

**FEATURE COMPARISON: PI7C8148B vs. PLX PCI6152**

**Features:**

Feature	Pericom PI7C8148B	PLX PCI6152
<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 Architecture Specification</i></li> <li>▪ 3.3V and 5V signaling environments</li> <li>▪ 66MHz capable</li> <li>▪ Asynchronous Mode support</li> <li>▪ Concurrent primary and secondary bus operations</li> </ul>	Revision 2.2 Revision 1.1 yes  yes yes yes	Revision 2.1 Revision 1.1 no (3.3V w/5V tolerance)  yes no yes
<b><u>Memory Buffer Architecture</u></b> <ul style="list-style-type: none"> <li>▪ <i>Dynamic Prefetching Control</i></li> </ul>	yes	no
<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 4 external masters</li> </ul>	yes	yes
<b><u>IEEE 1149.1 JTAG port</u></b> <ul style="list-style-type: none"> <li>▪ Available boundary scan testing</li> </ul>	no	no
<b><u>Compact PCI Hot Swap</u></b> <ul style="list-style-type: none"> <li>▪ Hot Swap Friendly Support</li> </ul>	yes	yes
<b><u>Packaging</u></b> <ul style="list-style-type: none"> <li>▪ 160-pin PBGA</li> <li>▪ Extended commercial temp range: 0°C to 85°C</li> </ul>	yes yes	yes no (0°C to 70°C)

**Pin differences (160-pin PBGA):**

pin number	Pericom PI7C8148B	PLX PCI6152
N7	SCAN_EN	NAND_O
P7	SCAN_TM#	GOZ_L

SCAN\_TM# (P7) should be pulled HIGH for normal operation (same as the PLX solution).  
SCAN\_EN (N7) becomes an output when SCAN\_TM# is pulled HIGH.

**Register differences:**

	Pericom PI7C8148B	PLX PCI6152
Vendor ID	12D8h	3388h
Device ID	8140h	0021h

**PERFORMANCE COMPARISON: PI7C8148B vs. PLX PCI6152**

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: SuperMicro P3TDLE  
Chipset: ServerWorks ServerSet III LE  
Processor: Intel PIII 800  
Memory: 512MB  
Video: S3 TrioV64/DX  
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	Pericom PI7C8148B	PLX PCI6152
LAN Card 1	42.61 – 46.99 Mb/s	19.84 – 22.07 Mb/s
LAN Card 2	84.33 – 89.14 Mb/s	66.17 – 70.66 Mb/s
LAN Card 3	46.19 – 48.12 Mb/s	18.70 – 22.14 Mb/s
LAN Card 4	84.81 – 89.01 Mb/s	67.14 – 70.40 Mb/s

**TEST CASE 2**

Motherboard: MSI GNB Max  
Chipset: Intel E7205  
Processor: Intel P4 2.4GHz  
Memory: 256MB  
Video: nVidia GeForce 2 MX-400  
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	Pericom PI7C8148B	PLX PCI6152
LAN Card 1	27.16 – 31.30 Mb/s	21.50 – 28.55 Mb/s
LAN Card 2	26.70 – 32.78 Mb/s	23.02 – 28.29 Mb/s
LAN Card 3	27.54 – 32.18 Mb/s	22.05 – 27.61 Mb/s
LAN Card 4	27.63 – 32.13 Mb/s	23.09 – 27.05 Mb/s