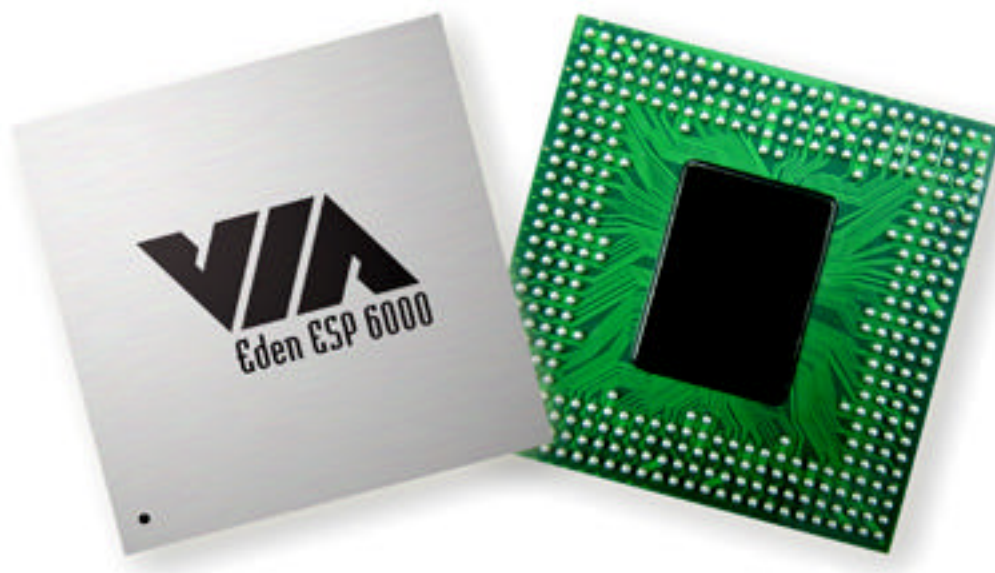


VIA Eden Embedded System Platform



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Introduction

The launch of the new VIA Embedded System Platform marks a major milestone in the implementation of the VIA Total Connectivity Vision. It builds on the momentum generated by existing VIA Total Connectivity initiatives, including the Information PC, the Set Top Box, the Web Pad, the Tablet PC, and the ITX and mini ITX motherboard form factors, by providing the lowest power, highest performance, and most highly integrated embedded x86 platform available from a single vendor.

The new VIA Eden Embedded System Platform will spur the further development of the emerging new generation of quiet running, low profile small factor designs that are being adopted for a myriad of connected information and entertainment systems – ranging from home entertainment devices such as Set Top Boxes, Game Consoles, Personal Video Recorders and Broadband Gateways to commercial applications such as Thin Clients, LCD Web Based Terminals, POS Terminals, and Network Attached Servers.

These new designs not only leverage the fundamental strengths of the x86 platform – namely, its software resources, its Internet compatibility, its rapid product innovation cycles, its massive economies of scale, and its open architecture. They also extend the capabilities of the PC and the Internet by allowing people to connect to information and entertainment in an easier, more convenient, and more affordable way.

Compact, stylish, reliable, fanless, and energy efficient, these new devices are already beginning appearing in homes, workplaces, and public places such as airports and coffee shops. And they are set to further proliferate as more compelling digital multimedia applications and services are developed and delivered over the Internet and home and corporate networks through fixed and wired broadband technologies such as cable modems, ADSL, 802.11a, and satellite.

This new generation of information and entertainment systems is already changing the way that people consume and interact with digital content. It will allow them to view it on a TV or LCD screen, listen to it on their audio systems speakers, store it on a server or Personal Video Recorder so that it can be accessed at a later date, manipulate it on a home media PC, share it with their family over the home network, or send it to their friends and relatives over the Internet.

With its ultra low power, rich levels of integration, advanced multimedia capabilities and communication features, the new VIA Eden Embedded System Platform is an exciting opportunity for System Integrators and OEMs to develop new generation products that meet the desires and aspirations of the 21st century consumer.

VIA Eden Embedded System Platform Overview

The VIA Eden Platform is a low power, high performance, and highly integrated x86 platform that provides the most flexible, compatible, and cost-effective solution for building the emerging new generation of connected digital information & entertainment devices. It combines a proven ultra low power sixth generation processor core with a choice of a highly integrated North Bridge and South Bridge chips, as well as a broad spectrum of expansion options for enhanced communications, connectivity, and multimedia functions.

The key components of the VIA Eden Embedded System Platform include the following:

- Lowest power and highest performance embedded sixth generation x86 processor core featuring:
 - Lowest voltage
 - World's smallest x86 processor die
 - Native x86 execution
 - Integrated 192KB internal L1/L2 cache
 - MMX™ & 3DNow! support
 - Leading edge 0.13 and 0.15 micron processes
- Market-leading x86 North Bridge technology featuring:
 - Advanced memory controller with high-speed PC133 SDRAM support
 - Integrated low power AGP2X/4X graphics with high performance 3D acceleration, and full 2D/video acceleration including motion compensation and up to 32MB Frame Buffer
 - CRT/TFT/DSTN Flat Panel/DVI Panel Monitor Support
- Proven x86 South Bridge technology with highly integrated multimedia, communications, and connectivity features, including:
 - AC 97 audio
 - USB 1.1
 - Super I/O
 - ATA-33/66/100 support
 - 10/100 Mbps Ethernet
 - MC 97 Fax/Modem
- Flexible communications, connectivity, and multimedia Companion technology options, including:
 - Ethernet MAC & PHY
 - TV-Out
 - 1394
 - USB 2.0
 - Audio CODEC

VIA Eden Embedded System Platform Solution Family

The VIA Eden Platform family consists of the VIA Eden VE1000 Series and the VIA Eden VE2000 Series, providing a choice of three ultra low power, high performance processor cores coupled with the highly integrated VIA Apollo PLE133 or VIA ProSavage™ PN133T North Bridge and the VT8231 or VT868B South Bridge, as listed in the table below:

VIA Eden Platform Series	VIA Eden Platform Processor Core	VIA Eden Platform North Bridge	VIA Eden Platform South Bridge
VIA Eden VE1000 Series			
VIA Eden VE1400	ESP4000	PLE133	VT8231/VT686B
VIA Eden VE1500	ESP5000	PLE133	VT8231/VT686B
VIA Eden VE1600	ESP6000	PLE133	VT8231/VT686B
VIA Eden VE2000 Series			
VIA Eden VE2400	ESP4000	PN133T	VT8231/VT686B
VIA Eden VE2500	ESP5000	PN133T	VT8231/VT686B
VIA Eden VE2600	ESP6000	PN133T	VT8231/VT686B

The VIA Eden Platform family also includes multiple Companion chip expansion options for integrating additional communications, connectivity, and multimedia functionality in order to meet the requirements of each particular design application in a most cost effective form. These options are listed in the table below, and represent the richest blend of expansion options from a single vendor.

Application	VIA Eden ESP Companion Chip
Networking	VT6103 (PHY)/ VT6105 (2 in 1)
TV Out	VT1621/VT7002
Audio CODEC	VT1611A/ VT1612A
IEEE 1394	VT6306
USB 2.0	VT6202

The VIA Eden VE1000 Series and VE2000 Series product lines have been developed to meet the specific power consumption, performance, functionality, and cost requirements of their target market segments. All these features in an ultra compact form factor enable a wide range of device designs for the VIA Eden Platform with applications in the leisure, business and education markets.

The table of projected device designs below highlights the applications for which the VIA Eden Platform is the optimal solution, meeting all operational requirements with a highly competitive cost-performance ratio.

VIA Eden Platform Series	Home Digital Information Devices	Commercial Digital Information Devices	Mobile Digital Information Devices
VE1000 Series	Information PC Set Top Box Web Terminal Broadband Gateway Storage	Thin Client Web Terminal POS Terminal NAS Router	
VE2000 Series	Information PC Set Top Box Game Console PVR	Thin Client LCD Web Terminal LCE POS Terminal	Web Pad Tablet PC E-book

VIA Eden Platform VE1000 Series

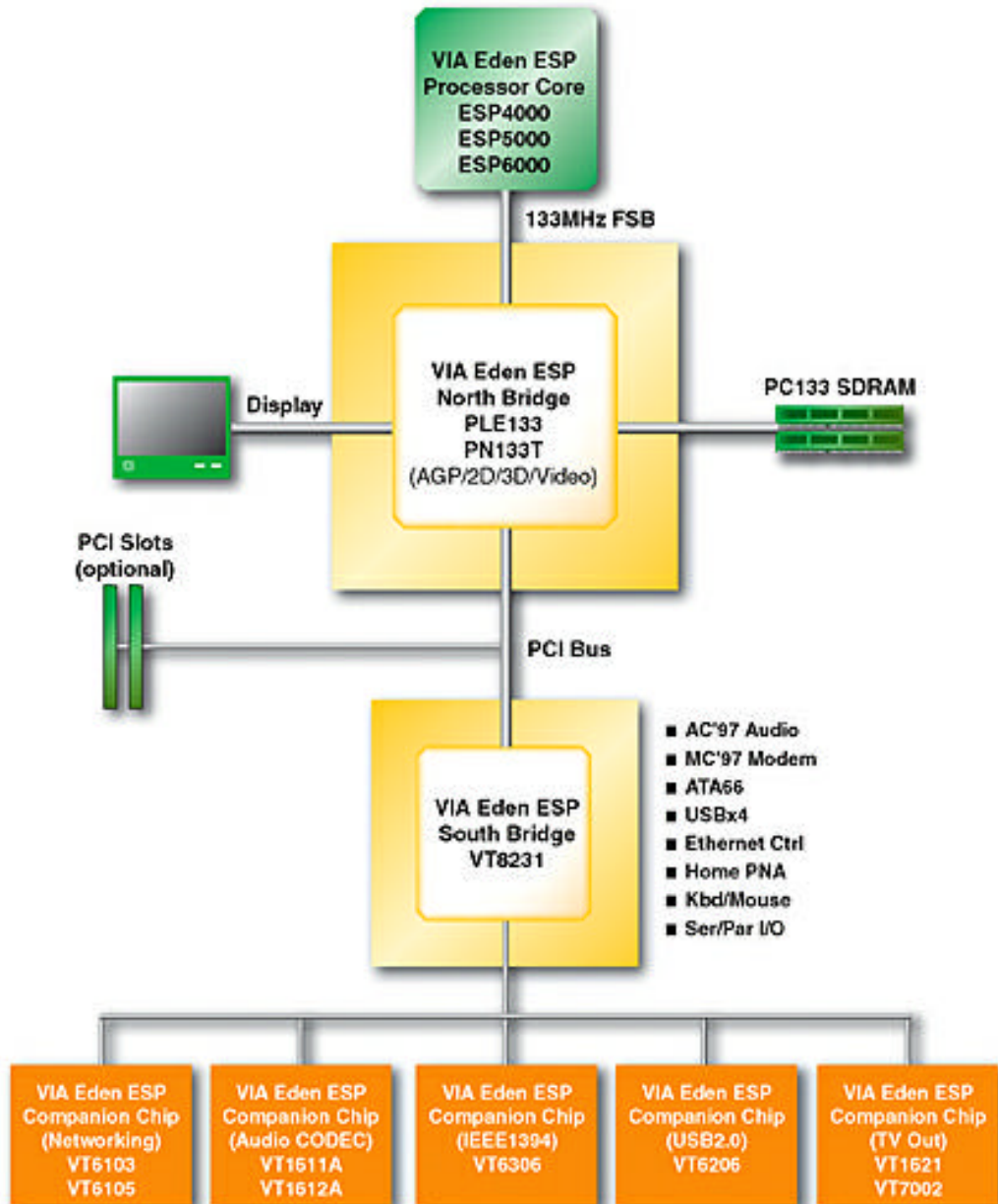
Combining a choice of VIA Eden ESP processor cores with the highly-integrated VIA Apollo PLE133 North Bridge, featuring a high-speed PC133 SDRAM controller and built-in AGP2X graphics with high performance 3D acceleration and full 2D and video acceleration, the VIA Eden ESP VE1000 Series provides a powerful and cost effective platform solution for building a wide range of desktop and set top connected digital information devices for home, commercial, and mobile environments. Ranging from LCD POS Terminals to Thin Clients and Web Terminals, these devices deliver powerful computing and multimedia performance for popular applications including digital music and DVD playback.

VIA Eden Platform VE2000 Series

Combining a choice of VIA Eden ESP processors cores with the highly-integrated VIA ProSavage PN133T North Bridge, featuring a high-speed PC133 SDRAM controller and built-in AGP4X graphics with high performance 2D/3D acceleration and full DVD Motion Compensation, the VIA Eden ESP VE2000 Series provides a powerful and cost effective platform solution for building a wide range of desktop and mobile Connected Digital Information Devices for the commercial and consumer marketplaces. Ranging from Set Top Boxes to PVRs and Web Pads, these devices deliver powerful computing and multimedia performance for a full range of productivity or entertainment applications.

VIA Eden Platform Architecture

The VIA Eden Embedded System Platform is based on the following architecture.



VIA Eden Embedded System Platform Benefits

With its exceptionally low power consumption, robust performance, and highly flexible and feature rich architecture, the VIA Eden Platform provides the most comprehensive solution for building a full spectrum of home, commercial, and mobile Connected Digital Information & Entertainment Devices from a single vendor. It delivers the following major benefits to OEMs and System Integrators:

Feature	Benefits
Lowest power x86 embedded platform	<ul style="list-style-type: none"> • Enables flexible system designs, including low profile, small form factors and silent fanless devices • Saves energy and ensures longer battery life in mobile designs
Highest performance x86 embedded processor	<ul style="list-style-type: none"> • Runs a complete range of productivity, multimedia, and Internet applications, including digital audio, digital video, and digital imaging
Multiple Configuration Options	<ul style="list-style-type: none"> • Enables customized systems with appropriate power, performance, and features for the target market segment
Proven native x86 Architecture	<ul style="list-style-type: none"> • Leverages industry's existing hardware design and manufacturing infrastructure, thereby minimizing product development and production costs and speeding up time to market • Utilizes existing software development tools and ensures complete compatibility with full range of software and Internet applications and plug-ins
Rich Levels of Integration	<ul style="list-style-type: none"> • Maximizes system reliability and longevity • Lowers costs by reducing number of discrete components • Enables lower profile designs and smaller form factors

VIA Eden Platform Power Consumption

Built using the industry’s most advanced 0.13 and 0.15 micron manufacturing processes, the VIA Eden ESP processor core provides the industry’s lowest power and highest performance pure x86 embedded processing engine. Based on the industry standard x86 architecture, the VIA Eden Embedded System Platform is fully compatible with Microsoft® Windows® XP and a full range of Embedded Windows, Windows CE, and the latest Linux operating systems and applications. Compatibility is further enhanced with its support for all the most popular Internet programs and plug-ins.

Lowest Power Pure x86 Embedded Processor Core

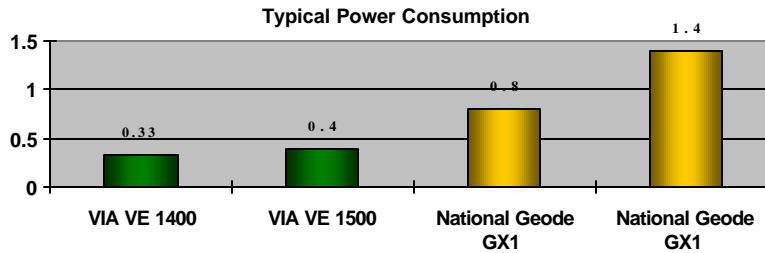
With the world’s smallest x86 processor die size and a highly efficient design, the VIA Eden ESP processor core delivers industry-leading thermal characteristics that not only minimize power consumption but also make it ideal for fanless designs as well as smaller, lower profile form factors.

As shown in the table below, with an operating voltage ranging from only 1.05 to 1.2 volts, the thermal design power requirements of the VIA Eden ESP processor core are as low as three watts – up to half that of competing products.

	VIA Eden VE1400	NS GX2	Transmeta TM5800	Intel ULP + MX440
Voltage	1.05/1.2/1.2V	1.2V	1.3V	1.1V
Thermal Design Power	3/5/5 Watts	N/A	6.0W	5.73W

VIA Eden Platform Processor Core Power Consumption

The typical power consumption of the VIA Eden ESP processor core is also extremely low, leading to significant savings in energy costs and longer battery life in mobile devices. As illustrated in the chart below, the power consumption of the National Geode GX1 is over four times higher than that of the VIA Eden VE1400 - despite the fact that the Geode runs at a lower clock speed.



**Typical power defined as the average power consumption while browsing the Internet or performing data entry.*

***VIA Eden VE1400/VE1500 Platform: On Chip 2D/3D AGP VGA, 8MB Shared Memory, 1024x768x16 bit resolution; 128MB PC133 SDRAM; 13.5GB; UDMA66 HDD; Windows 98 SE.*

****NS Geode GX1 Cyrix Media GX MMX-S 233MHz 64MB*1 PC-133 SDRAM CS5530A-UCE , Award pos561/pos563 BIOS v1.10 HDD: Quantum 40G AT Fireball + AS Windows 98 SE.*

VIA Eden Platform System Power Consumption

The VIA Eden Platform is designed for optimal heat dissipation and power consumption, enabling quiet-running fanless device designs and savings on energy costs and battery life. The VIA Eden Platform has the lowest power profile of any comparable system platform that includes 3D graphics, as a result of its power efficient components including the VIA Eden ESP processor core and its high level of integration. Integration reduces power consumption by minimizing the transistor count compared to discrete chips. The thermal properties of the VIA Eden Platform enable flexible, small form factors and enhance reliability, especially for "always on" devices.

VIA Eden Platform North Bridge Options

The VIA Eden ESP offers a choice of two highly-integrated North Bridge options with proven reliability, compatibility, and performance.

VIA Apollo PLE133

With rich built-in AGP2X graphics, and an advanced memory controller supporting PC133 SDRAM, the VIA Apollo PLE133 chipset is a highly integrated and cost effective solution designed for the specific needs of the new generation of digital information and entertainment applications.

The 133MHz Front Side Bus ensures ample memory bandwidth for the most demanding productivity and Internet applications, lending considerable flexibility and

scalability to system builders in the development of cost-effective platforms without sacrificing features and performance.

VIA Apollo PN133T

The high performance, feature rich S3 Graphics Savage4™ AGP4X graphics core integrated into the VIA ProSavage PN133T provides strong 2D/3D acceleration and support for DVD playback and LCD panel support, ideally suited for the new trend in home digital video and imaging entertainment appliances.

Designed specifically for the thin, light and ultra small mobile market and for the emerging information station market, the VIA ProSavage PN133T demonstrates low power characteristics, a high level of integration and second generation motion compensation, with the 133MHz Front Side Bus supporting all common software and Internet applications.

VIA Eden Platform South Bridge Options

The VIA Eden Platform offers a choice of two highly-integrated South Bridge options with proven reliability, compatibility, and performance.

VIA VT8231

The VIA VT8231 possesses a comprehensive networking and communication feature set including integrated VIA Ethernet MAC, ATA 33/66/100, support for 4 USB ports, AC'97 audio, MC'97 modem and integrated Super I/O.

VIA VT82C686B

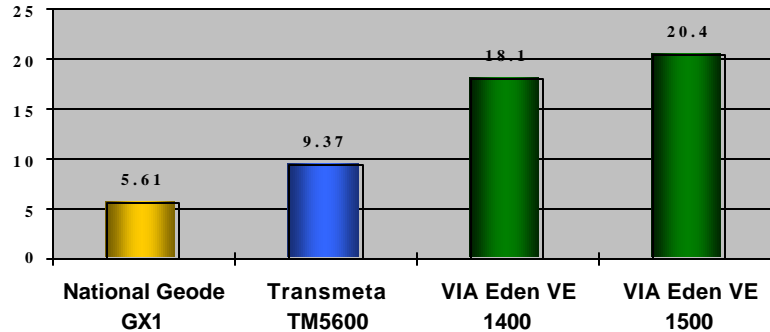
The VIA VT82686B includes ATA 33/66/100, support for 4 USB ports, AC'97 audio, MC'97 modem and integrated Super I/O.

VIA Eden Platform Performance

Featuring a true sixth generation x86 architecture with a native x86 instruction set, the VIA Eden processor core is available in multiple frequency ranges and comes with 192KB full speed integrated L1/L2 cache to provide the highest levels of performance for even the most demanding productivity and Internet applications.

As shown in the table below, the VIA Eden VE1400 scores over three times higher than the National Geode GX1 processor under Winstone 99, and the VIA Eden VE1500 achieves double the score of the Transmeta 5600^{PE1}. Winstone 99 was selected as the benchmark due to the speed limitations of the NS GX1.

Winstone 99 Overall Performance



* VIA Eden 1400/1500 Platform: On Chip 2D/3D AGP VGA, 8MB Shared Memory, 1024x768x16 bit resolution; 128MB PC133 SDRAM; 13.5GB; UDMA66 HDD; Windows 98 SE.

** Transmeta benchmarks tested on Sony Vaio Picture Book

*** NS Geode GX1 Cyrix Media GX MMX-S 233MHz 64MB*1 PC-133 SDRAM CS5530A-UCF ,Award pos561/pos563 BIOS v1.10 HDD: Quantum 40G AT Fireball+AS Windows 98 SE

With the industry's most advanced embedded processor multimedia instructions, including 3DNow!™ and MMX™, the VIA Eden processor core also delivers best of class performance for gaming and digital audio, imaging, and video applications. This makes it an ideal solution for home connected digital information & entertainment devices with advanced multimedia capabilities such as video streaming, audio streaming, and DVD playback.

Conclusion

The VIA Eden Embedded System Platform is the consequence of a design philosophy focused on bringing an x86 quality computing experience to a new range of devices and form factors, ultimately delivering products with the functionality and compatibility that will make them a success. The characteristics of ultra low power consumption and heat dissipation within a proven technology framework elevate the VIA Eden Platform to a different league of performance from existing silicon solutions aimed at the same marketplace, representing a genuine step forward for the industry.