



# *SiS Dual DDR333 Pentium 4 Chipset SiS655/963*

Silicon Integrated Systems Corp.  
Integrated Product Division  
Dec, 2002

SiS Silicon Integrated Systems Corp.



# Agenda

- **System Architecture and Key Feature**
- **Dual Memory Controller**
- **USB2.0 and IEEE1394a**
- **Advantages of SiS655**

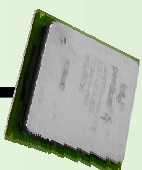


# SIS655/963- P4 Dual DDR333 Chipset

Universal AGP 3.0  
Compliant



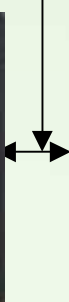
AGP 8X/4X  
Interface



Pentium 4 CPU

533MHz System Bus with 2X Address/4X Data

Dual Memory Channel DDR333/DDR266  
Up to 4 DIMM Unbuffered DDR Support  
Max. 1GB per DIMM



MULTIOL 1GB, 16 Bit @ 533Mhz

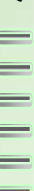
Dual IDE  
ATA133/100/66



USB 2.0/1.1



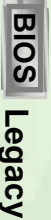
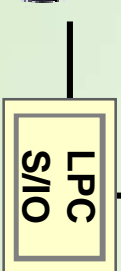
6 PCI Master



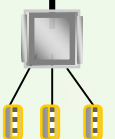
KB / Mouse



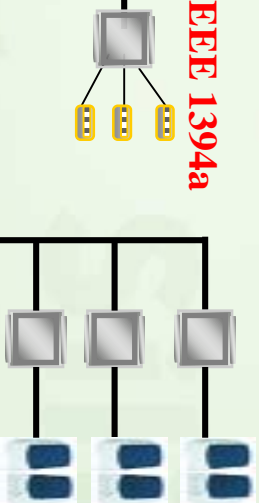
Floppy/  
Midi / Joystick



IEEE 1394a



AC'97 Codec

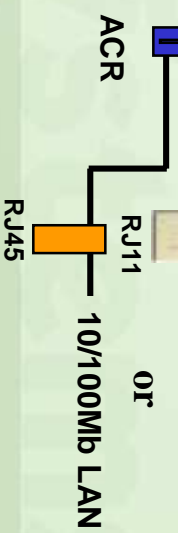


6 channel speaker

AC97

MII

V.90 Modem  
1/10Mb HPNA  
or  
10/100Mb LAN



ACR

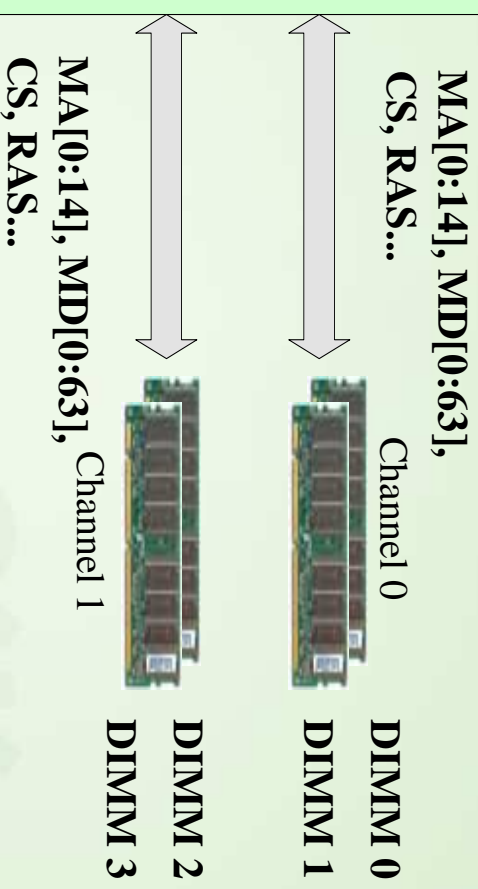
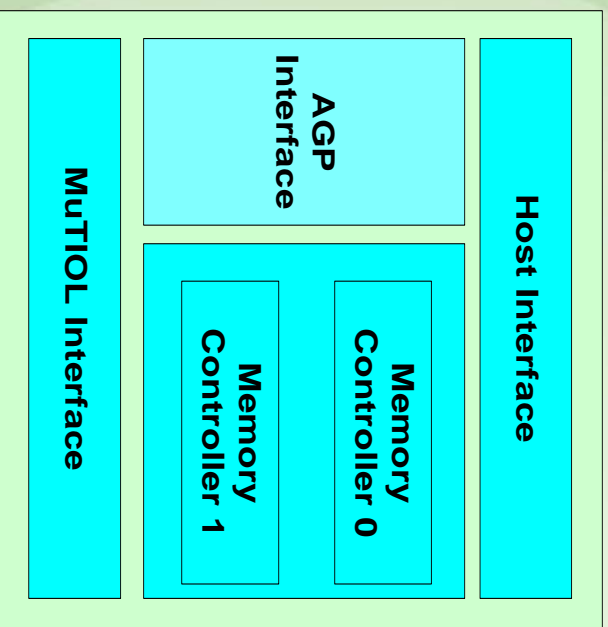
RJ45

RJ11

-- PC2001 Compliant --

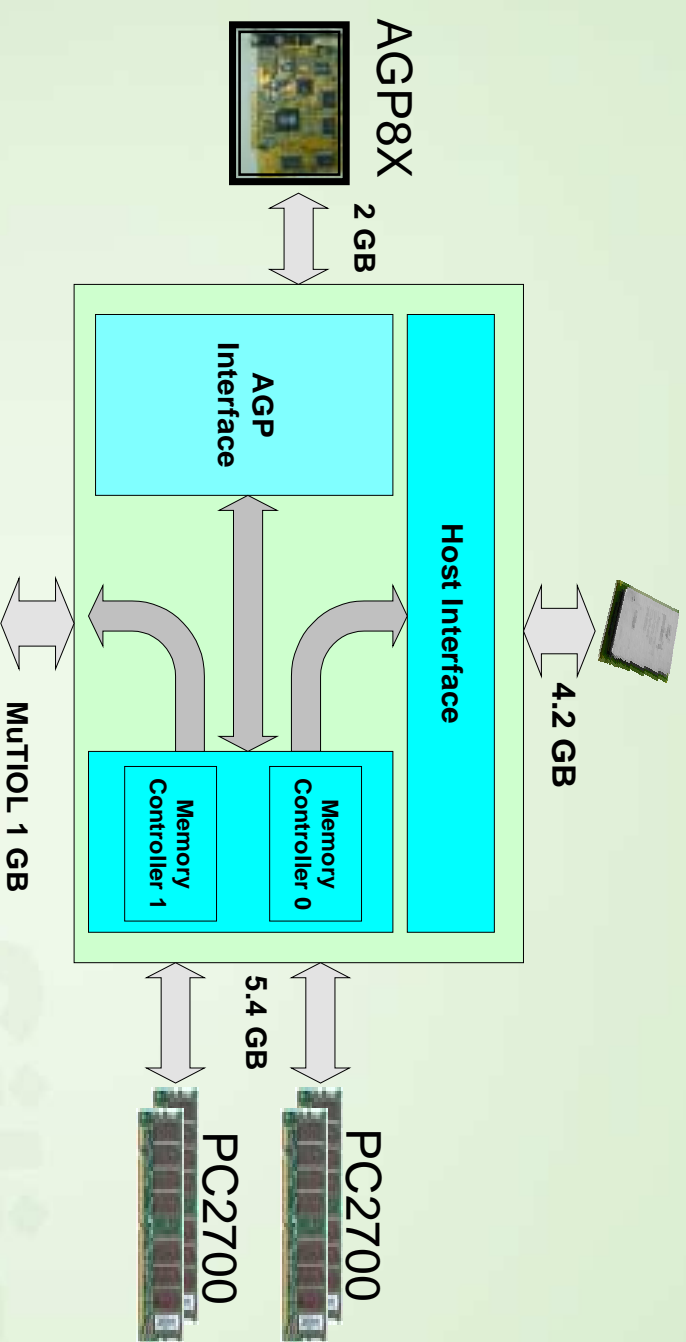
# Dual Memory Controller Overview

- SIS655



- Independent MA, MD, and control signals for each channel
- Support 128bit mode, Concurrent Dual64bit mode and Legacy single 64 bit mode.
- Auto Configuration for flexible DIMM combination Support

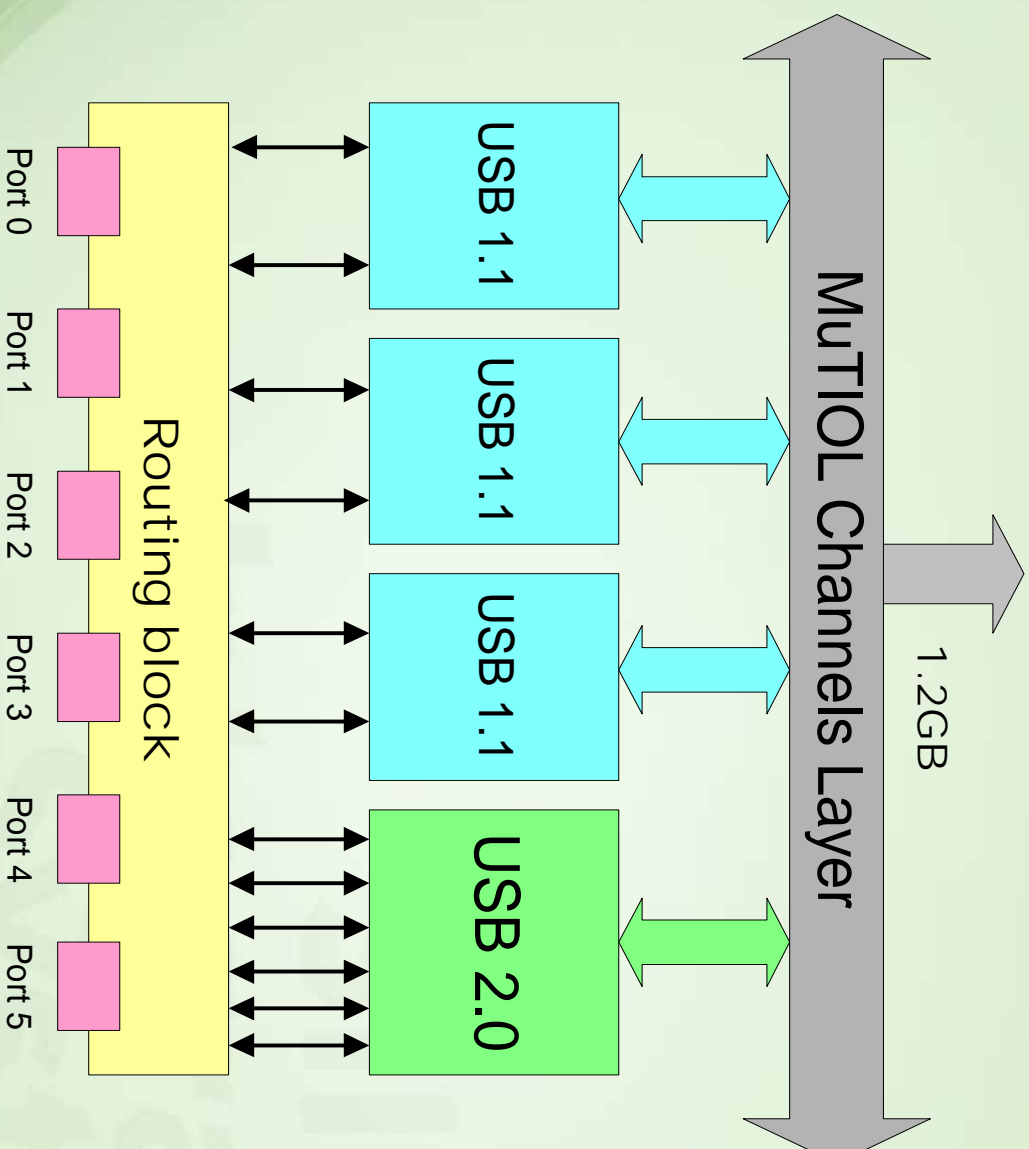
## Dual Memory Controller Advantage- sis655



- Double memory bandwidth up to 5.4 GB @ 128bit mode and 2x64 bit mode
- 2x64bit mode provides no DIMM type and size limit for enabling Dual channel advantage.
- Simply enable dual channel advantage and upgrade the performance at inexpensive way

# SIS963 -- USB2.0/1.1

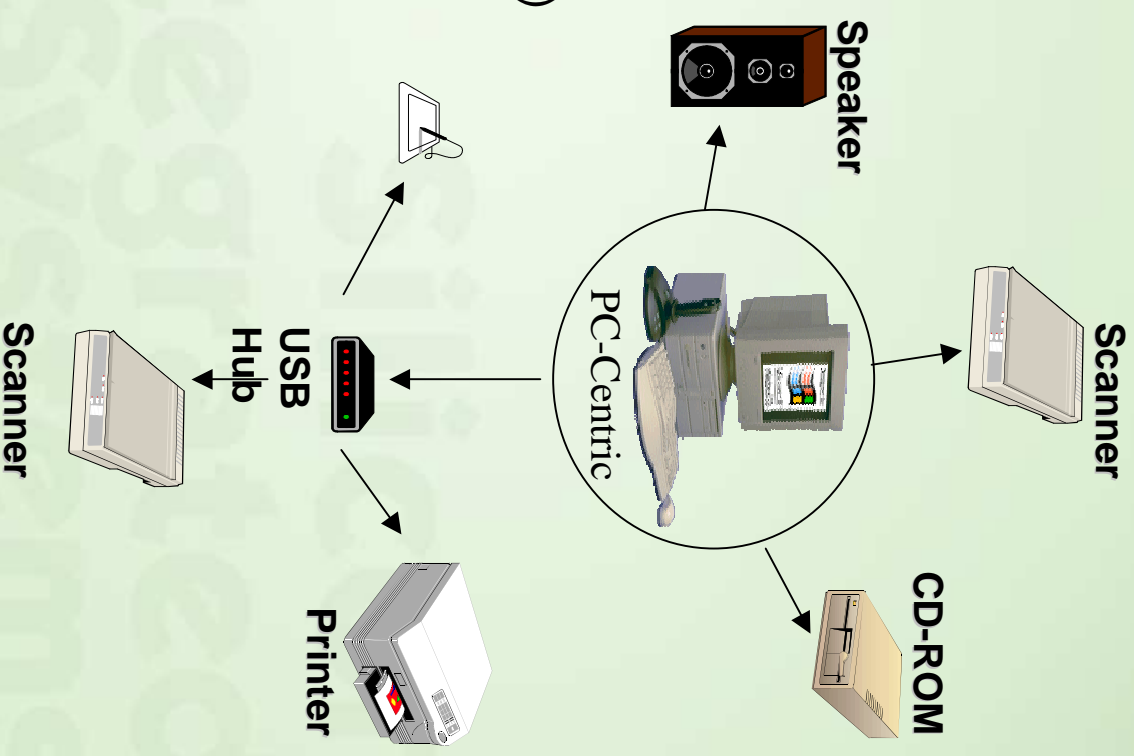
Make USB Migration Smooth



Dynamic Switching to USB1.1 or USB2.0, depends on Devices

# USB2.0 - What it is?

- **Support PC-centric connection to High Speed and High Performance PC Peripherals.**
  - Support High Speed Device @480 Mb/s bandwidth = 40 times faster than USB1.1
- **Fully Backward Compatible w/ USB 1.1**
  - Support USB 1.1 Full Speed Devices (12Mb/s) and USB 1.1 Low Speed Devices (1.5Mb/s)
- **Working w/ the existing USB 1.1 connectors and cables**
  - No new connectors and cables are required.





# What USB2.0 Devices Available?

## USB 2.0 CD-ROM/DVD-ROM



Addonics Tech.  
ACOM

## USB 2.0 CD-R/RW



Plextor, SONY  
Fujitsu, Yamaha..

## USB 2.0 CCD/Camera



AME, Opteon

## USB 2.0 MO Driver



Fujitsu..

## USB 2.0 Scanner



Epson, Microtek

## USB 2.0 Flash card Reader

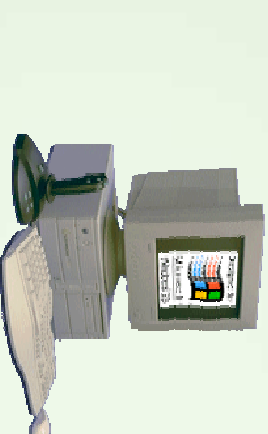


Datafab System....

## USB 2.0 HDD

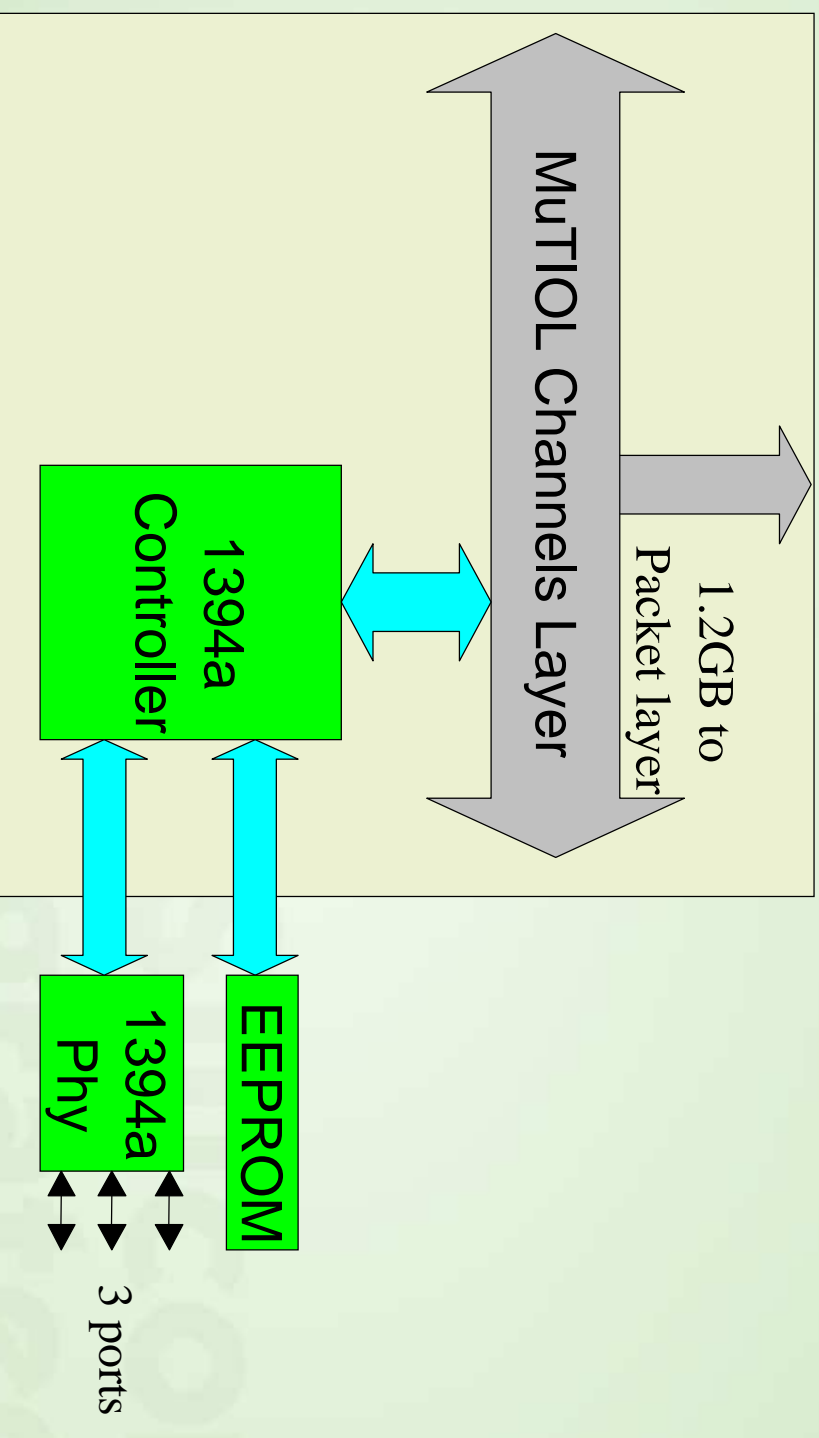


Maxtor, Fujitsu..





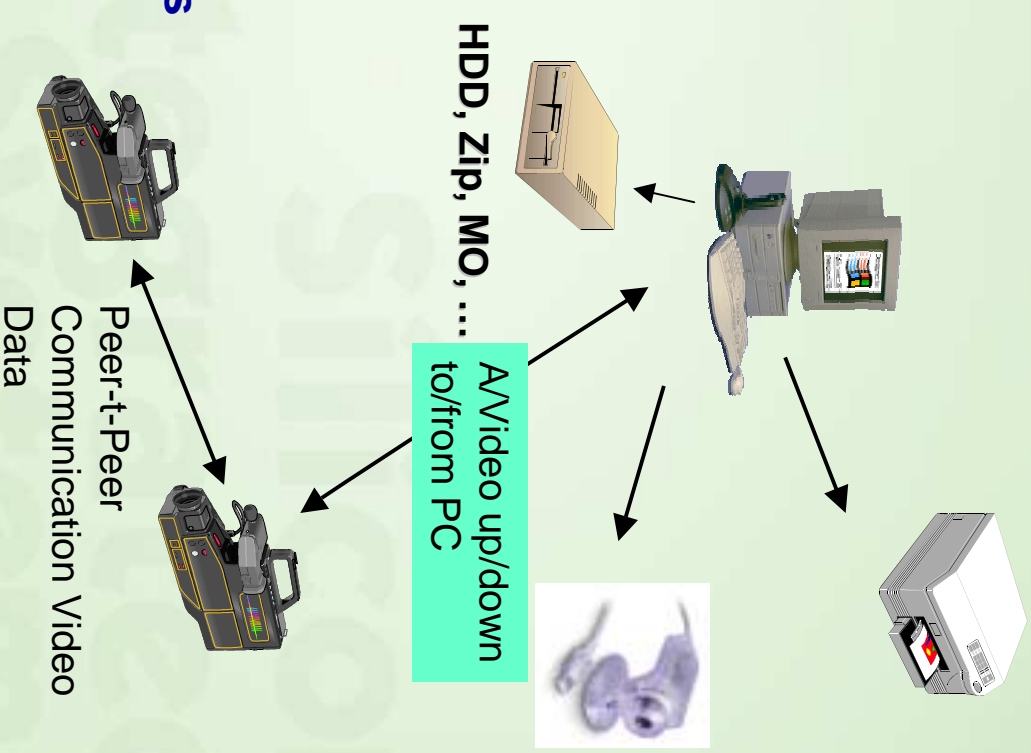
# SIS963- IEEE1394a



- Store 1394 Organizationaly Unique Identifier (OUI/OUA) Information in EEPROM
- Share single EEPROM for both IEEE1394a OUI and LAN Mac Address information

# IEEE1394a--What it is?

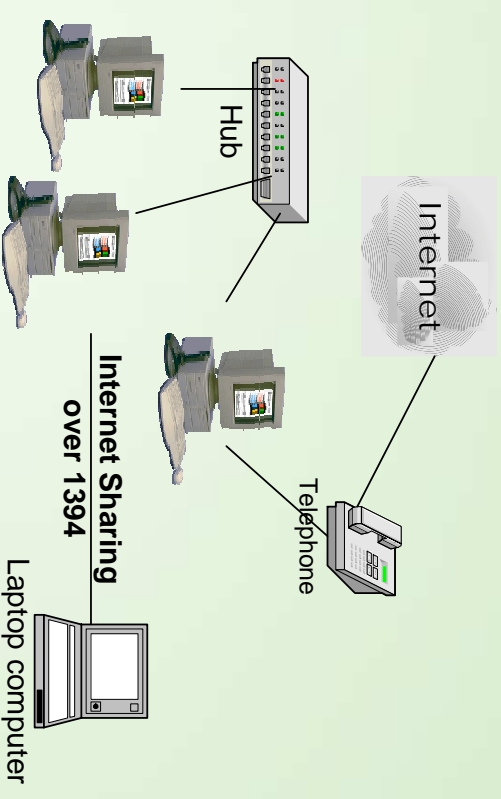
- Addressing Interconnection of Both PC Peripherals and Consumer Electronics.
- High Speed Bus Operating at data transfer rate of 100Mbps to 400 Mbps, depending on cable type
- Support Peer-to-peer communication
- Support TCP/IP Networking Capability
- Support Isochronous and asynchronous data transfer





# 1394 TCP/IP Networking – IP over 1394

- With “IP over 1394” Support to Enabling Internet Access Sharing among Networked PCs
- With “IP over 1394” Support to Direct Connect PCs by 1394 Ports w/o Additional Hardware and Drivers
- Native “IP over 1394” Support in Windows Me and Windows XP



OR



# What 1394a Devices Available?

## PC Peripherals and Consumer Electronics

**1394 HDD**



**IOMEGA, Lacie  
VST Tech..**

**1394 DVD/8**



**SONY, JVC, Sharp  
Panasonic, Canon**

**1394 MO**



**Fujitsu**

**1394 MD Recorder**



**Kenwood**

**1394 Scanner**



**Epson, UMAX..**

**1394 Music**



**Synthesizer  
Fujitsu**

**1394 CD-R/RW**



**SONY, IOMEGA**



# The Advantages of SIS655

- **Host Interface**
  - Support Intel Pentium 4 CPU
  - **533MHz system bus** w/ 2X Address and 4X Data Rate and bandwidth of up to 4.2GB/s
  - 12 Outstanding Transactions support
  - Quasi-Synchronous/Asynchronous Host/DRAM Timing support
  - Support 2M/4M/8M/16M TSEG SMRAM
  - Support Dynamic Bus Inversion.
- **DRAM Controller**
  - Integrated Dual Memory Controller w/ 128bit mode and 64bitx2 concurrent access mode support
  - DDR333/DDR266Support
  - Support Up to 4 un-buffer Double-sided DIMM
  - Max. 1GB per DIMM with 512Mb tech.
- **AGP 3.0 and AGP2.0 Compliant**
  - 8X/4X/2X Mode Support
  - Fast Write Support
  - Support 1.5V interface only
- **SIS MUTIOL Technology Delivering 1GB/sec Bandwidth**



## SIS963 MUTIOL Media IO

- **USB 2.0 /1.1 Support**
  - Integrated Three Independent Open HCI Controllers includes Root Hub w/ two USB 1.1 ports each
  - Integrated One EHCI Controller includes Root Hub w/six USB 2.0 ports
  - Support a maximum of 6 USB Ports. Dynamic connection to USB 1.1 or USB 2.0.
- **IEEE 1394a Controller Integrated**
  - OHCI 1394a 1.1 compliance
  - Up to three 1394a ports support w/ external 1394a Phy.
- **IDE Controller**
  - Dual Independent IDE Channels with **ATA133**/100/66 support
- **Integrated MAC Controller with Standard MII Interface**
- **Integrated Audio Controller w/ AC97 2.2 Compliance Interface**
  - Support **5.1 channel of Audio output** and V.90 HSP Modem
  - Support 4 Separate SDATAIN Pins for 3 x 2 ch Audio Codec + 1 Modem Codec
- **PCI 2.2 Compliant**
  - Support up to 6 PCI Masters
- **LPC Interface 1.0 Compliance**
- **ACPI 1.0b Compliance**
- **I/O APIC Support**
- **PC2001 Compliance**
- **SIS MUTIOL Technology Delivering 1GB/sec Bandwidth**