to complying with RoHS and WEEE directives, the VIA Nano™ processor is the first processor platform to employ halogen-free as well as lead-free packaging technology, and be named "Total Green solution".

Targeted at Key Embedded Markets

- High-end POS
- Industrial PCs
- Industrial automation
- Measuring equipment and test machine
- Digital signage
- Intelligent displays
- Medical PCs
- In-vehicle entertainment
- Municipal control & monitoring systems
- Gaming machine

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 Nano™ (3000 E-Series)	Model	Clock Speed	FSB	TDP Max & voltage
	L3050	1.8 GHz	800 MHz	25 W @ FlexVID
	U3100	1.3+ GHz	800 MHz	9~14 W @ FlexVID
	U3300	1.2 GHz	800 MHz	6.8 W @ FlexVID
	U3500	1.0 GHz	800 MHz	5.0 W @ FlexVID
	U3400	800 MHz	800 MHz	3.5 W @ FlexVID

* The 1.3+ GHz VIA Nano™ can deliver higher frequency and performance (up to 1.6 GHz) with sufficient thermal envelope, peak TDP at 14 W.

VIA Nano™ Processor Specifications

64-bit superscalar speculative out-of-order micro architecture	Supports a full 64-bit instruction set and provides for macro-fusion and micro-fusion functionality, and sophisticated branch prediction for greater processor efficiency and performance
Full x86 Operating System & software application compatibility	Leverages the richest and most cost-effective software development platforms, including Microsoft® Windows®, and Linux OS

High-Performance Computation and Media Processing

VIA V4 FSB from 800MHz up to 1333MHz	High speed VIA V4 FSB connection to system core logic for optimum performance to memory and peripheral devices
Efficient 1MB exclusive L2 cache with 16-way associativity	Smart cache subsystem supports two 64KB L1 caches and 1MB exclusive L2 cache with 16-way associativity — giving a big boost to multimedia performance
Sophisticated branch prediction mechanism	Unique algorithm using eight different predictors in two different pipeline stages for better system operation
MMX, SSE, SSE2, SSE3 & SSSE3 instruction sets	Enhanced 3D and multimedia performance
Two-clock FPU multiply and 128 bit data path	Offers an excellent multimedia experience, providing silky smooth rendering of 3D images
High floating-point execution	Uses a completely new algorithm for floating-point calculations that results in the lowest latency compared to any x86 processor
Exceptionally smooth media play back	Delivers truly optimized performance for demanding multimedia computing including Blu-ray Disc™ and HD video playback, which can have encrypted media streams of up to 40 Mbps
Sophisticated memory access features	Powerful features for improving performance of loads and stores including the ability to merge a smaller store into larger load data

Advanced Power and Thermal Management

65 nm process technology	Advanced 65 nanometer process technology for reducing power consumption and providing robust performance-per-watt
New C6 state	The latest x86 instruction-level power controls utilize low-power circuit techniques
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

Enhanced PadLock™ Security Engine

AES Encryption	World's fastest x86 security engine with encryption speeds up to 25 Gbps
Secure Hash SHA-1 and SHA-256	Hashes messages using SHA-1 and SHA-256 algorithms at a rate of 5 Gbps for message authentication and digital signatures
Dual quantum-based random number generators	Capable of creating highly unpredictable random numbers at sustained rates of 12 million per second
NX bit protection	Prevents worms attaching to programs and executing