

**FEATURE COMPARISON: PI7C8150A vs. Intel 21150**

**Features:**

Feature	Pericom PI7C8150A	Intel 21150
<b><u>Interfaces</u></b> <ul style="list-style-type: none"> <li>▪ Complies with the following specifications:  <i>PCI Local Bus Specification</i>  <i>PCI-to-PCI Bridge Specification</i>  <i>PCI Bus Power Management Interface Specification</i></li> <li>▪ 3.3V and 5V signaling environments</li> <li>▪ Concurrent primary and secondary bus operations</li> </ul>	Revision 2.2 Revision 1.1 Revision 1.0 yes yes	Revision 2.2 Revision 1.1 Revision 1.0 yes yes
<b><u>Memory Buffer Architecture</u></b> <ul style="list-style-type: none"> <li>▪ <i>Dynamic Prefetching Control</i></li> <li>▪ Posted memory write commands in each direction</li> <li>▪ Read data buffer in each direction</li> </ul>	yes 128 bytes 256 bytes	no 88 bytes 72 bytes
<b><u>Bus Arbitration</u></b> <ul style="list-style-type: none"> <li>▪ Programmable internal arbiter for the secondary bus with support for up to 9 external masters</li> <li>▪ Disable control for use of an external arbiter</li> </ul>	yes yes	yes yes
<b><u>IEEE 1149.1 JTAG port</u></b> <ul style="list-style-type: none"> <li>▪ Available boundary scan testing</li> </ul>	yes	yes
<b><u>Packaging</u></b> <ul style="list-style-type: none"> <li>▪ 208-pin QFP</li> <li>▪ 256-pin PBGA</li> <li>▪ Extended commercial temp range: 0°C to 85°C</li> </ul>	yes yes yes	yes yes no (0°C to 70°C)

**Pin differences (208-pin QFP):**

pin number	Pericom PI7C8150A	Intel 21150
106	MS1	VSS
125	CFG66/SCAN_EN	CONFIG66
127	RESERVED	NC
128	RESERVED	NC
155	MS0	VDD

**Register differences:**

	Pericom PI7C8150A	Intel 21150
Vendor ID	12D8h	1011h
Device ID	8150h	0022h

**PERFORMANCE COMPARISON: PI7C8150A vs. Intel 21150**

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: Super Micro P3TDLE  
Chipset: ServerWorks Grand Champion  
Processor: Intel 733MHz Pentium III with 133MHz Front Side Bus  
Memory: 256MB PC133 SDRAM  
Video: PCI add-in card on the primary bus  
Other PCI Devices: No other PCI devices active

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	<b>PI7C8150A</b>	<b>Intel 21150</b>
LAN Card 1	52 Mb/s	25 Mb/s
LAN Card 2	93 Mb/s	58 Mb/s
LAN Card 3	46 Mb/s	26 Mb/s
LAN Card 4	90 Mb/s	58 Mb/s

**TEST CASE 2**

Motherboard: Tyan S2466  
Chipset: AMD 766DDR  
Processor: AMD Athlon 1.8GHz with 266MHz Front Side Bus  
Memory: 256MB 266DDR SDRAM  
Video: PCI add-in card on the primary bus  
Other PCI Devices: No other PCI devices active

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	<b>PI7C8150A</b>	<b>Intel 21150</b>
LAN Card 1	91 Mb/s	78 Mb/s
LAN Card 2	65 Mb/s	34 Mb/s
LAN Card 3	92 Mb/s	65 Mb/s
LAN Card 4	90 Mb/s	66 Mb/s

**TEST CASE 3**

Motherboard: Tyan S2720  
Chipset: Intel E7500DDR  
Processor: Intel Xeon 1.8GHz with 266MHz Front Side Bus  
Memory: 256MB 266DDR SDRAM  
Video: On-board AGP device  
Other PCI Devices: No other PCI devices active

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	PI7C8150A	PI7C8150
LAN Card 1	81 Mb/s	23 Mb/s
LAN Card 2	79 Mb/s	26 Mb/s
LAN Card 3	54 Mb/s	15 Mb/s
LAN Card 4	87 Mb/s	23 Mb/s

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**TEST CASE 4**

Motherboard: ASUS P4G8X  
Chipset: Intel E7205  
Processor: Intel Pentium 4 1.8GHz with 533/400MHz Front Side Bus  
Memory: 256MB PC2100 DDR  
Video: PCI add-in card  
Other PCI Devices: No other PCI devices active

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	PI7C8150A	PI7C8150
LAN Card 1	17 Mb/s	12 Mb/s
LAN Card 2	25 Mb/s	15 Mb/s
LAN Card 3	17 Mb/s	12 Mb/s
LAN Card 4	24 Mb/s	15 Mb/s