



**P4M266**

**VIA**

**ProSavageDDR P4M266  
Chipset Introduction**



# Intel® Pentium® 4 Processor Corporate Uptake has been Slow

“One reason corporate users should avoid the P4 is that it won't make office applications faster.”

“Another reason to avoid the P4 is that it uses RDRAM.”

“Finally, corporate users shouldn't choose the P4 because it's far too expensive, and it may stay that way.”

**John Taschek**  
**December 4, 2000**



# Intel® Pentium® 4 Platforms For Corporate Desktop – Why Upgrade?

<b>Intel® Pentium® 4 + 850</b>	<b>Advantages</b> <ul style="list-style-type: none"><li>• Significant performance boost over Intel® Pentium® III systems</li></ul>
	<b>Disadvantages</b> <ul style="list-style-type: none"><li>• Corporate market does not trust RDRAM</li><li>• RDRAM 2 to 3 times more expensive than DDR or PC133</li><li>• No integrated graphics</li></ul>
<b>Intel® Pentium® 4 + 845</b>	<b>Advantages</b> <ul style="list-style-type: none"><li>• PC133 SDRAM infrastructure is cost effective and stable</li></ul>
	<b>Disadvantages</b> <ul style="list-style-type: none"><li>• Unbalanced memory subsystem cripples performance</li><li>• No integrated Graphics</li><li>• No option to upgrade to DDR</li><li>• Obsolete by Q1 /02</li></ul>



# The Corporate Desktop Standard

**Intel®  
Pentium® III  
+ 815  
or  
VIA ProSavage  
PM133  
or  
VIA Apollo  
PLE133**

## **Advantages:**

- Stable, reliable platform
- Integrated graphics reduce cost

## **Disadvantages:**

- No performance headroom for software upgrades
- Performance sub-optimal compared with DDR or RDRAM Intel® Pentium® 4 Systems



# So What's Changed?

## DDR For The Pentium® 4



VIA Apollo P4X266 launched bringing DDR Memory Bandwidth to exploit the power of the Intel® Pentium® 4

## No Cost Penalty over PC133

<b>256MB DDR PC2100 DIMM</b>	<b>\$35.99</b>
<b>256MB SDRAM PC133 DIMM</b>	<b>\$34.19</b>
<b>256MB RDRAM PC800 DIMM</b>	<b>\$95.00</b>

Source: Crucial.com and yZtech.com 26/09/01

## Pentium 4 Price Falls to Pentium III level

<b>Intel Pentium 4 1.8GHz</b>	<b>\$256</b>
<b>Intel Pentium III 1.2GHz</b>	<b>\$268</b>

Source: The Inquirer 04/08/01



# The VIA Apollo P4X266 Has Proved That DDR + Pentium 4 is the Right Combination For Every Market Segment

"I have to wonder if VIA even thought they could produce a chipset that has performed as well as what has been seen here. Benchmark after benchmark, we were astounded that VIA has been able to force the Pentium4 to achieve the levels of performance it has using a memory subsystem that it was never intended to utilize."

**[H]ARD|OCP**

"The obvious and most competitive solution to the dual channel RDRAM of Intel's 850 chipset is DDR266/PC2100 DDR SDRAM."



"In the ceaseless debate over DRAM types, these benchmark scores only provide part of the answer. It is abundantly clear that the broader market responds to price first and performance second. Considering the well-known cost advantages of DDR, the benchmark results make it very clear that DDR SDRAM is a balanced and natural choice for the P4 processor. We believe that OEMs and consumers will respond positively to the price and performance profile that the P4X266 offers for the Pentium 4 platform."

**InQuest**  
Market Research

"Intel recognized the P4 as another way to turn the world on to Rambus,"  
"Unfortunately for the company it still hasn't turned out that way."



# P4M266

## The Most Compelling Value Proposition For Corporate Upgrade To The Intel Pentium 4 Platform

- The first integrated Core Logic Chipset for The Intel Pentium 4 Platform significantly reducing total system cost by eliminating external graphics card
- DDR Memory Maximizes Performance of the Pentium 4 Processor at the same price level as PC133 and less than 50% of the cost of RDRAM
- Solid driver set, stability and performance of S3 Graphics ProSavage8™ engine minimizes deployment risk for corporate customers
- VIA Modular Architecture Platform (V-MAP) makes the P4M266 pin to pin compatible with existing VIA Apollo P4X266 motherboard designs reducing Product Development Costs And Speeding Time To Market



# The New Corporate Desktop Standard

## Intel Pentium 4 Processor + VIA ProSavageDDR P4M266



### Performance

- DDR Memory exploits the power of the Intel® Pentium® 4 yielding real performance increases over Intel® Pentium® III + 815 and Intel® Pentium® 4 + 845 systems, even in office applications
- Integrated S3 Graphics ProSavage8™ engine combined with Pentium® 4 & DDR offers 100% increase in 3D performance over Intel® Pentium® III + 815 systems

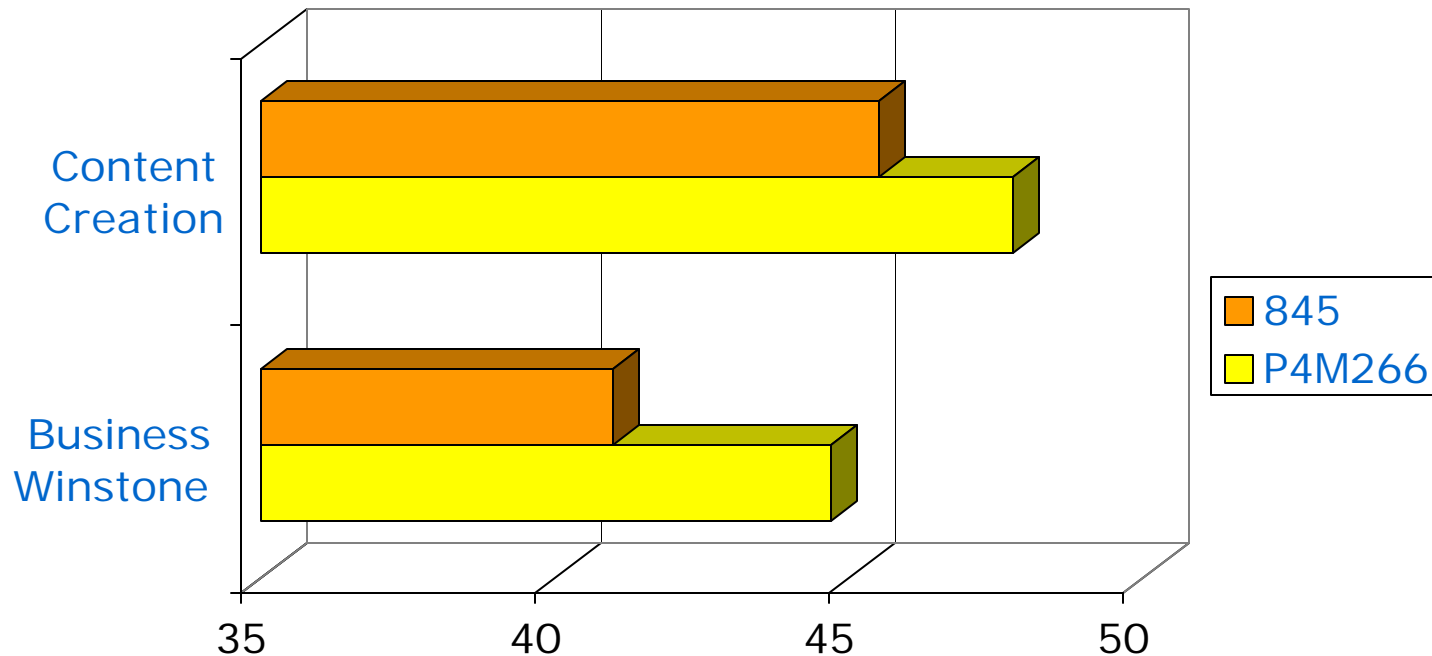
### Value

- Total System Cost comparable with Intel® Pentium® III systems and significantly lower than 845 based systems with discrete graphics
- V-MAP Architecture delivers choice of South Bridges including VT8233C with integrated 3Com® networking technology yielding further cost savings
- Rich S3 Graphics ProSavage8™ performance and solid driver set means risk free deployment for corporate customers

# P4M266: Delivering Value

- The extra \$75\* to pair the Intel 845 with an nVidia GeForce2 MX200 32MB AGP 4X card doesn't deliver value to the corporate buyer
- Even in Content Creation Winstone 2001, testing graphics intensive applications like Adobe® Photoshop® and Macromedia® Dreamweaver®, the VIA ProSavageDDR P4M266 yields better performance

## Winstone 2001 P4M266 vs Intel 845



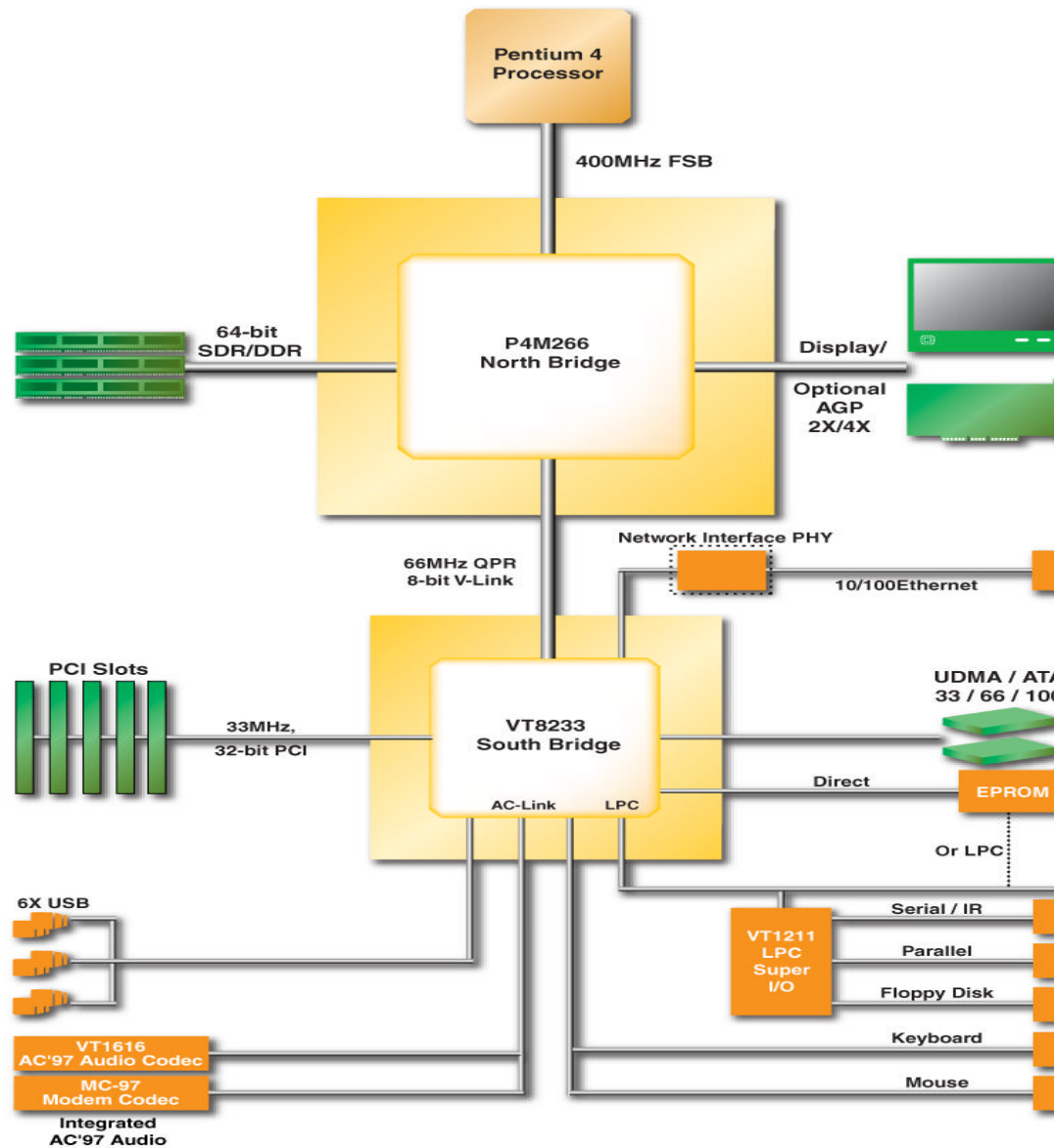
1.5GHz Intel Pentium® 4 processor; i845 MB; 256MB PC133 SDRAM; Asus Geforce2 AGP card; 30GB IBM 307030 ATA 100 HDD; Windows 98 SE

1.5GHz Intel Pentium 4 processor P4M266 Reference Board. 256MB PC2100 DDR SDRAM 30GB IBM 307030 ATA 100 HDD; Windows 98 SE

\*Source: YZTech.com 26/09/01

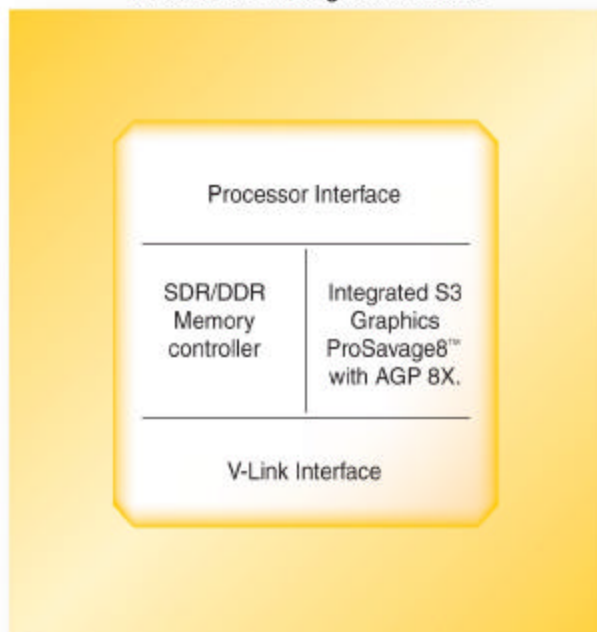


# VIA ProSavageDDR P4M266 Block Diagram



# P4M266 North Bridge Highlights

P4M266 North Bridge Architecture



## Leading Edge Performance Features

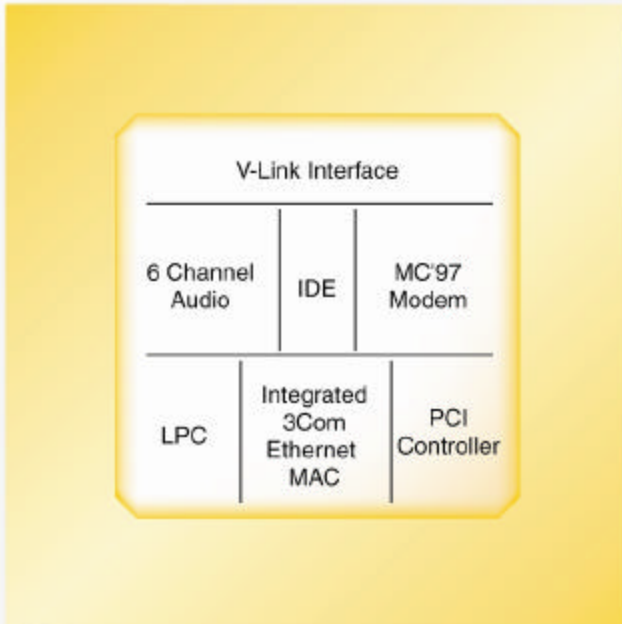
- 400MHz Front Side Bus
- Integrated S3 Graphics ProSavage8™ Graphics Core with internal AGP 8X equivalent bandwidth, 32MB Frame Buffer and DVD Motion Compensation
- Support for up to 4GB High-Speed DDR200/266 SDRAM
  - Peak data transfer rate of 2.1GB/sec
- High Speed V-Link Architecture
  - Peak bandwidth of 266MB/s

## Unmatched Flexibility & Scalability

- Supports full range of 423-pin & 478-pin Intel® Pentium® 4 processors
- Optional External AGP 4X Port for easy upgrade
- Supports up to 4GB DDR200/266 or PC100/133 System Memory
- V-MAP Architecture - Pin-to-Pin compatible with existing VIA Apollo P4X266 Motherboard designs

# VIA VT8233C Integrated South Bridge

VT8233C South Bridge Architecture



## High Performance

- V-Link to North Bridge with 266MB/s bandwidth
- Dual ATA-100/66/33

## Market Leading Networking

- 3Com 10/100Mb Ethernet MAC

## Enhanced Integration

- Support for up to 6 USB ports, USB 1.1 compliant
- Support for up to 5 PCI expansion slots
- Advanced 6-channel Audio and HSP Modem
- LPC to replace ISA bus

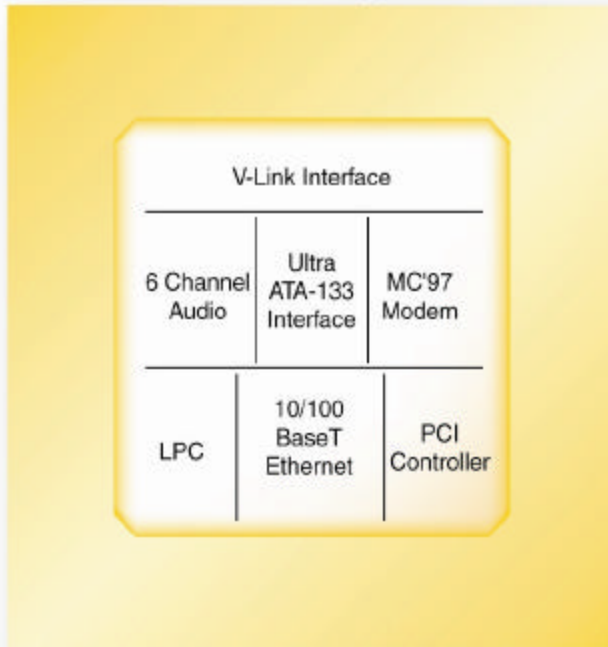
## Advanced Power Management

- ACPI & OnNOW



# VT8233A Integrated South Bridge

VT8233A South Bridge Architecture



## High Performance

- V-Link to North Bridge with 266MB/s bandwidth
- Dual ATA-133/100/66/33 – 33% faster throughput from hard drive to CPU delivering better performance in data intensive business applications like Microsoft® Excel®

## Enhanced Integration

- Support for up to 4 USB ports, USB 1.1 compliant
- Support for up to 5 PCI expansion slots
- Advanced 6-channel Audio and HSP Modem
- LPC to replace ISA bus

## Advanced Power Management

- ACPI & OnNOW

# P4M266 Performance Highlights

## **The Leader in Business Application Performance –**

- In Business Winstone beats the Intel Pentium III + 815 by 5% and the Intel Pentium 4 + 845 by 6%

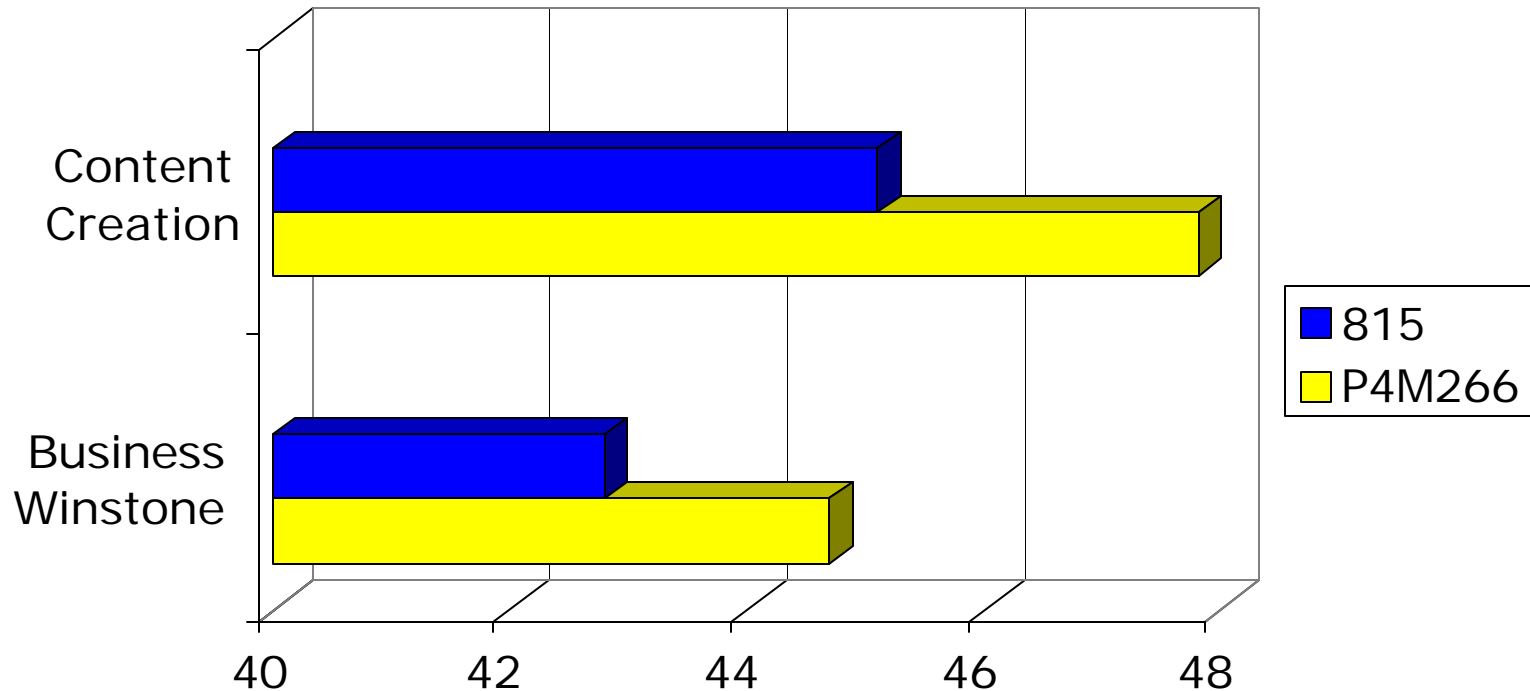
## **The Highest Performance Integrated Graphics for Intel® Platforms**

Shared Memory Architecture (SMA) enables the ProSavage8™ graphics to utilize the system memory for frame buffer and texture memory. The internal data paths are upgraded to 128-bit over previous ProSavage graphics giving effective internal AGP 8X bandwidth with the DDR memory subsystem, offering up to 2.1GB/s transfer rate greatly increasing the overall performance of the integrated graphics core

- 3D Winmark  
114% Better than Intel Pentium III + 815
- Quake III  
77% Better than Intel Pentium III + 815



# Winstone 2001 Performance Comparison

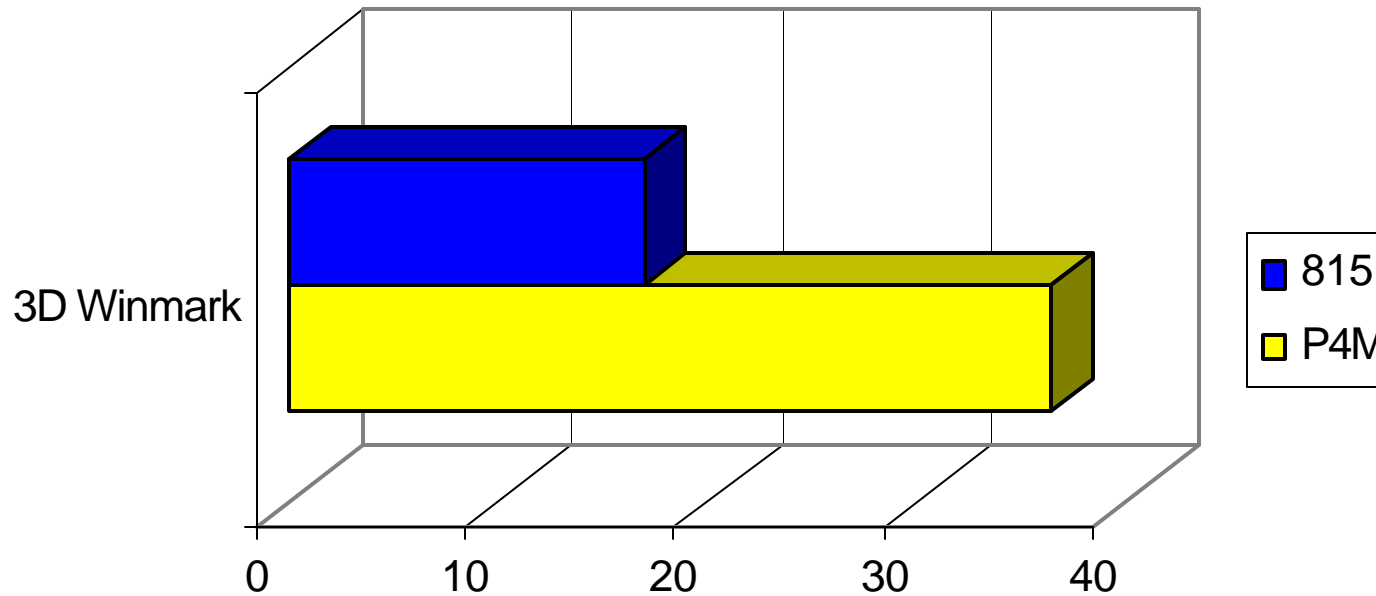


1.5GHz Intel Pentium 4 processor P4M266 Reference Board. 256MB PC2100 DDR SDRAM  
30GB IBM 307030 ATA 100 HDD; Windows 98 SE

1.0GHz Intel Pentium III processor i815 MB 256MB PC133 SDRAM 30GB IBM 307030 ATA 100  
HDD; Windows 98 SE



# 3D Winmark 2000 Performance Test

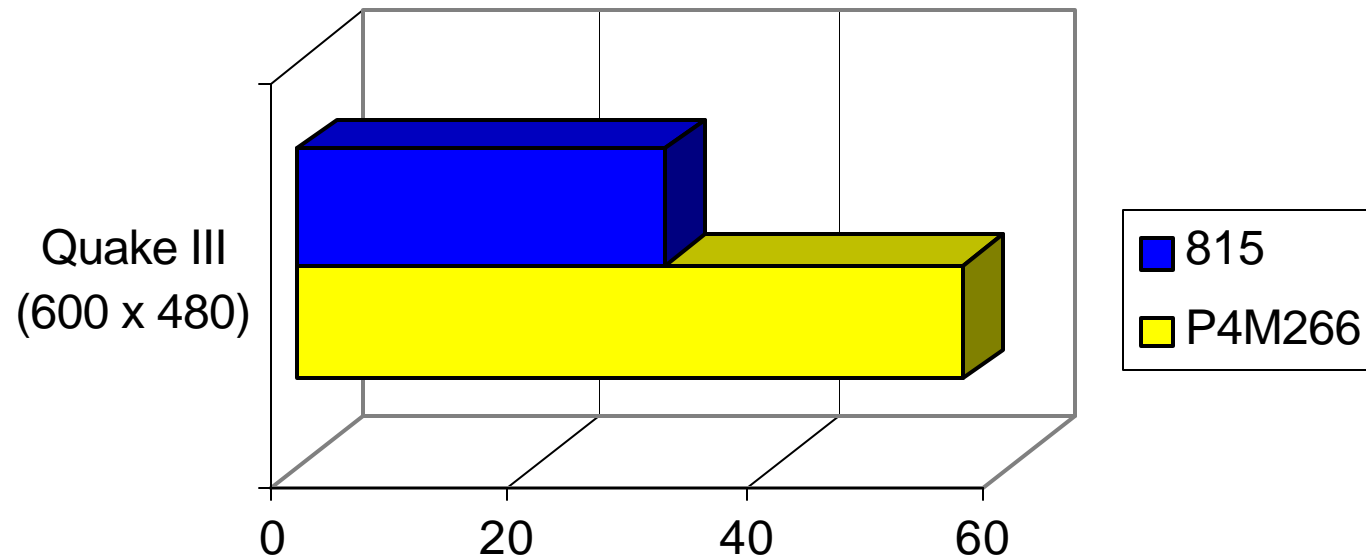


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1.0GHz Intel Pentium III processor i815 MB 256MB PC133 SDRAM 30GB IBM 307030 ATA 100  
HDD; Windows 98 SE



# Quake III

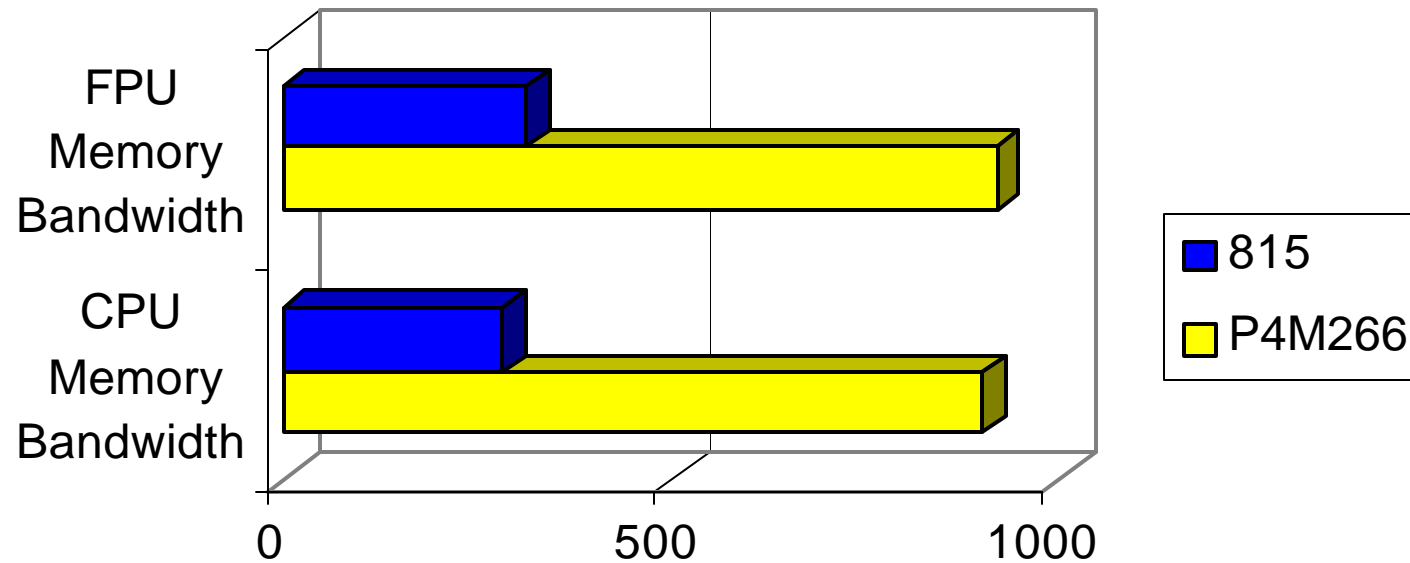


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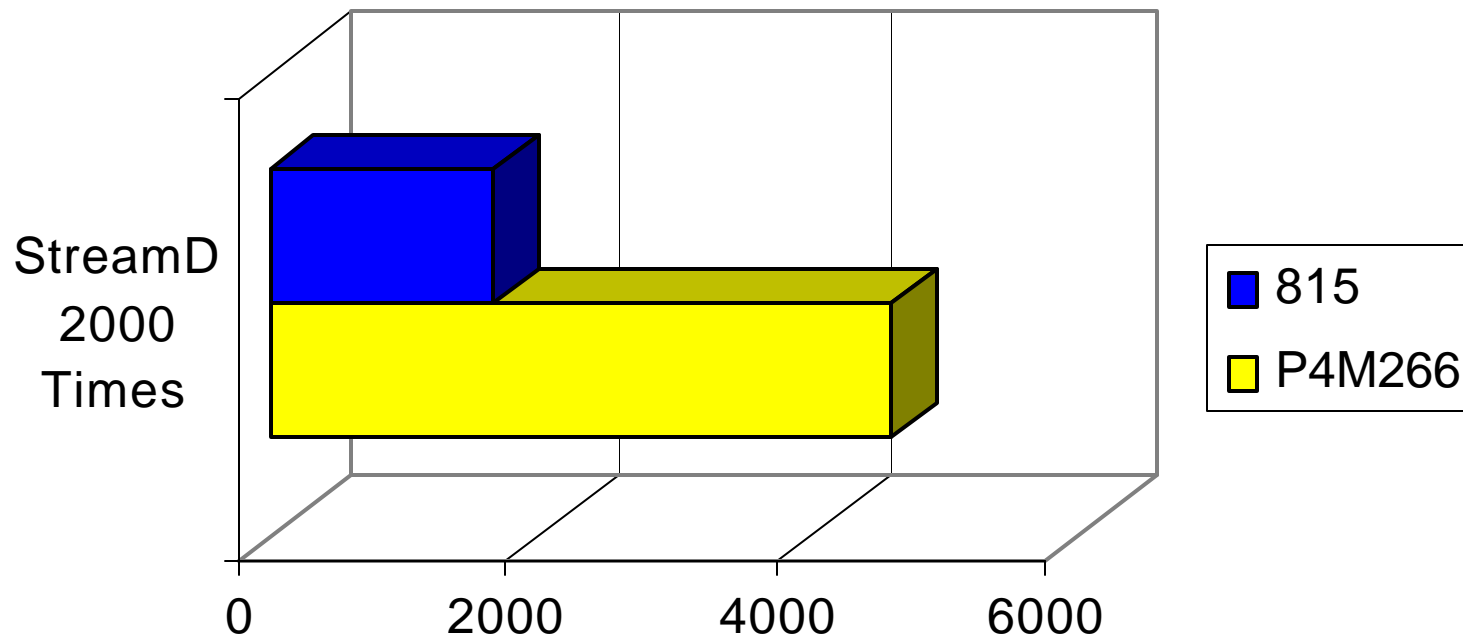
# Sisoft Sandra Memory Transfer Test



1.5GHz Intel Pentium 4 processor P4M266 Reference Board. 256MB PC2100 DDR SDRAM  
30GB IBM 307030 ATA 100 HDD; Windows 98 SE

1.0GHz Intel Pentium III processor i815 MB 256MB PC133 SDRAM 30GB IBM 307030 ATA 100  
HDD; Windows 98 SE

# StreamD 2000 Times



1.5GHz Intel Pentium 4 processor P4M266 Reference Board. 256MB PC2100 DDR SDRAM  
30GB IBM 307030 ATA 100 HDD; Windows 98 SE

1.0GHz Intel Pentium III processor i815 MB 256MB PC133 SDRAM 30GB IBM 307030 ATA 100  
HDD; Windows 98 SE



# Base System Retail Price Comparison

## P4M266 - The Compelling Value Proposition

	<b>VIA ProSavageDDR P4M266</b>	<b>Intel 815</b>	<b>Intel 845</b>
<b>CPU</b>	Intel Pentium 4 1.7GHz <b>\$275</b>	Intel Pentium III <b>\$256</b>	Intel Pentium 4 1.7GHz <b>\$275</b>
<b>Motherboard</b>	P4M266-based board <b>\$119</b>	Intel D815EEA2 <b>\$139</b>	Intel D845GBAL <b>\$182</b>
<b>Memory</b>	256 MB DDR SDRAM <b>\$29.89</b>	256 MB PC133 SDRAM <b>\$27.69</b>	256 MB PC800 SDRAM <b>\$27.69</b>
<b>Graphics Card</b>	Integrated	Integrated	nVidia Geforce2 <b>\$75.00</b>
<b>Total</b>	<b>\$424</b>	<b>\$422.69</b>	<b>\$559.69</b>



All Prices from motherboardexpress.com or crucial.com 27/09/01 |

# VIA Technologies Platform Intel® Pentium® 4



AGP4X  
AIC

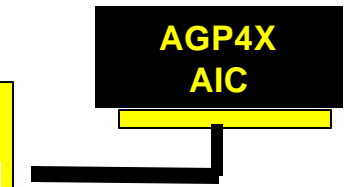


Performance Mainstream  
P4 Desktop with AGP graphics

• P4X266 discrete NB Pin-  
Compatible to P4M266  
through V-MAP



AGP4X  
AIC



End-User upgradeable  
with external AGP port



Best Cost/Perf. P4 baseline  
Value Desktop chipset with integrated  
graphics

# VIA Modular Architecture Platform (V-MAP)

## V-MAP

- Multiple Pin-to-Pin Compatible South Bridge options
- Drop-in upgrade for P4X266
- ProSavage8™ proven SMA stability and mature driver set

## Seamless product transitions on a single motherboard platform

- Faster Time to Market
- Lower Product Development, Validation, and Production costs



# VIA ProSavageDDR P4M266 – The New Corporate Desktop Standard

## **Unmatched Balance of Performance and Value**

- DDR Memory maximizes the performance of the processor and the integrated graphics without a cost penalty.

## **Rich Integrated Graphics With A Comprehensive Driver Set**

- S3 Graphics ProSavage8™ delivers the best integrated 2D/3D performance available for the Intel® Pentium® 4 processor platform with a mature, comprehensive driver set.

## **V-MAP Architecture Reduces Time to Market**

- Lower Product Development, Validation, and Production costs
- Choice of the latest South Bridge platforms

