FEATURE COMPARISON: PI7C8152A vs. INTEL 21152

Features:

Feature	Pericom PI7C8152A	Intel 21152
Interfaces		
▪ Complies with the following specifications:		
PCI Local Bus Specification	Revision 2.2	Revision 2.2
PCI-to-PCI Bridge Specification	Revision 1.1	Revision 1.1
PCI Bus Power Management Interface Specification	Revision 1.0	Revision 1.0
▪ 3.3V and 5V signaling environments	yes	yes
▪ Concurrent primary and secondary bus operations	yes	yes
▪ 66MHz support	yes	no
Memory Buffer Architecture		
▪ *Dynamic Prefetching Control*	yes	no
▪ Posted memory write commands in each direction	128 bytes	88 bytes
▪ Read data buffer in each direction	256 bytes	72 bytes
Bus Arbitration		
▪ Programmable internal arbiter for the secondary bus with support for up to 4 external masters	yes	yes
▪ Disable control for use of an external arbiter	yes	yes
IEEE 1149.1 JTAG port		
▪ Available boundary scan testing	no	no
Packaging		
▪ 160-pin QFP	yes	yes
▪ Extended commercial temp range: 0°C to 85°C	yes	no (0°C to 70°C)

Pin differences (160-pin QFP):

pin number	Pericom PI7C8152A	Intel 21152
62	SCAN_EN	NAND_OUT
63	SCAN_TM_L	GOZ_L

Register differences:

	Pericom PI7C8152A	Intel 21152
Vendor ID	12D8h	1011h
Device ID	8152h	0024h

PERFORMANCE COMPARISON: PI7C8152A vs. INTEL 21152

The performance data was measured using an in-house evaluation board slotted into an off-the-shelf motherboard. Fast Ethernet (100Mbit LAN) Cards reside in each of the 4 PCI slots on the secondary bus of the evaluation board. In each comparison, the hardware and software remain constant. The only item changed is the bridge on the evaluation board. Two different sets of hardware were used, and the description of each fixture is listed. In each test setup, a PCI exerciser program is used to generate traffic or write packets from the PCI Fast Ethernet card to memory and then read back from memory to the PCI Fast Ethernet card.

TEST CASE 1

Motherboard:	Tyan S2460
Chipset:	AMD 760DDR
Processor:	AMD Athlon 1.8GHz with 266MHz Front Side Bus
Memory:	256MB PC2100 DDR
Video:	ATI Radeon 7000 AGP card
Other PCI Devices:	No other PCI devices active
OS:	Windows 2000

A Fast Ethernet card running full duplex is slotted in each of the 4 PCI slots on the evaluation board.

Results: Transfer rate measured in Megabits per second

Card Number	**PI7C8152A**	**Intel 21152**
LAN Card 1	88 Mb/s	79 Mb/s
LAN Card 2	64 Mb/s	23 Mb/s
LAN Card 3	91 Mb/s	34 Mb/s
LAN Card 4	88 Mb/s	72 Mb/s

TEST CASE 2

Motherboard:	Super Micro X5DL8-GG
Chipset:	ServerWorks Grand Champion HE
Processor:	Intel Xeon 2.8GHz with 533/400MHz Front Side Bus
Memory:	256MB 266DDR SDRAM
Video:	On-board ATI Rage XL 8MB
Other PCI Devices:	No other PCI devices active
OS:	Windows 2000

A Fast Ethernet card running full duplex is slotted in each of the 4 PCI slots on the evaluation board.

Results: Transfer rate measured in Megabits per second

Card Number	**PI7C8152A**	**Intel 21152**
LAN Card 1	75 Mb/s	31 Mb/s
LAN Card 2	93 Mb/s	51 Mb/s
LAN Card 3	94 Mb/s	54 Mb/s
LAN Card 4	95 Mb/s	60 Mb/s

TEST CASE 3

Motherboard: ASUS P4G8X
Chipset: Intel E7205
Processor: Intel Pentium 4 1.8GHz with 533/400MHz Front Side Bus
Memory: 256MB PC2100 DDR
Video: ATI Rage XL PCI
Other PCI Devices: No other PCI devices active
OS: Windows 2000

A Fast Ethernet card running full duplex is slotted in each of the 4 PCI slots on the evaluation board.

Results: Transfer rate measured in Megabits per second

Card Number	**PI7C8152A**	**Intel 21152**
LAN Card 1	16 Mb/s	10 Mb/s
LAN Card 2	22 Mb/s	12 Mb/s
LAN Card 3	15 Mb/s	10 Mb/s
LAN Card 4	21 Mb/s	11 Mb/s

TEST CASE 4

Motherboard: Super Micro P4QH6
Chipset: ServerWorks Grand Champion HE
Processor: Intel Xeon 2.8GHz with 400MHz Front Side Bus
Memory: 256MB ECC DDR
Video: ATI Rage XL
Other PCI Devices: No other PCI devices active
OS: Windows 2000

A Fast Ethernet card running full duplex is slotted in each of the 4 PCI slots on the evaluation board.

Results: Transfer rate measured in Megabits per second

Card Number	**PI7C8152A**	**Intel 21152**
LAN Card 1	73 Mb/s	29 Mb/s
LAN Card 2	92 Mb/s	47 Mb/s
LAN Card 3	93 Mb/s	51 Mb/s
LAN Card 4	93 Mb/s	58 Mb/s