SiS Newest AMD K7 Solution

~ With FSB400 and DDR400 ~

Silicon Integrated Systems Corp.
Integrated Product Division
Technical Marketing Dept.
Mar. 2003

Agenda

- SiS K7 Product Positioning
- System Summary
- Leading Technology
- Performance Comparison
- Product Status and Driver Support

AMD Products Positioning

Full Product Lines for Value PC, Mainstream PC, and Performance PC!!

SiS 755
- Athlon™ 64 800
- AGP8x
- Pin Compatible w/ 760

SiS 748
- Athlon™ XP 400
- DDR400, AGP8x
- Pin Compatible w/ 746FX

SiS 746 FX
- Athlon™ XP 333
- DDR400, AGP8x

SiS 746
- Athlon™ XP 266
- DDR333, AGP8x

SiS 745
- Athlon™ XP 266
- DDR333, AGP4x
- Single Chip
- IEEE 1394A

SiS 760
- Athlon™ 64 800
- AGP8x
- Ultra256 VGA
- Pin Compatible w/ 755

SiS 735
- Athlon™ XP 266
- DDR266, AGP4x
- Single Chip

SiS 741
- Athlon™ XP 333
- DDR400, AGP8x
- Real256E VGA

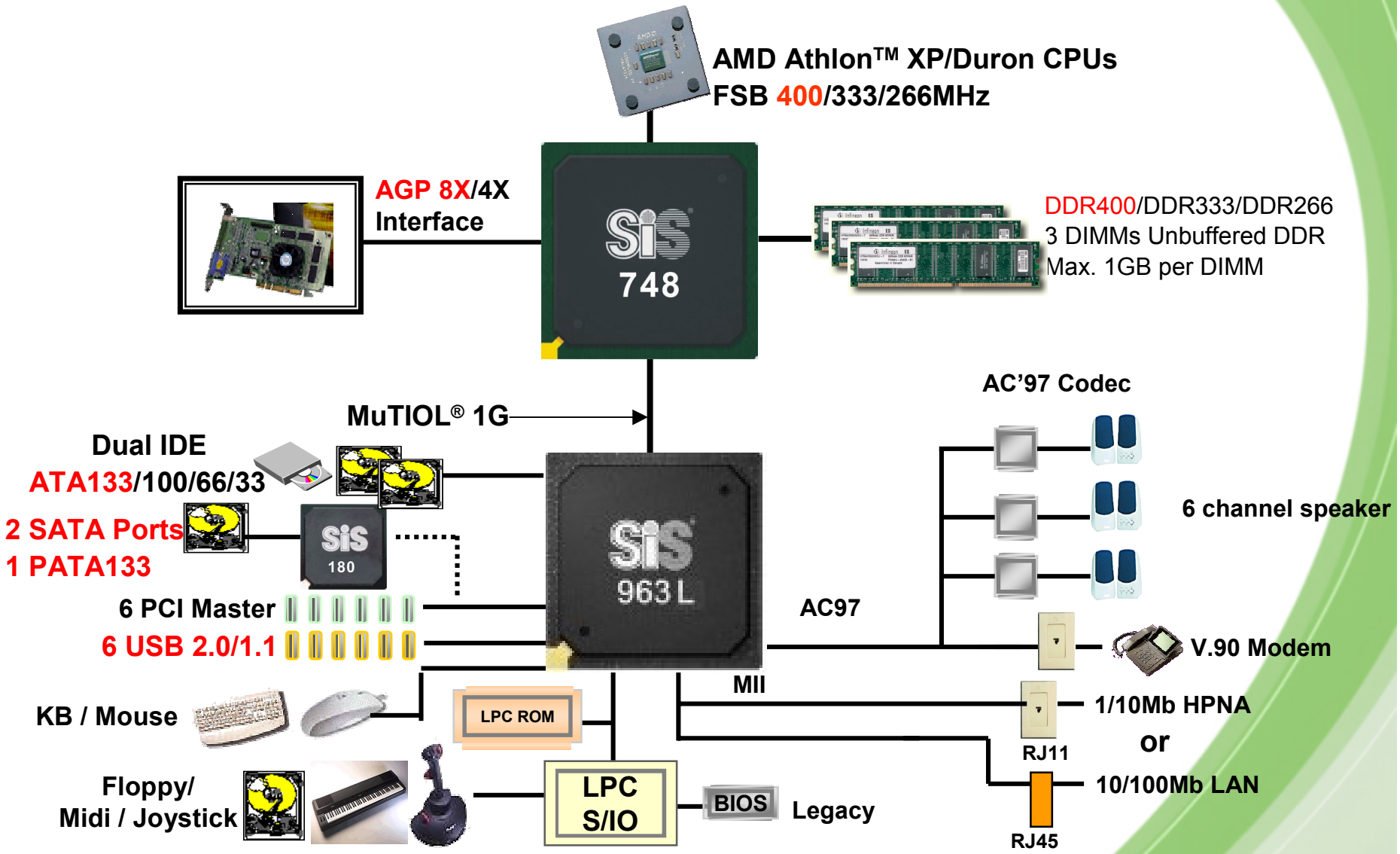
SiS 740
- Athlon™ XP 266
- DDR266
- Real256 VGA

MP, now — *Q1'03* — *Q2'03* — *Q3'03*

System Summary

- System Architecture
- North Bridge Summary
- South Bridge Summary

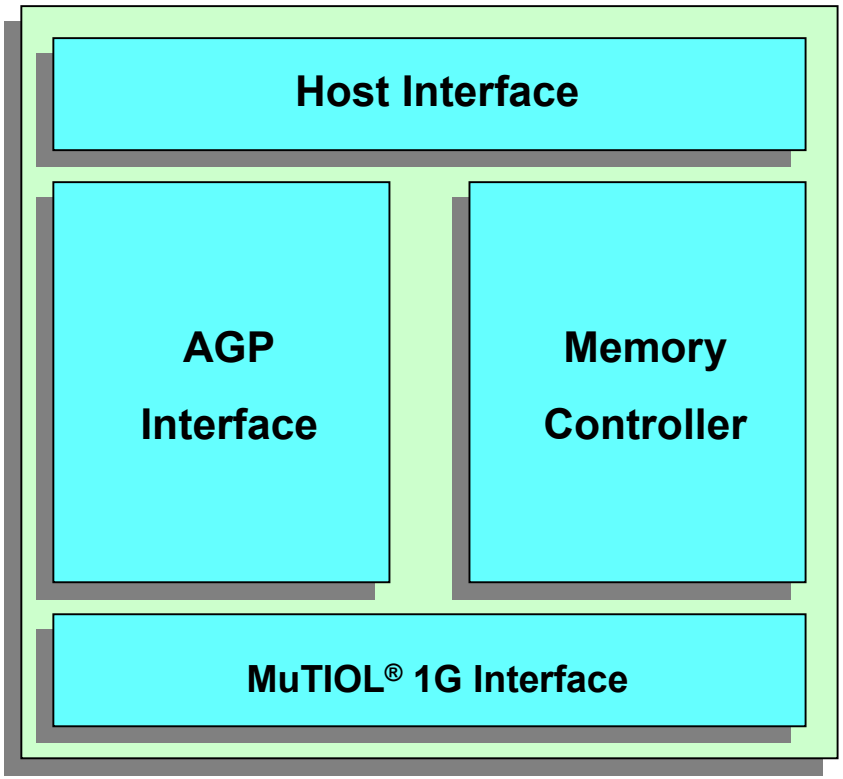
SiS748/963L System Diagram



-- PC2001 Compliant --

SiS748 North Bridge Summary

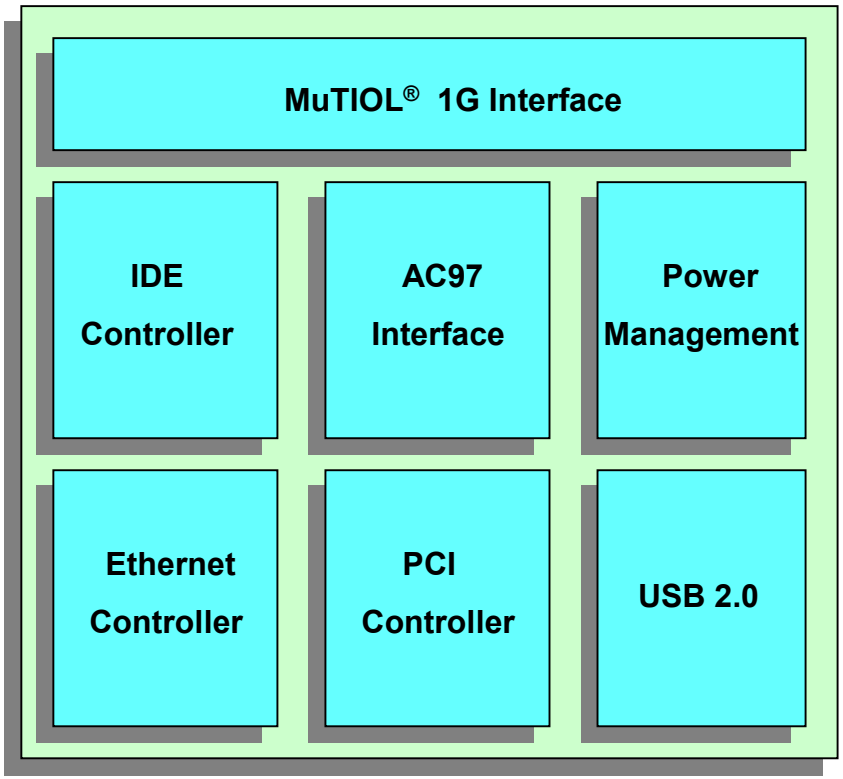
SiS748 North Bridge Architecture



- **400MHz Front Side Bus**
- **Support DDR400/333/266 DDR SDRAM**
- **Support AGP 8X/4X interface**
- **MuTIOL® 1G Interface**
  - 1GB/s Bandwidth
  - Bi-Directional 16-bit Data Bus

SiS963L South Bridge Summary

SiS963L South Bridge Architecture

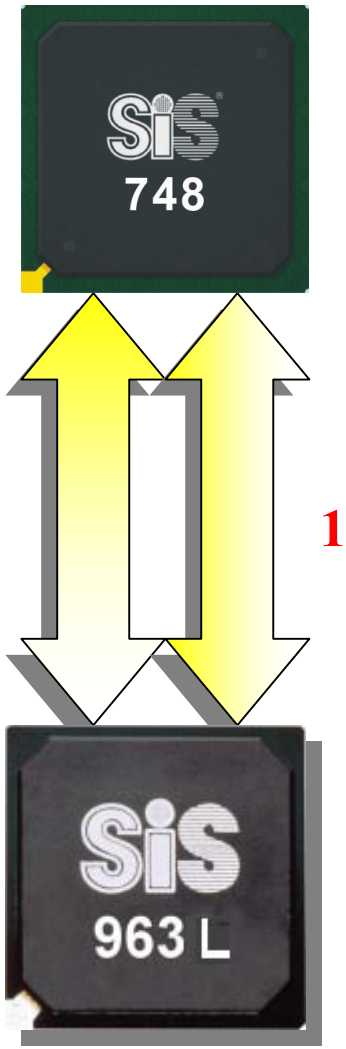


- Support ATA133/100/66/33
- USB2.0 for up to 6 ports
- 6 channels of AC97 speaker outputs
- Support V.90 HSP Modem
- ACPI 1.0b Compliance
- MuTIOL® 1G Interface
  - 1GB/s Bandwidth
  - Bi-Directional 16-bit Data Bus

Leading Technology

- MuTIOL® 1G Technology
- HyperStreaming Architecture
- SerialATA-SiS180

MuTIOL® Technology



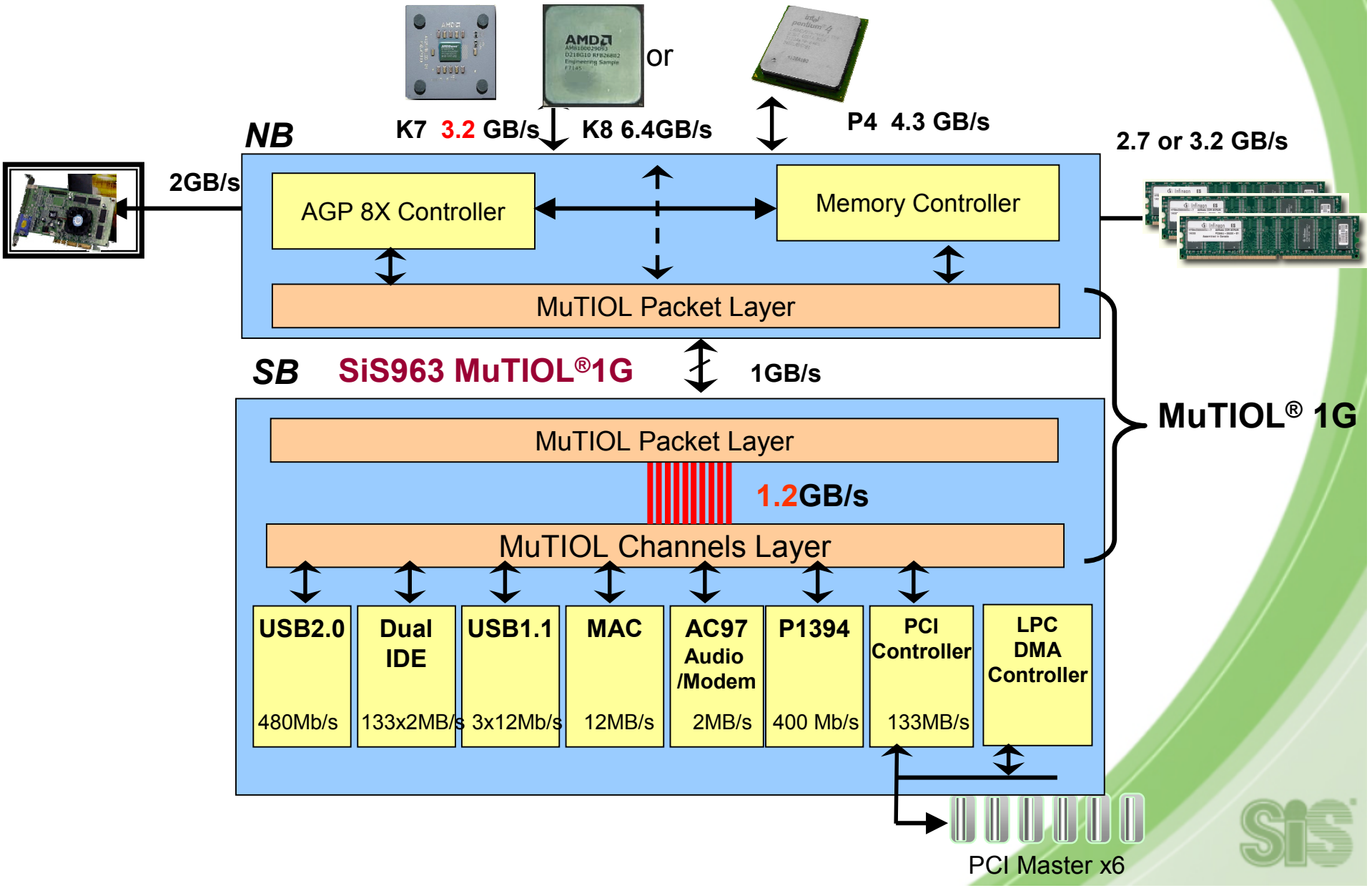
MuTIOL® 1G Delivering 1GB/s Bandwidth

Bi-Directional 16-bit Data Bus at 533MHz Operating Frequency

MuTIOL® Media I/O Family – Comparison Chart					
South Bridge	961	961B	962	963	963L
MuTIOL®	533MB/s	533MB/s	533MB/s	1GB/s	1GB/s
ATA 133		O	O	O	O
USB 2.0			O	O	O
1394a			O	O	

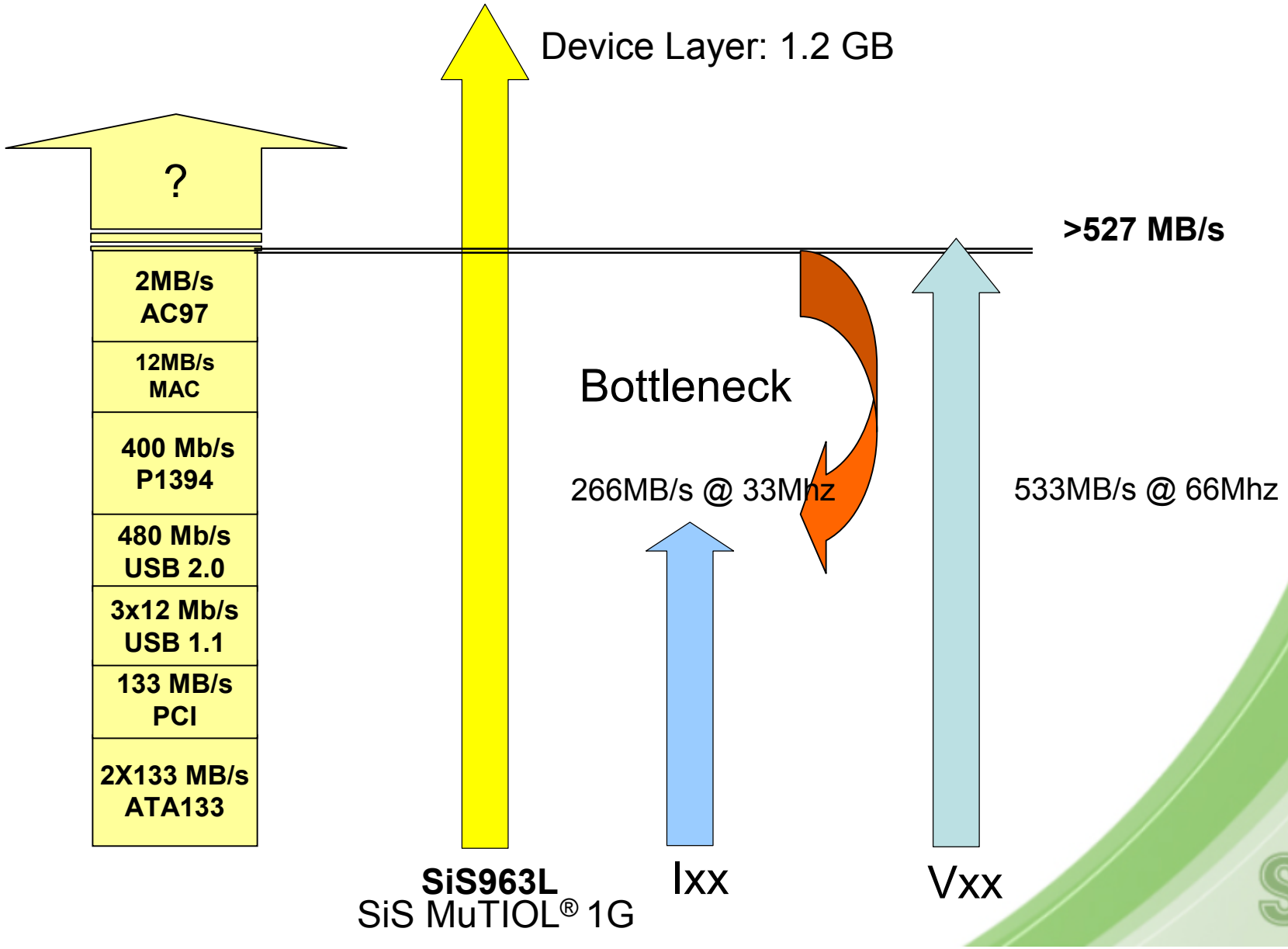
MuTIOL® 1G Technology

--Sufficient Bandwidth for All DMA Master Devices Concurrent Accessing



MuTIOL® 1G Technology Advantage

--Sufficient Bandwidth for connecting Northbridge and Southbridge



What is HyperStreaming Technology ?

- **"HyperStreaming" is SiS Proprietary technology**
  - **Make streams of data flow all over the paths**
    - ✓ **Efficiently**
    - ✓ **Concurrently**
    - ✓ **Smoothly**
    - ✓ **Intelligently**
- ***Optimized system for***
  - ***"Low Latency" with Single stream***
  - ***"Pipelining" and "Concurrent Execution" with Multiple streams***
  - ***"Prioritized Channel" with Specific stream***
  - ***"Smart flow control" and "Intelligent arbitration" with Smart stream***
- ***Satisfying End Users Desire***

Best Architecture-- SiS HyperStreaming

- **Parallel architecture in full path**
  - North-Bridge
  - Link between North-Bridge and South-Bridge
  - Device controllers
  - Host Interface
  - Memory Interface
- **Lower system latency**
- **Parallel and cost effective channels**
- **Isochronous channel for higher priority data**
- **Intelligent interface control for efficiency**

Detail information please refer to www.sis.com

SerialATA – SiS180

-- Single Chip

-- For Powerful IDE Devices Configuration

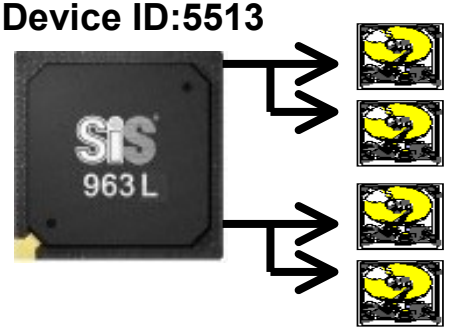
SiS180 + SiS963L IDE Configuration

- **Compatibility Mode**
  - IRQ14 for primary channel and IRQ15 for secondary channel
  - Maximum 4 IDE devices
  - Fix I/O port and IRQ
  - Resource Conflict @ over 4 IDE devices connected
- **Native Mode**
  - Native mode support in new OS only (WindowsXP, Windows.Net Server)
  - I/O port and IRQ assigned by BIOS or OS
  - No limitation of “Maximum 4 IDE devices Support”

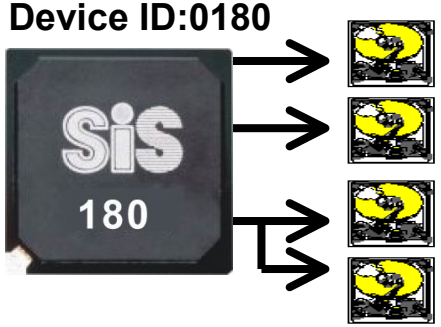
SiS180 + SiS963L IDE Configuration *-cont.*

Compatibility Mode

Device ID:5513



Device ID:0180



With Win98/WinMe Default IDE driver installed

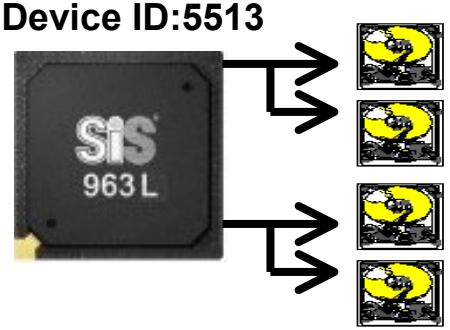
Option 1: Disable 2 PATA Controller in 963L
and use 2S1P in 180 (Max. 4 devices)

Option 2: Disable 2S1P controller in 180 and
use 2 PATA controller in 963L (Max. 4 devices)

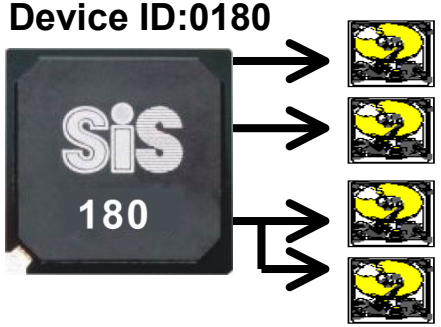
SiS180 + SiS963L IDE Configuration *-cont.*

Native Mode

Device ID:5513



Device ID:0180



- **With Native mode support OS**

Both 2 PATA controllers in 963L and
2S1P controllers in 180 can be enabled

- **Native mode support OS is WindowsXP and Windows.Net Server**

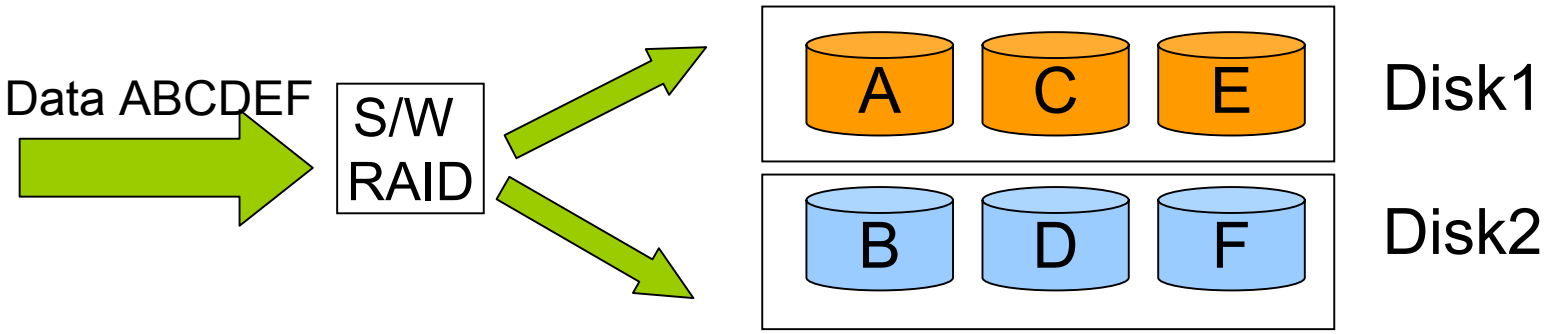
- **Maximum Support 8 IDE devices**

SiS180 Software RAID Support

- RAID0, RAID1, RAID0+1, and JBOD
- GUI Utility to create RAID, delete RAID, show RAID configuration.
- Support OS: WindowsXP and Windows2000

SiS180 Software RAID Support

RAID 0 (Striping):



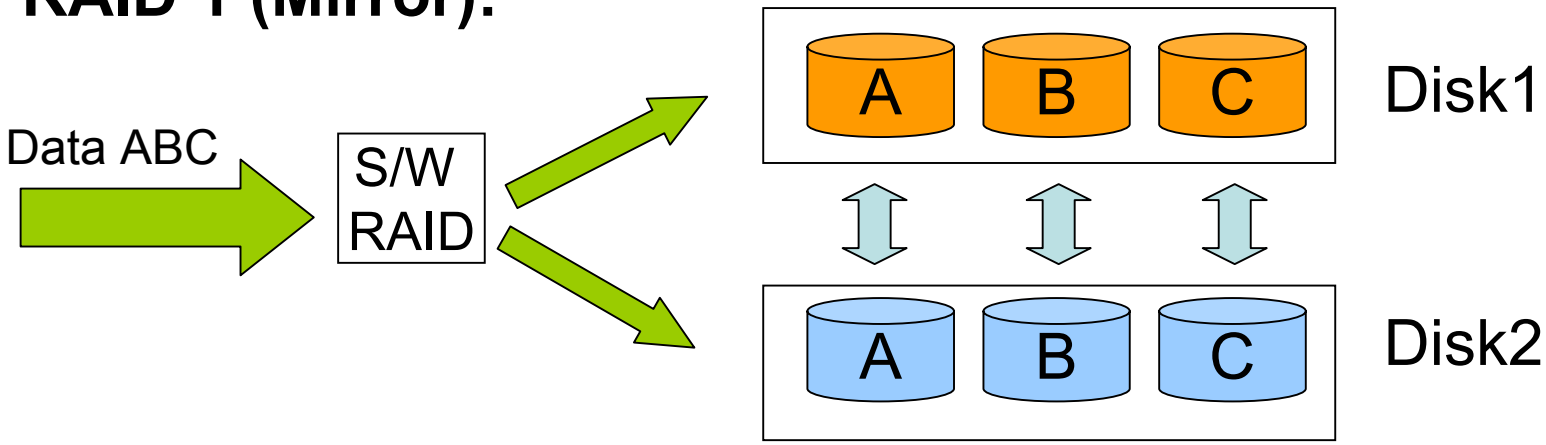
• RAID 0 implements a striped disk array, the data is divided into small blocks and each block is written to a separate disk drive.

• I/O performance is improved by separate the I/O access via different channels and drives.

•Requires a minimum of 2 drives to implement

SiS180 Software RAID Support

RAID 1 (Mirror):



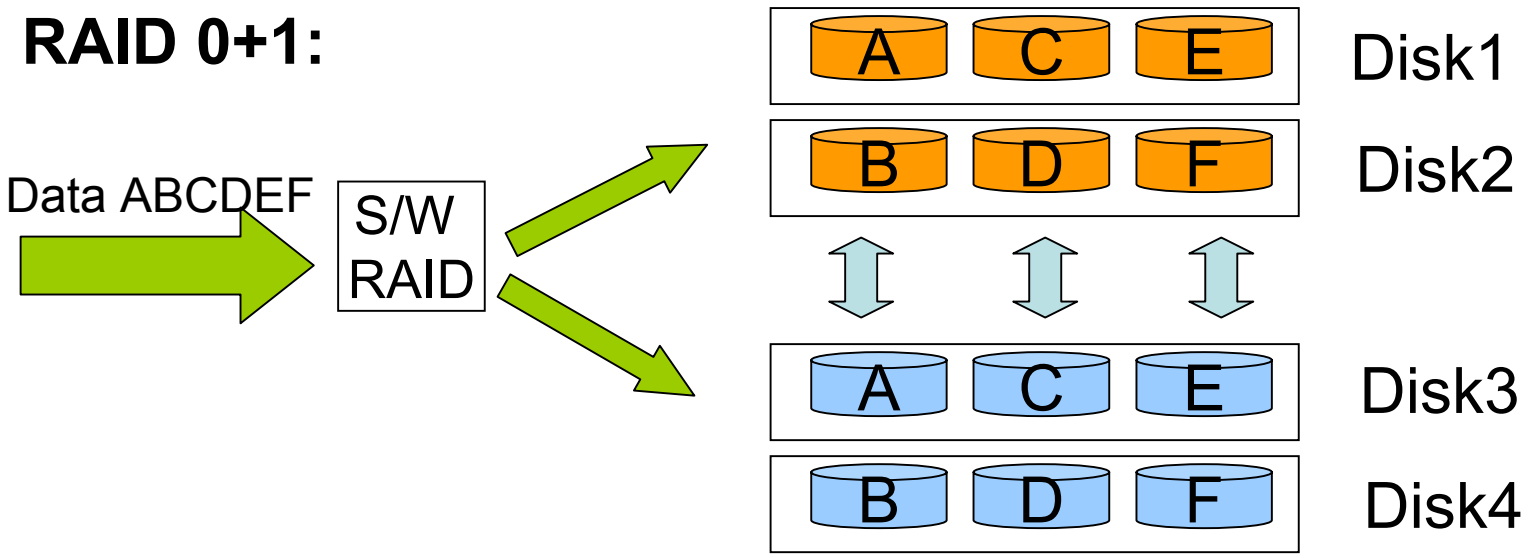
• RAID 1 implements a mirrored disk array, the data is written to one disk and copied to the replacement disk at the same time.

• Data will be backup in the replacement disk, that means, no rebuild is necessary in case of disk failure. While disk failure, just restore from the replacement disk.

• Requires a minimum of 2 drives to implement

SiS180 Software RAID Support

RAID 0+1:



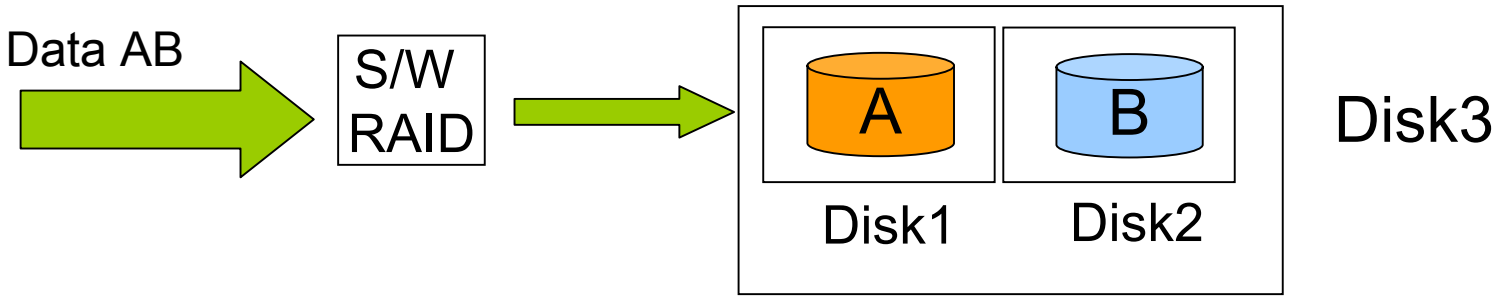
• RAID 0+1 implements a mirrored disk array, which element is a striped array. The data is written in the format of striping and copied to the replacement disk array at the same time.

• Providing the same level of rebuild capability of RAID1

• Requires a minimum of 4 drives to implement

SiS180 Software RAID Support

JBOD:



- JBOD combines two or more physical Disk to be single virtual DIsk.
- Requires a minimum of 2 drives to implement

SiS180 Key Feature List

- **PCI Interface**
  - PCI rev 2.3 Compliant
  - Support 33MHz/32bit PCI interface
- **Serial ATA Interface**
  - Support Serial ATA rev 1.0
  - Support Serial ATA spec. of 150MB/s transfer rate
  - Integrated 2 channel SATA PHY logic with 2 independent Serial ATA ports support
- **Parallel IDE Interface**
  - One IDE Channel with 2 IDE devices support
  - Support PIO mode 0, 1, 2, 3, 4 and Multiword DMA mode 0, 1, 2
  - Support Ultra DMA mode 33/66/100/133
  - ATA/ATAPI 48-bit address compliance for supporting device over 137GB
  - Support Native and compatibility Mode
- **ROM Interface**
  - Support 64K bytes ROM
- **Package**
  - 128-pin PQFP Package

Performance Comparison

- SiS748 vs. KT400A Feature list
- Performance Comparison

SiS748 vs. KT400A

SiS748 DDR480 vs. DDR400

SiS748 VS KT400A

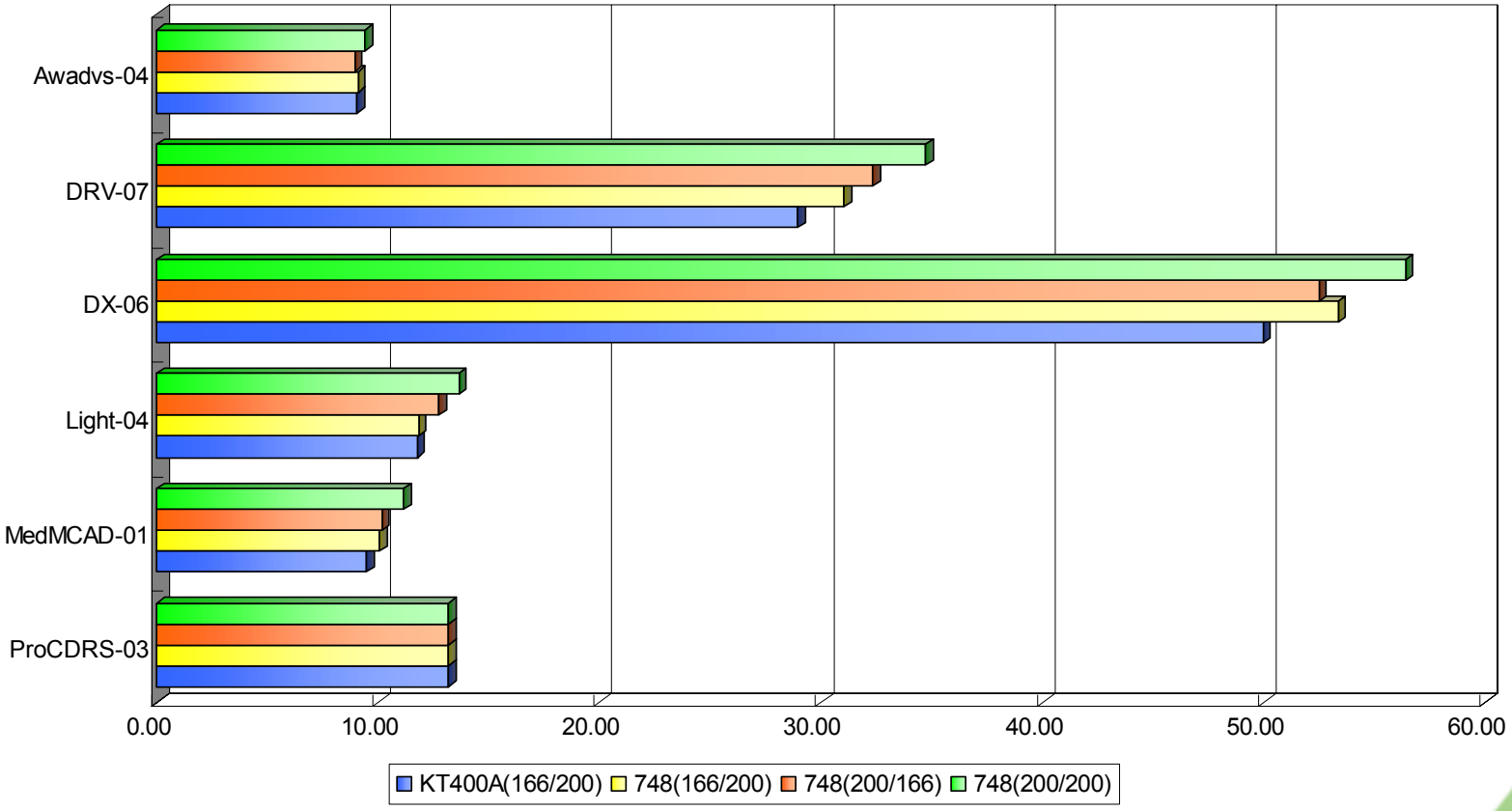
~ Feature List ~

400MHz	**Front Side Bus**	333MHz
DDR400/333/266	**Memory Type**	DDR400/333/266
8X	**AGP**	8X
1GB/s	**North/South Bridge Bandwidth**	533MB/s
6 PCI	**PCI Device/ Slot**	6 PCI
ATA 33/66/100/133	**IDE**	ATA 33/66/100/133
USB 1.1/2.0 6 ports	**USB**	USB 1.1/2.0 6 ports

SiS748 VS KT400A

3D Performance

~ Specview 7.0 ~



SiS748

CPU: *AMD Athlon XP 2200+*
DRAM: Kingston DDR400 256MB
VGA Driver: ATi9700 6.13.10.6218
HD: Maxtor Maxtor 40G 7200 ATA133

KT400A

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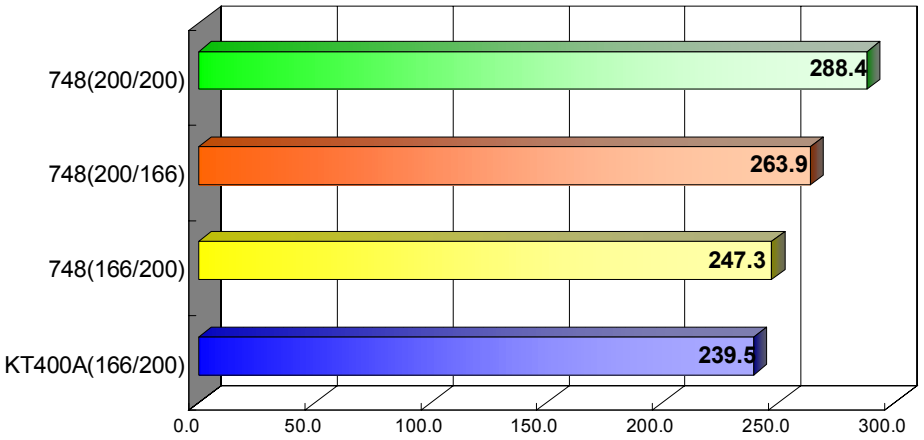
SiS748 VS KT400A

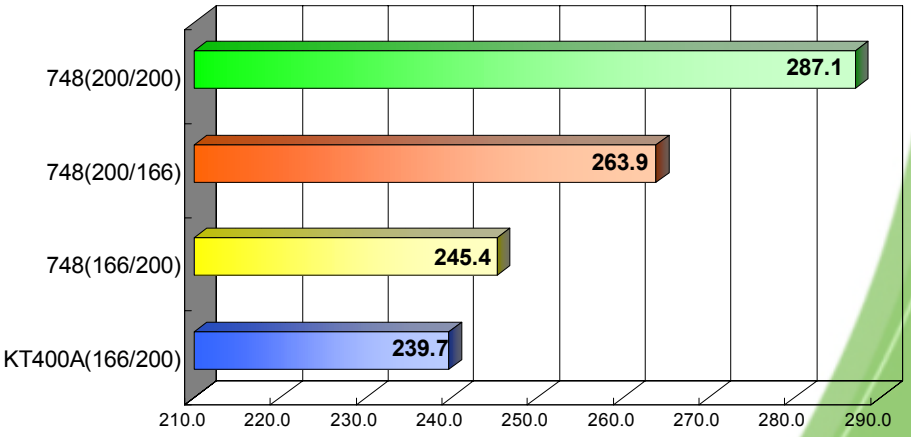
3D Performance

~ Quake 3 ~

640x480x32bit



1024x768x32bit



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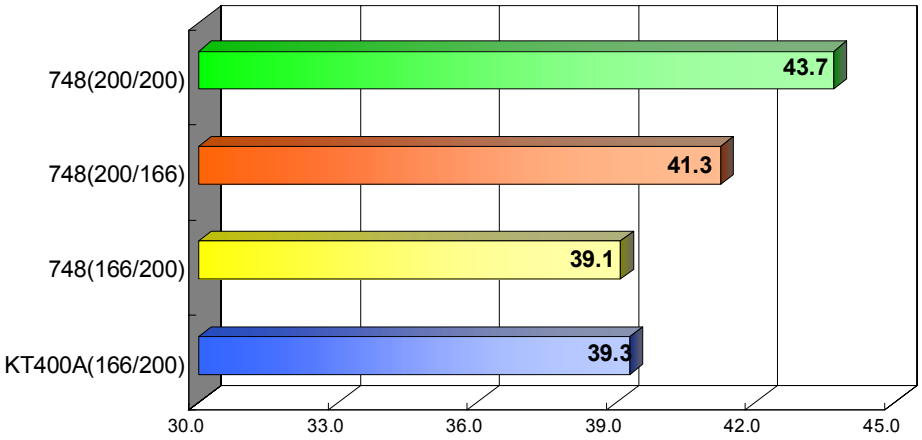
SiS748 VS KT400A

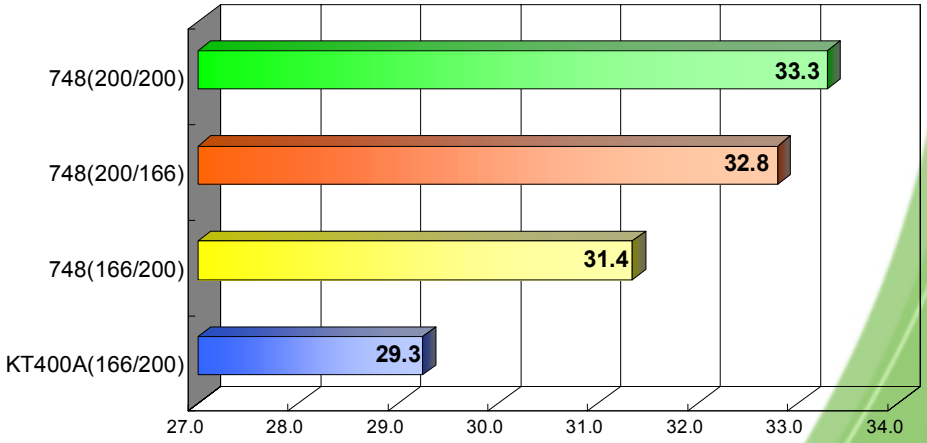
System Performance

~ Winstone ~

Ccws2002



Bcws2002



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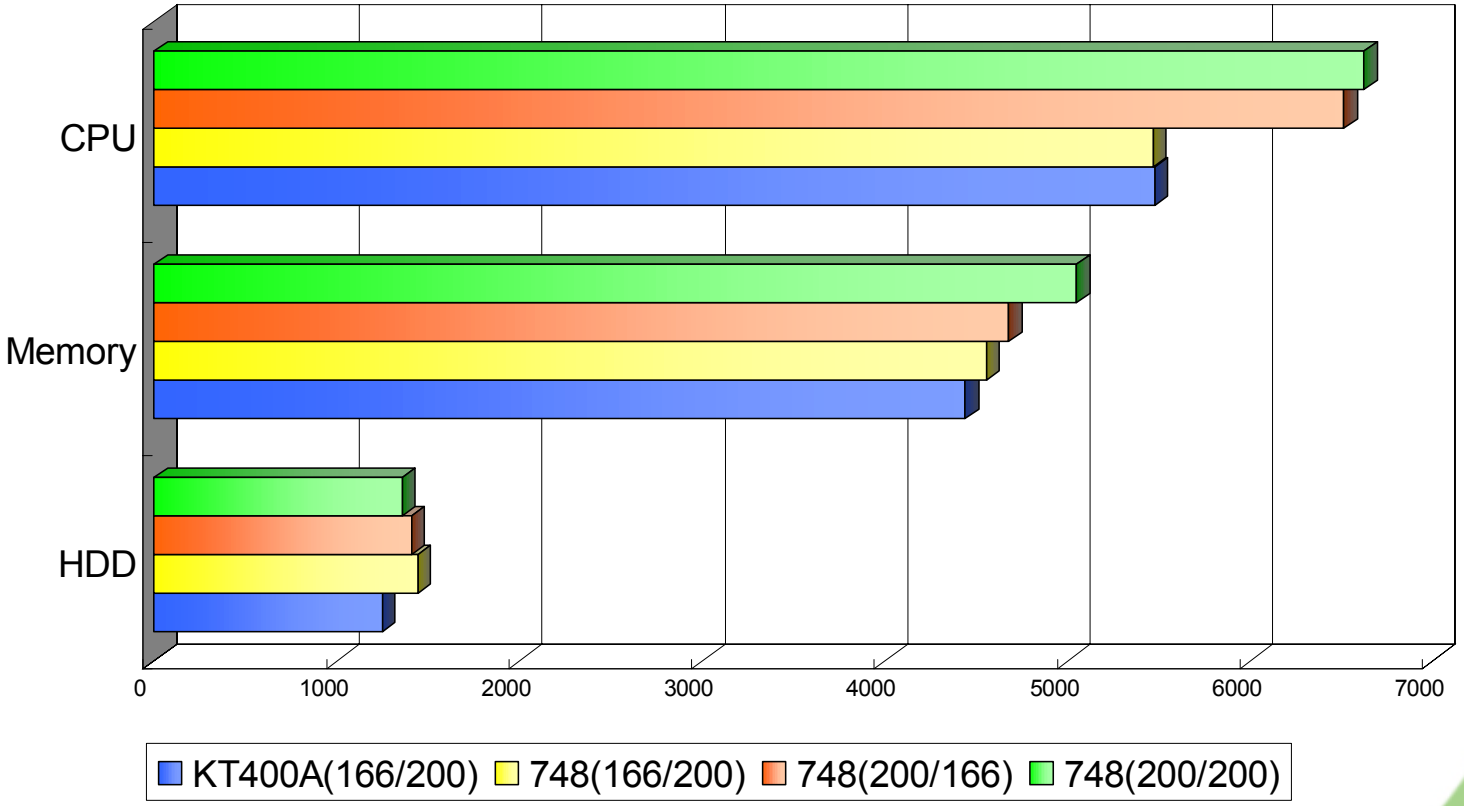
SiS748 VS KT400A

System Performance

~ PC Mark2002 ~



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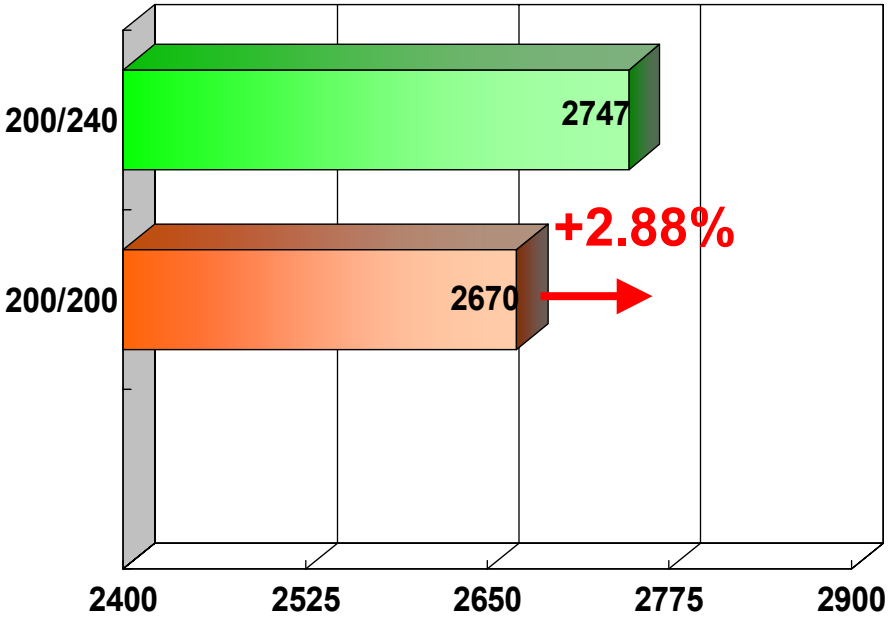
The Miracle of DDR480 Overclocking

-SiS748

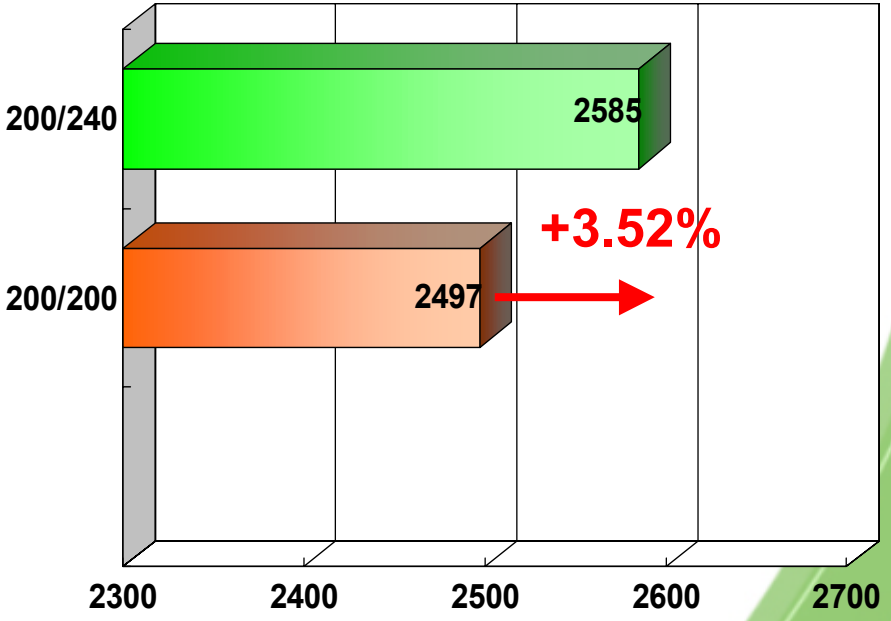
DRAM Performance

~Sandra 2003~

Int ALU/RAM Bandwidth



Float IPU/RAM Bandwidth



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VGA Driver: ATi9700 6.13.10.6218

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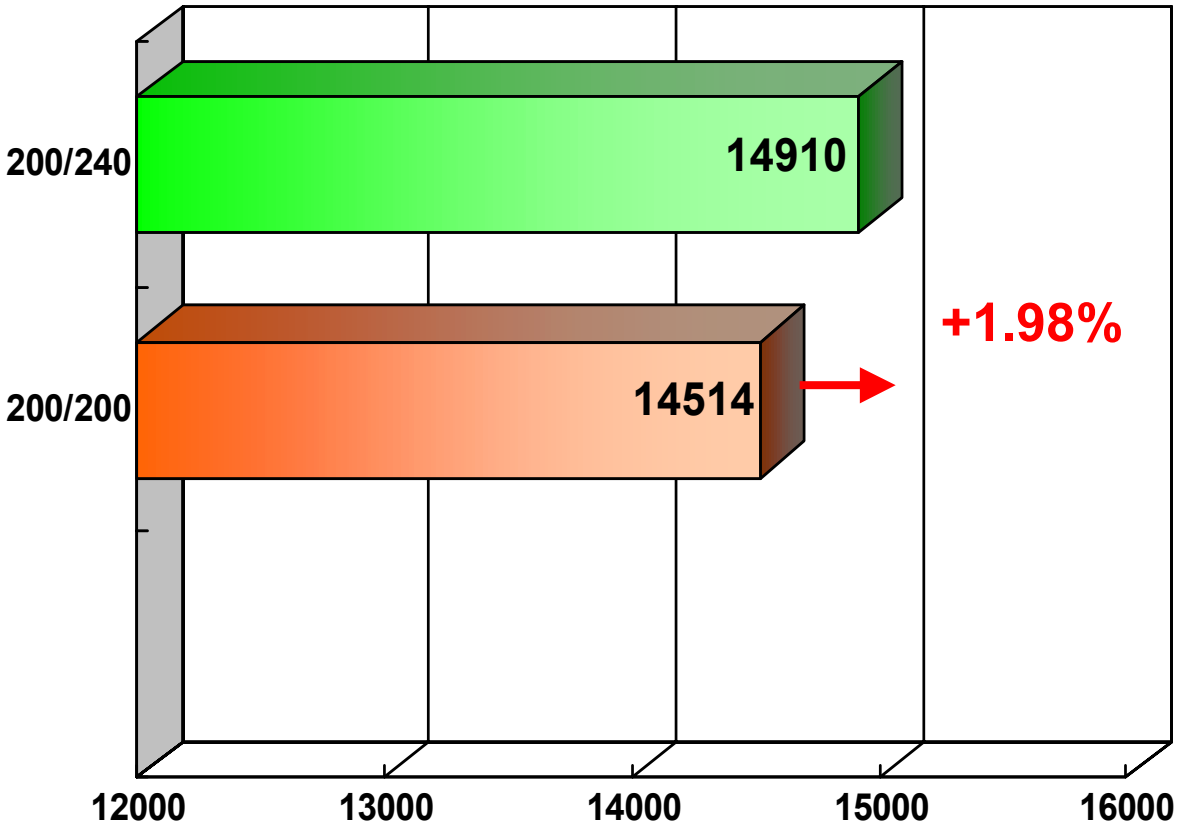
The Miracle of DDR480 Overclocking

-SiS748

3D Performance

~3DMARK2001SE~



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The Miracle of DDR480 Overclocking

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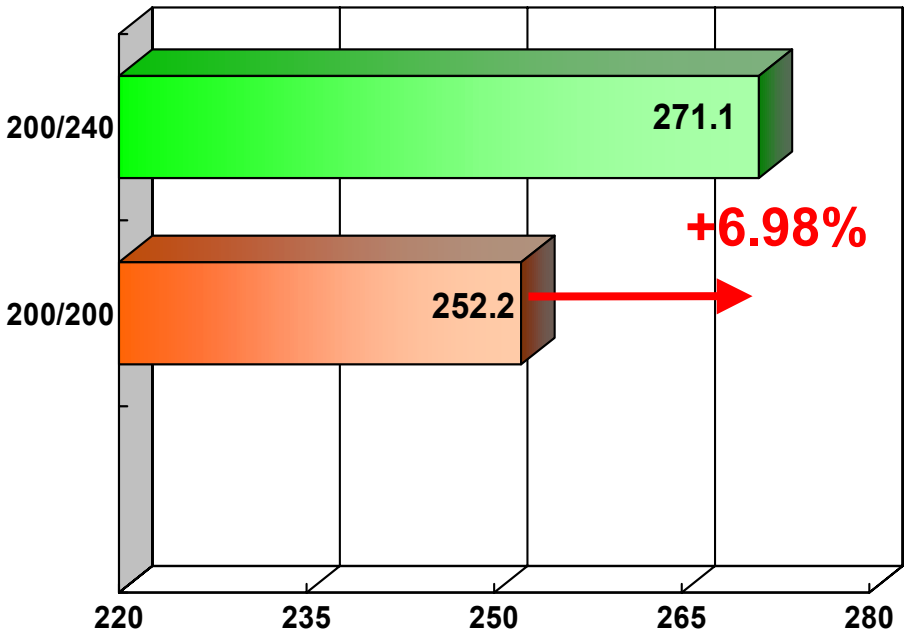
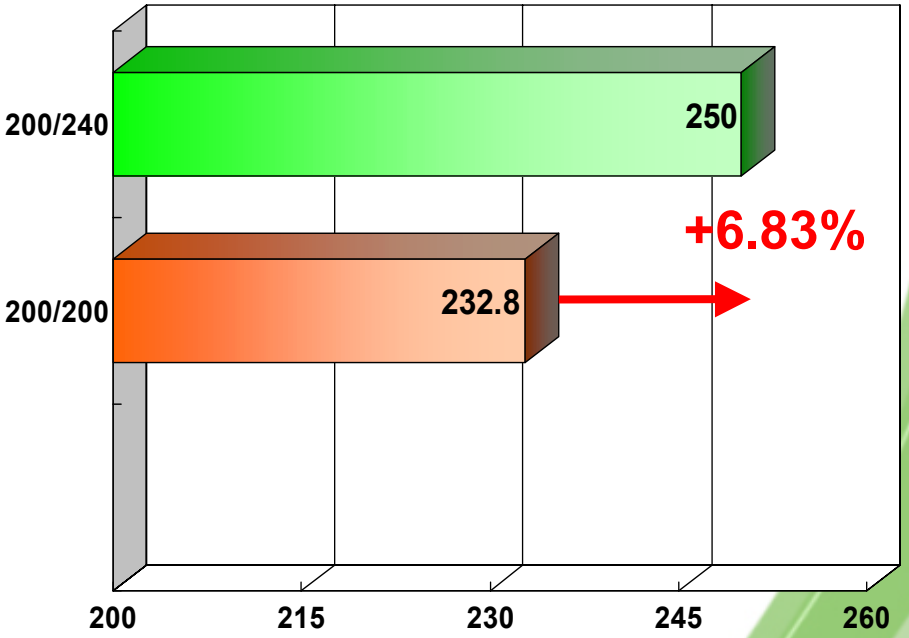
3D Performance

~ Quake 3~

800x600x32bit



1280x1024x32bit



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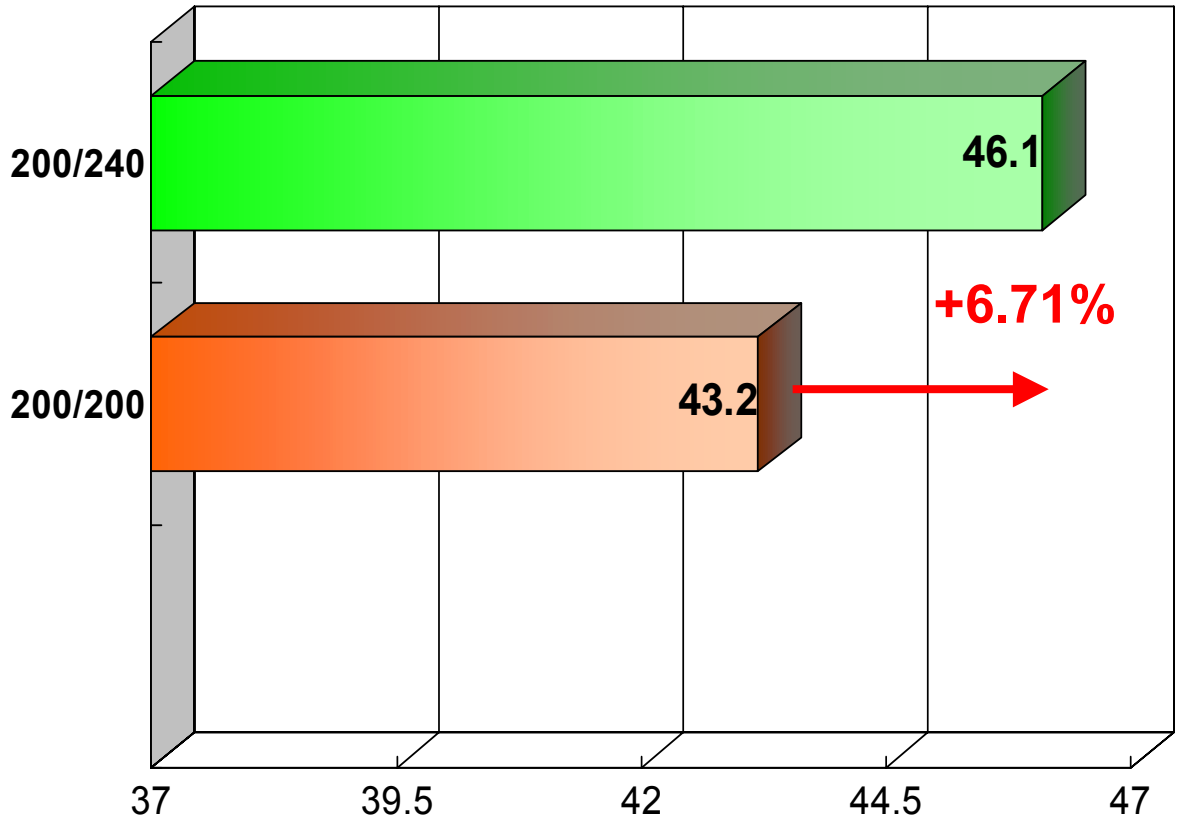
The Miracle of DDR480 Overclocking

-SiS748

System Performance

~Winstone~

Ccws2002



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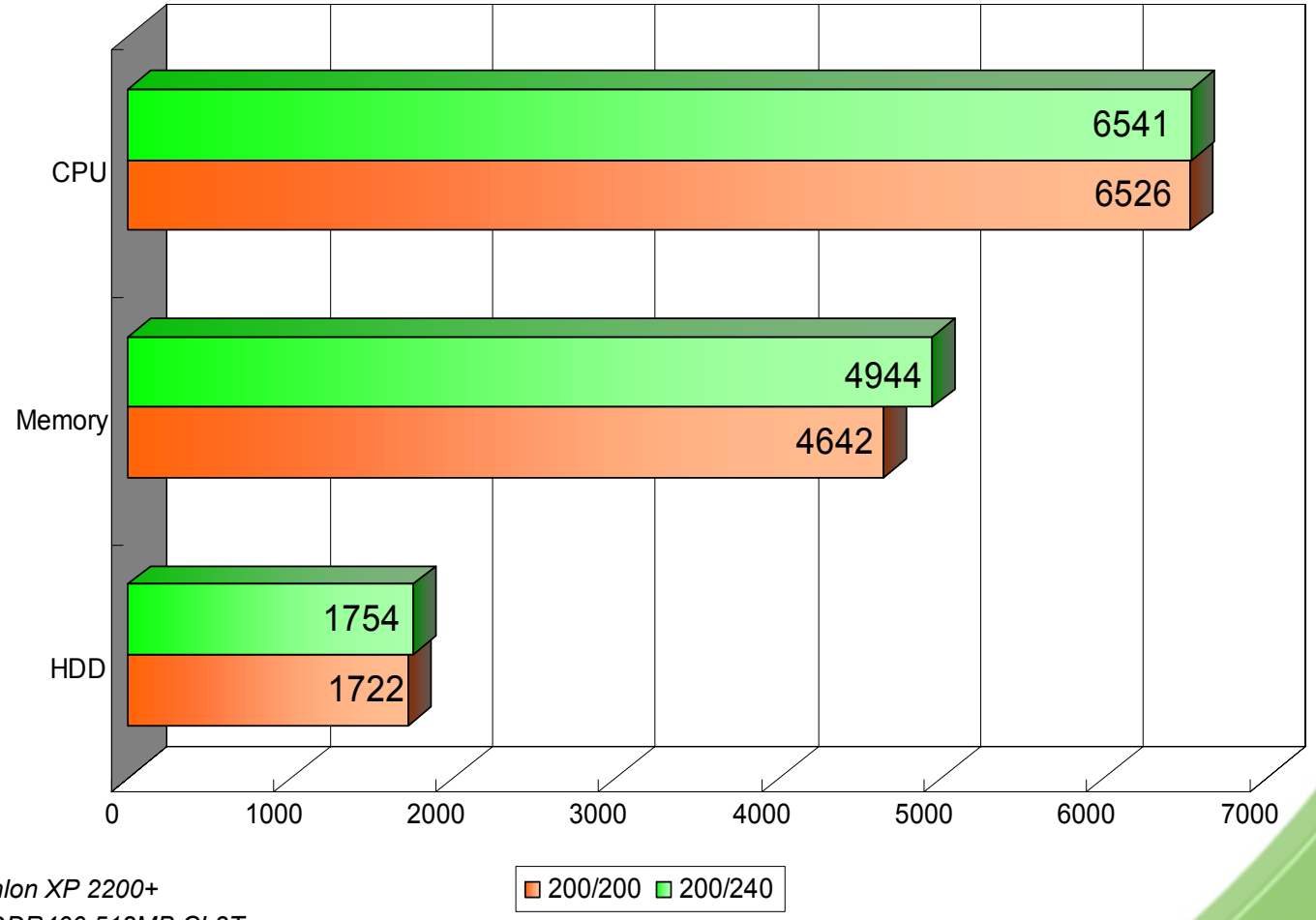
The Miracle of DDR480 Overclocking

-SiS748

System Performance

~PC Mark2002~



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Product Status and Driver Support

Product Status

North Bridge- 748:

Sample :	Now
Mass Production :	Apr.

South Bridge- 963L:

Sample A0:	Now
Mass Production :	Now

Software Support

- **SiS Unified VGA Driver**
  - Backward compatible w/650/651/M650/740 family
  - Support Win98SE,WinME,Win2000 and WinXP
- **SiS Unified AGP Driver**
  - Backward compatible w/630/730/635/735/645/650/648 family
- **SiS7012 Unified Audio Driver**
  - Backward compatible w/635/735/961/962 Family
- **SiS Unified LAN/HomePNA Driver**
  - Backward compatible w/630/730/635/735/961/962 family
- **SiS Unified IDE Driver for ATA133**
  - Backward compatible w/961/962 family
- **SiS180 RAID/Utility/IDE Driver**
  - v2.02 logo'd driver released
  - Backward compatible w/ 961/962/963 family

Thank You!

More details products' information, please visit SiS website at www.sis.com