Embedded Processing Platform

Vol. 2009 Issue 1

VIA embedded

Compact

Ultra small form factor and rich integration enabling rapid development of intelligent devices

Efficient

Advanced processor architecture and platform-centric design for higher performance-per-watt

Fanless

Industry-leading low power, fanless, silent and cool processing platforms

Flexible

Comprehensive portfolio of standard and customisable products to suit your embedded requirements

About VIA Embedded

VIA Technologies, Inc. is the foremost fabless supplier of market-leading core logic chipsets, low power x86 processors, advanced connectivity, multimedia, networking and storage silicon, and complete platform solutions that are driving system innovation in the PC and embedded markets. Headquartered in Taipei, Taiwan, VIA's global network links the high tech centers of the US, Europe and Asia, and its customer base includes the world's top OEMs, motherboard vendors and system integrators.

VIA's mission is to provide world class customer value in the embedded market by combining best of breed technologies with extensive development and customer design experience. Offering unparalleled flexibility in bringing your ideas to market, VIA is your best choice as embedded platform provider.

embedded in your success

Embedded Leadership

- Providing Complete x86 Platforms
- Leading the Way in Integration and Miniaturization
- Pioneer of Small Form Factor Embedded Boards
- Industry-leading Low Power Consumption and Rich Feature Integration

Highest Quality Assured

- ISO 9001:2000 Certification
- RoHS Compliance
- IECQ HSPM QC080000 Certified
- Green Computing Initiatives

Customer-Oriented Service

- Global Presence, Integrated Support
- Strong Research & Development Capabilities
- VIA Embedded Partner Zone
- Integrated Design Services and Embedded Software Services
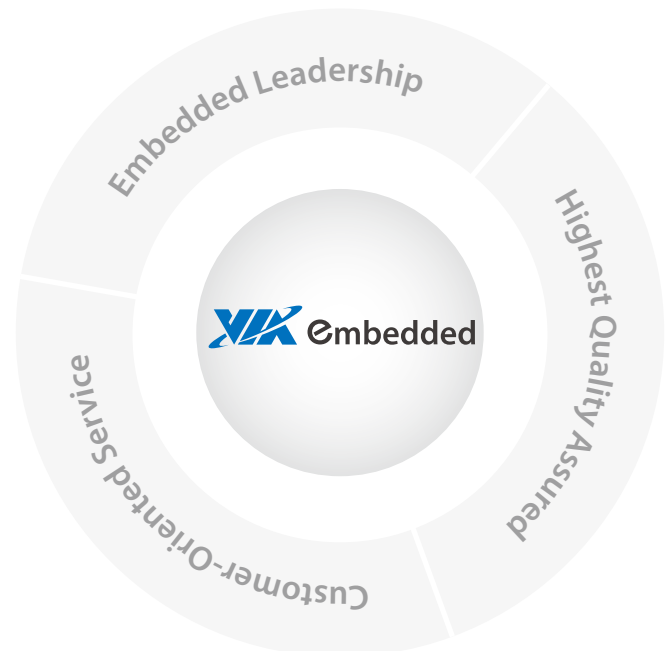
VIA Processor Platform

## VIA Processor Platforms Designed to Inspire Innovation

VIA processors are the world's smallest, lowest power and most secure native x86 processors. With the best performance-per-watt in the business, VIA processors are designed to power innovation in the embedded markets.

Most VIA processors come with a die size of just 30 mm² and utilize advanced 65 nm manufacturing technology. The latest generation of VIA processors deliver significant performance in industry-leading power and thermal profiles, and boast of idle power as low as 100 mW (0.1 W). Even 2.0 GHz processors perform at about 20 watts peak power — resulting in some 40% cooler operation than competing solutions.

Due to their ultra low power consumption and reduced cooling requirements, VIA processors are well suited to a range of x86 based digital entertainment, productivity, networking and embedded applications that require reliable quiet operation from compact designs. The Nano™ is the first 64-bit superscalar processor in VIA's x86 platform portfolio — delivering truly optimized performance and energy efficiency for the most demanding computing. The C7® processor is designed to extend the digital lifestyle by combining robust performance of up to 2.0 GHz with ultra low power consumption and highly efficient heat dissipation. The Eden™ processor family targets fanless embedded computing devices that require ultra low power consumption, rock solid reliability and silent operation. All VIA processors are designed from the ground up to be power efficient and are fully RoHS compliant, lead-free and halogen free — for a greener, cleaner, and quieter computing environment.

VIA Green Technologies

VIA building blocks are designed with the best productivity based upon the proper power solutions to meet global energy efficiency requirements.
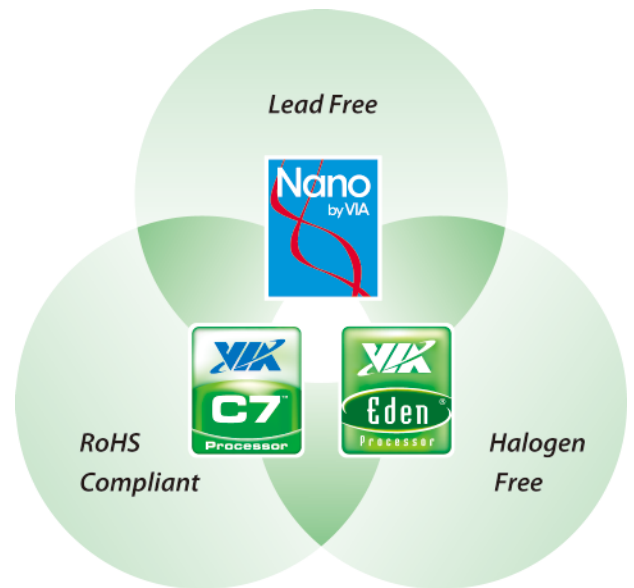
VIA Processor Platform Overview

VIA Embedded Processors at a Glance

VIA Processor Brand	VIA Nano™ Processor	VIA C7® Processor	VIA Eden™ Processor
Key Attributes	The VIA Nano™ processor is a high performance, power efficient processor line-up aimed at revitalizing truly optimized performance for the most demanding computing, entertainment and connectivity applications.	The VIA C7® processor is designed to extend the digital lifestyle by combining robust performance of up to 2.0 GHz with ultra low power consumption and highly efficient heat dissipation.	The VIA Eden™ processor boasts an ultra power-efficient architecture, scalable up to 1.6 GHz within a maximum power envelope of just 8 W. The Eden™ family has ultra low voltage (ULV) SKUs for ultra compact embedded devices.
Requirements	■ Rich performance support ■ Multiple functionality ■ Pin to pin compatibility ■ Small form factor package ■ High Performance/ Watt	■ Pin to pin compatibility ■ Small form factor package ■ Wide range applications	■ Performance/ Watt ■ Low power consumption ■ Pin to pin compatibility ■ Small form factor package
Benefits	■ Flexibility and upgradeability ■ Stable supply ■ Optimized computing for embedded market ■ Supports multimedia rich devices ■ High performance at great value	■ Compatible strategy, easy to upgrade ■ Value proposition ■ Stable supply and life cycle guarantee	■ Fanless and low power design ■ Stable and long product life cycle ■ Flexibility and upgradeability ■ Long life cycle guarantee ■ Thin and light form factor design

Benefits of VIA Processor Platform

Ultra low power consumption platform

- Lowest power x86 platform with full management support
- PowerSaver™ for maximum processor power efficiency

Time and resource saving for product development

- Scalable platform for mid-high-low market segment
- VIA pin-to-pin strategy for dependable upgrade path
- Provides leading concept and ultimate reference design

Small and high integration for small form factor design

- 21 mm x 21 mm NanoBGA2 footprint
- Compatible with VIA single chip system processors with high multimedia integration (H.264, MPEG-2, MPEG-4, WMV9, VC1, etc.)

One-stop-shop for complete product solution

- Total solution for compatible platform and single technical support
- Fulfill different market segments by offering a complete product line solution
- Highly-integrated platforms for building small, stylish, and highly functional devices with rich computing and multimedia performance

Green technologies

- First company to market with RoHS compliant processors in 2003
- Entire silicon portfolio with RoHS compliance by 2005
- Fully lead-free and halogen-free by the end of 2008

Quick Guide

CPU	VIA Nano™ Processor E-Series	VIA C7® Processor	VIA Eden™ Processor	VIA Eden™ ULV Processor
Frequency	1.0 GHz to 1.6 GHz	1.0 GHz to 2.0 GHz	400 MHz to 1.2 GHz	500 MHz / 1.0 GHz / 1.6 GHz
FSB	533 MHz / 800 MHz	400 MHz / 800 MHz	400 MHz	400 MHz / 800 MHz
Vcc	0.700 V to 1.260 V	1.004 V to 1.196 V	0.796 V to 0.860 V	0.700 V to 1.260 V
TDP Max	5 W to 13 W	9 W to 20 W	2.5 W to 7 W	1.0 W / 3.5 W / 8W
Tjunction	0 to 90 ℃	0 to 100 ℃	0 to 100 ℃	0 to 100 ℃
Process Technology	65 nm	90 nm	90 nm	90 nm
Package	NanoBGA2	NanoBGA2	NanoBGA2	NanoBGA2
3D Instruction	MMX, SSE, SSE2, SSE3	MMX, SSE, SSE2, SSE3	MMX, SSE, SSE2, SSE3	MMX, SSE, SSE2, SSE3
Built-in Security Features	RNG, AES, SHA 1/256, NX	RNG, AES, SHA 1/256, NX	RNG, AES, SHA 1/256, NX	RNG, AES, SHA 1/256, NX
Dimension	21 mm x 21 mm	21 mm x 21 mm	21 mm x 21 mm	21 mm x 21 mm
Power Management Technology	PowerSaver™	PowerSaver™	PowerSaver™	PowerSaver™

VIA Embedded F

VIA Processor - Nano™
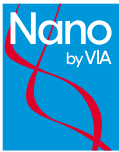
VIA Nano™ Processor

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 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). It comes with ultra compact dimensions, enabling small form factor designs and embedded applications, while pin compatibility with VIA C7® processors will ensure a smooth transition for OEMs and motherboard vendors, providing them with an easy upgrade path for current system or board designs.

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

Features

- 65 nm process technology
- 64-bit superscalar speculative out-of-order MicroArchitecture
- High-performance computation and media processing
- Advanced power and thermal management
- Scalable upgrade to VIA C7® processor
- Greener technology
- Efficient 1MB exclusive L2 cache
- MMX/SSE/SSE2/SSE3
- RNG, AES, SHA1/256, NX

VIA Nano™ E-Series Processor Family

Processor Brand	Clock Speed	FSB	TDP Max & voltage
VIA Nano™	1.6 GHz	800 MHz	13.0 W @ FlexVID
VIA Nano™ ULV	1.3 GHz	800 MHz	8.0 W @ FlexVID
VIA Nano™ ULV	1.2 GHz	800 MHz	6.8 W @ FlexVID
VIA Nano™ ULV	1.0 GHz	533 MHz	5.0 W @ FlexVID

VIA Processors - C7®

C7® Processor
Desktop Performance, Embedded Design

The VIA C7® processor is designed to extend the digital lifestyle by combining robust computing performance of up to 2.0 GHz with low power consumption and highly effective heat dissipation to enable a whole new world of compact, innovative embedded system design. Providing an optimal balance of performance, reliablility and security, the VIA C7® processor family is perfectly suited for a wide range of rapid-growth markets demanding those vectors, appliances that leverage the platform's winning low power, low heat, high performance and high security combination.

The VIA C7® NanoBGA2 package measures just 21 mm x 21 mm, and opens up exciting new possibilities in system design innovation. VIA C7® processor systems offer smooth playback of MPEG-2, MPEG-4 video and MP3 audio, Voice over IP telephony and video conferencing, and much more. Various combinations with the rich selection of VIA companion chips can be created for a wide variety of balanced platforms.

Features

- 90 nm process technology
- 1.0 GHz/1.5 GHz/1.6 GHz @ 400 MHz FSB
- 1.8 GHz/2.0 GHz @ 800 MHz FSB
- VIA PowerSaver™ technology enabled
- VIA Compact NanoBGA2 package
- MMX/SSE/SSE2/SSE3
- 128KB L1/L2 Cache
- RNG, AES, SHA1/256, NX
- Tcase 100° C

VIA C7® Processor Family

Processor Brand	Clock Speed	FSB	TDP Max & voltage
VIA C7®	2.0 GHz	800 MHz	20 W @ 1.196 V
VIA C7®	1.8 GHz	800 MHz	18 W @ 1.196 V
VIA C7®	1.6 GHz	400 MHz	15 W @ 1.084 V
VIA C7®	1.5 GHz	400 MHz	12 W @ 1.004 V
VIA C7®	1.0 GHz	400 MHz	9 W @ 1.004 V

VIA Processor - Eden™

VIA Eden™ Processors
Low Power Fanless Processing

With its signature fanless operation, the VIA Eden™ processor family targets personal, business, industrial and commercial embedded computing devices that require ultra low power consumption, rock solid reliability, and compatibility with standard x86 operating systems and software applications. VIA Eden™ processors are scalable from 400 MHz to 1.6 GHz all within a maximum thermal envelope of 8 watts, and are available with a diverse range of feature sets that enable PC functionality and connectivity from traditionally single function devices.

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, and opens up new realms for silent yet powerful system design.

Features

- 90 nm Process technology
- VIA PowerSaver™ technology enabled
- VIA Compact NanoBGA2 package
- MMX/SSE/SSE2/SSE3
- 128KB L1/L2 Cache
- RNG, AES, SHA1/256, NX

VIA Eden™ Processor Family

Processor Brand	Clock Speed	FSB	TDP Max & Voltage
VIA Eden™ ULV	1.6 GHz	800 MHz	8 W @ 956 mV
VIA Eden™ ULV	1.0 GHz	400 MHz	3.5 W @ 796 mV
VIA Eden™ ULV	500 MHz	400 MHz	1.0 W @ 700 mV
VIA Eden™	1.2 GHz	400 MHz	7 W @ 860 mV
VIA Eden™	1.0 GHz	400 MHz	5 W @ 844 mV
VIA Eden™	800 MHz	400 MHz	5 W @ 844 mV
VIA Eden™	600 MHz	400 MHz	5 W @ 844 mV
VIA Eden™	500 MHz	400 MHz	3.5 W @ 796 mV
VIA Eden™	400 MHz	400 MHz	2.5 W @ 796 mV

VIA Processor - Eden™ ULV

VIA Eden™ ULV 500 MHz Processor
### Delivering Silent Performance with TDP 1 Watt

Setting new levels in power efficiency, the fanless 500 MHz VIA Eden™ ULV processor achieves unprecedented speed for a full x86 processor within a remarkable 1 watt of power; opening up new realms for silent yet powerful system designs. With the ultra compact NanoBGA2 package of just 21 mm x 21 mm, the VIA Eden™ ULV processor enables the x86 platform to be squeezed into smaller chassis than ever before; making the x86 even more accessible to the embedded market.

The VIA Eden™ ULV processor is especially targeted at a range of applications (business, industrial, and commercial) where ultra-cool, ultra-quiet, and highly reliable performance is a must. It is ideally suited for developers looking to build complete systems running at under 10 watts.

Time to market/ low development resource required

Best power efficiency solution

Advanced technology support
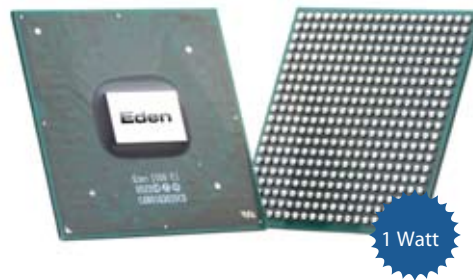
21 mm x 21 mm NanoBGA package enables fanless small form factor

Green computing with RoHS and energy star computer specification 4.0 compliance

Seamless video and audio experience with VIA embedded chipsets

1 Watt

Industrial PCs   Thin Clients   Mobile Thin Clients

VIA Chipset Solutions for Embedded Computing

The VIA single-chip system media processors and other core logic North Bridge/South Bridge chipsets address key requirements of many embedded computing designs including 2D/3D graphics, low power consumption, easy cooling, increased performance, and manageability. When combined with VIA Nano™, C7® and Eden™ processors, these impressive platforms help embedded equipment manufacturers deploy exceptionally responsive, high-performance, and low-power applications such as point-of-sale terminals, gaming devices, digital signage, industrial control/automation, storage devices, and network security.

Ultra Small Form Factor

3.5 W

VX820UT
- DirectX 9
- PCI Express
- 21 mm x 21 mm FCBGA

Small Form Factor

2.3W

VX855
- DirectX 9
- 27 mm x 27 mm FCBGA

4.4~5.5 W

VX800
- DirectX 9
- PCI Express
- 33 mm x 33mm FCBGA

3.5W

CX700M/M2
- 37.5 mm x 37.5 mm FCBGA

North Bridge and South Bridge

4.1W

CN700 + VT8237R Plus
- DirectX 7
- 37.5 mm x 37.5 mm + 27 mm x 27 mm

4.6W

CN896 + VT8237S
- DirectX 9
- PCI Express
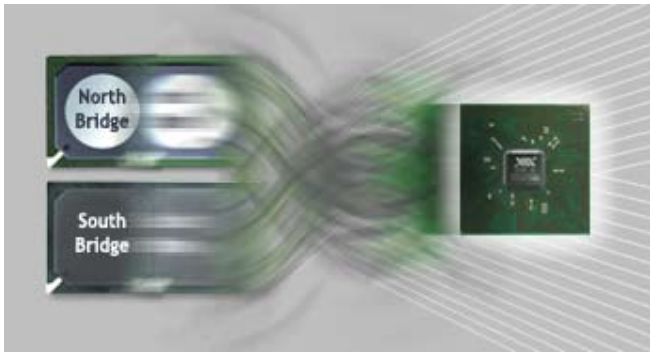- 37.5 mm x 37.5 mm + 27 mm x 27 mm

6.6W

CN896 + VT8251
- DirectX 9
- PCI Express
- 37.5 mm x 37.5 mm + 31 mm x 31 mm

VIA IGP Single Chip Solution

Single chip package size

- VX855: 27 mm x 27 mm FCBGA
- VX800: 33 mm x 33 mm FCBGA
- VX820: 21 mm x 21 mm FCBGA
- CX700M/M2: 37.5 mm x 37.5 mm FCBGA

VIA's Design Philosophy

Ultra compact single-chip solution

- Miniaturization on silicon level
- Enables further miniaturization level on board level

Highly power efficient

- Maximum power envelope 5.5 watts

Rich feature integration

- Leading edge digital media, memory, connectivity technologies integrated

Targeted at key embedded markets

- POS machines
- Industrial PCs
- Ultra compact desktop systems: thin clients, mini PCs
- Digital signage
- Other strategic embedded segments requiring small size & low power draw

VIA Single-Chip Multimedia Feature Comparison

	VX855	VX800	VX820UT	CX700M	CX700M2
MPEG-2 decoding acceleration	O	O	O	O	O
MPEG-4 decoding acceleration	O	O	O	O	O
WMV9 decoding acceleration	O	O	O	O	O
H.264	O	–	–	–	–
DirectX 9.0	O	O	O	–	–
HDTV/SDTV	–	–	–	O	O
Macrovision® support	–	–	–	–	O

VIA Chipset Quick Guide

Single Chip

Chipset	VX855	VX800	VX820UT	CX700M/M2
TDP Max	2.3 W	4.4 ~ 5.5 W	3.5 W	3.5 W
Package	27 mm x 27 mm FCBGA	33 mm x 33 mm FCBGA	21 mm x 21 mm FCBGA	37.5 mm x 37.5 mm FCBGA
DDR	N/A	N/A	N/A	333/400 MHz
DDR2	400/533/667/800 MHz	400/533/667 MHz	400/533/667 MHz	533 MHz
FSB	400/800 MHz	400/533/800 MHz	400/533/800 MHz	400/533/800MHz
Max Memory Size	4 GB	4 GB	4 GB	2 GB
32/64-bit DRAM Data Width	Yes	Yes	Yes	Yes
Integrated Graphics	Chrome9™ HC3	Chrome9™ HC3	Chrome9™ HC3	UniChrome™ Pro II
MPEG-2 Acceleration	IDCT,VLD, MP@HL and Motion Compensation	IDCT,VLD, MP@HL and Motion Compensation	IDCT,VLD, MP@HL and Motion Compensation	IDCT,VLD, MP@HL and Motion Compensation
MPEG-4 Acceleration	ASP Level 5, GMC L0/L1 and 1/4-pixel MC	ASP Level 5, GMC L0/L1 and 1/4-pixel MC	ASP Level 5, GMC L0/L1 and 1/4-pixel MC	ASP Level 5, GMC L0/L1 and 1/4-pixel MC
WMV9 Acceleration	Yes	Yes	Yes	Yes
H.264	Yes	N/A	N/A	N/A
Video Capture Port	Yes	Yes	Yes	Yes
SDTV/HDTV Encoder	N/A	N/A	N/A	Yes
ECC support	N/A	N/A	N/A	Yes
Dual Independent Display Support	Yes	Yes	Yes	Yes
Integrated LVDS / DVI Transmitter	Yes	Yes	Yes	Yes
Graphic Resolution (CRT)	1920 x 1440	1920 x 1440	1920 x 1440	1920 x 1440
PCIe Extension	N/A	Yes. One 4-lane and two 1-lane	Yes. Two 1-lane	N/A
AC' 97	N/A	N/A	N/A	N/A
High Definition Audio	Yes	Yes	Yes	Yes
ATA/100/133	1	1	1	1
SATA	N/A	Yes	N/A	2
SATA (3 Gbps)	N/A	2	N/A	Yes
RAID	N/A	Yes. 0, 1, JBOD	N/A	Yes. 0, 1, JBOD
USB 2.0	6 ports	6 ports	6 ports	6 ports
PCI	32/33	32/33	N/A	32/33
10/100 Ethernet LAN (MAC)	N/A	N/A	N/A	N/A
GPIO	Yes	Yes	Yes	Yes

VIA Chipset Quick Guide

Mainstream North Bridge and South Bridge

Chipset	CN700 + VT8237R Plus	CN896 + VT8237S	CN896 + VT8251
TDP Max	2.3 W for CN700; 1.8 W for VT8237R Plus	3.6 W for CN896 with integrated GFX; 1 W for VT8237S	3.6 W for CN896 with integrated GFX; 3 W for VT8251
Package	37.5 mm x 37.5 mm HSBGA for CN700; 27 mm x 27 mm PBGA for VT8237R Plus	37.5 mm x 37.5 mm HSBGA for CN896; 27 mm x 27 mm PBGA for VT8237S	37.5 mm x 37.5 mm HSBGA for CN896; 31 mm x 31 mm HSBGA for VT8251
DDR	333/400 MHz	333/400 MHz	333/400 MHz
DDR2	533 MHz	533/667 MHz	533/667 MHz
FSB	400/533/800 MHz	400/800 MHz	400/800 MHz
Max Memory Size	2 GB	4 GB	4 GB
32/64-bit DRAM Data Width	N/A	N/A	N/A
Integrated Graphics	UniChrome™ Pro	Chrome9™ HC	Chrome9™ HC
MPEG-2 Acceleration	VLD, IDCT and Motion Compensation	Motion Compensation	Motion Compensation
Dual Independent Display Support	Yes	Yes	Yes
Integrated LVDS / DVI Transmitter	Yes	Yes	Yes
Graphic Resolution (CRT)	1920 x 1440	1920 x 1440	1920 x 1440
AGP Port	Yes	N/A	N/A
PCIe Extension	N/A	Yes, one 16-lane and two 1-lane	Yes, one 16-lane and three 1-lane
AC' 97	Yes	N/A	Yes
High Defnition Audio	N/A	Yes	Yes
ATA/100/133	2	2	2
SATA	2	Yes	Yes
SATA (3 Gbps)	N/A	2	4
RAID	Yes. RAID 0, 1, JBOD	Yes. RAID 0, 1, JBOD	Yes. RAID 0, 1, 0+1, 5, JBOD
USB 2.0	8 ports	8 ports	8 ports
PCI	32/33	32/33	32/33
10/100 Ethernet LAN (MAC)	Yes	Yes	Yes
GPIO	Yes	Yes	Yes

VIA Companion Chips

VIA companion chips consist of an extensive range of accompanying silicon products that, together with x86 VIA processors and chipsets, provide a virtual one-stop-shop for system developers.

VIA Vinyl™ Audio

VIA Vinyl™ Audio represents VIA's acclaimed line of dedicated audio chips, offering the highest level of audio fidelity and best feature sets available on the market. VIA has remained at the forefront of PC audio technology by pioneering 24-bit resolution with 96/192 kHz sampling rates and by providing the first audio solution to enable 8-channel surround sound. For this reason, VIA's chips are the basis for almost all of the major high-end soundcards and audio solutions.

- AC'97 Codec: VT1612A (2-Channel), VT1613 (2-Channel), VT1618 (8-Channel)
- HD Audio Codec: VT1708A / VT1708B / VT1702S / VT1708S
- USB 2.0 Audio Codec: VT1610 / VT1620A
- USB 2.0 Audio Controller: VT1278A / VT1730 / VT1736
- PCI Audio Controller: VT1720/ VT1723 / VT1722 / VT1724 / VT1712

VIA Video Display Products

High quality video is a driving force behind the spreading of multimedia content requiring a whole new range of convergence devices with increasing demands for higher quality, compatibility, and feature support. With this in mind, VIA continues to aggressively develop innovative and feature rich video technologies for a wide range of markets.

- HDTV Encoder: VT1625
- SDTV Encoder: VT1623 / VT1622A
- LVDS Transmitter: VT1634AL (Single-channel) / VT1636 (Dual-channel) / VT1637 (Dual-channel)
- DVI Transmitter: VT1632A

VIA Ethernet Controllers

The VIA Velocity™ series of Gigabit Ethernet controllers and Rhine™ series of 10/100 Mbps Fast Ethernet controllers enable leading-edge performance in a highly integrated package, making them ideal for a diverse range of PC client or server LAN on Motherboard (LOM), and Network Interface Card (NIC) applications.

The VIA Tahoe™ product family comprises single chip Fast Ethernet Physical Layer and transceiver solutions that interface to a Media Access Controller (MAC) ensuring the easy implementation of 10/100 Mbps Fast Ethernet solutions.

- PCI to Gigabit Ethernet: VT6122
- PCI Express to Gigabit Ethernet: VT6130
- PCI to Fast Ethernet: VT6105M / VT6106S / VT6107
- PCI Express to Fast Ethernet: VT6115
- Fast Ethernet PHY to support RJ45: VT6113
- Fast Ethernet PHY to support RJ45 and Fiber: VT6103F

VIA Companion Chips

VIA Vectro™ USB2.0 Controllers

With both industry-leading host and peripheral controllers, VIA USB 2.0 controllers offer high performance, with support for data transfer rates up to 480 Mbps, easy system integration, and low power consumption.

- USB 2.0 PCI 4-port host controller: VT6212L
- USB 2.0 PCI 2-port host controller: VT6210L
- USB 2.0 to SATA (3 Gbps): VT6208S / VT6209

VIA Fire IEEE 1394 Controllers

VIA Fire IEEE 1394 controllers offer complete single chip solutions that provide high-speed seamless plug and play connections to the latest IEEE 1394 (Firewire) enabled PC peripherals and consumer devices such as HDDs, printers, stereos and video cameras.

- PCI to 3-port 1394 controller: VT6306
- PCI to 2-port 1394 controller: VT6308P / VT6308S
- PCI Express to 2-port 1394 controller: VT6315N

VIA also provides multi-functional controllers to combine with IEEE 1394 to achieve the most flexible system design for mainstream desktop and notebook.

- PCI to 1-port 1394 and one card reader combo controller: VT6320
- PCI Express to 1-port 1394 and one card reader combo controller: VT6325
- PCI Express to 2-port 1394 and one PATA combo controller: VT6330

VIA PATA/SATA RAID Controllers

With the SATA interface providing faster data transfer rates than any other IDE interface, VIA offers two SATA RAID Controllers, supporting data transfer rates of up to 1.5 Gbps and flexibility in RAID functionality for maximum storage expansion.

- PCI to one PATA and two SATA: VT6421A
- PCI Express to one PATA: VT6415

VIA Card Reader Controllers

Using the PCI or PCI Express interface, VIA offers card reader controllers that support multiple flash card types, including SD, MMC, MemoryStick, MemoryStick PRO, and xD pictures.
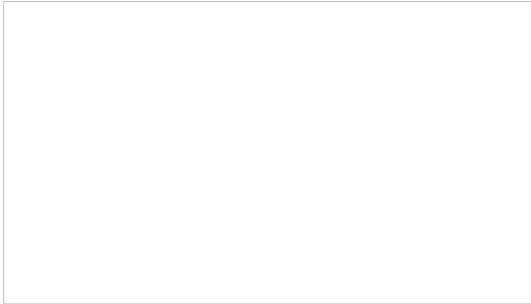
- PCI to one card reader controller: VT6430
- PCI Express to one card reader controller: VT6435

Super I/O

While several interfaces have been replaced in recent years by high speed connections such as USB and IEEE 1394, numerous applications still require legacy I/O. VIA provides dedicated silicon to support users who require these applications.

- VT1211

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