

FEATURE COMPARISON: PI7C8150A vs. PLX PCI6150

Features:

| Feature | Pericom PI7C8150A | PLX PCI6150 |
|--|---|--|
| <u>Interfaces</u> <ul style="list-style-type: none"> ▪ Complies with the following specifications: <i>PCI Local Bus Specification</i> ▪ 3.3V and 5V signaling environments ▪ Concurrent primary and secondary bus operations | Revision 2.2 yes yes | Revision 2.3 no (3.3V w/5V tolerance) yes |
| <u>Memory Buffer Architecture</u> <ul style="list-style-type: none"> ▪ <i>Dynamic Prefetching Control</i> ▪ Upstream posted write buffer ▪ Downstream posted write buffer ▪ Upstream read data buffer ▪ Downstream read data buffer | yes 128 bytes 128 bytes 256 bytes 256 bytes | no 256 bytes 256 bytes 256 bytes 256 bytes |
| <u>Bus Arbitration</u> <ul style="list-style-type: none"> ▪ Programmable internal arbiter for the secondary bus with support for up to 9 external masters ▪ Disable control for use of an external arbiter | yes yes | yes yes |
| <u>IEEE 1149.1 JTAG port</u> <ul style="list-style-type: none"> ▪ Available boundary scan testing | yes | yes |
| <u>Compact PCI Hot Swap</u> <ul style="list-style-type: none"> ▪ Hot Swap Friendly Support | no | yes |
| <u>Packaging</u> <ul style="list-style-type: none"> ▪ 208-pin QFP ▪ 256-pin PBGA ▪ Extended commercial temp range: 0°C to 85°C | yes yes yes | yes yes no (0°C to 70°C) |

Pin differences (208-pin QFP):

| pin number | Pericom PI7C8150A | PLX PCI6150 |
|------------|-------------------|-------------|
| 51 | VDD | OSC SEL# |
| 54 | VSS | OSC IN |
| 103 | VDD | EE EN# |
| 106 | MS1 | EJECT EN# |
| 125 | CFG66/SCAN EN | CFG66 |
| 127 | RESERVED | PIN ENUM# |
| 128 | RESERVED | PIN LED |
| 151 | VDD | RESERVED |
| 155 | MS0 | GPIO3FN# |
| 158 | VSS | EEPCLK |
| 160 | VSS | EEPD |

Register differences:

| | Pericom PI7C8150A | PLX PCI6150 |
|-----------|-------------------|-------------|
| Vendor ID | 12D8h | 3388h |
| Device ID | 8150h | 0022h |

PERFORMANCE COMPARISON: PI7C8150A vs. PLX PCI6150

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 | Pericom PI7C8150A | PLX PCI6150 |
|-------------|-------------------|-------------|
| LAN Card 1 | 52 Mb/s | 22 Mb/s |
| LAN Card 2 | 93 Mb/s | 68 Mb/s |
| LAN Card 3 | 46 Mb/s | 24 Mb/s |
| LAN Card 4 | 90 Mb/s | 65 Mb/s |

TEST CASE 2

Motherboard: Tyan S2466
Chipset: AMD 766DDR
Processor: 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 | Pericom PI7C8150A | PLX PCI6150 |
|-------------|-------------------|-------------|
| LAN Card 1 | 91 Mb/s | 74 Mb/s |
| LAN Card 2 | 65 Mb/s | 29 Mb/s |
| LAN Card 3 | 92 Mb/s | 78 Mb/s |
| LAN Card 4 | 90 Mb/s | 74 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 | Pericom PI7C8150A | PLX PCI6150 |
|-------------|--------------------------|--------------------|
| LAN Card 1 | 81 Mb/s | 37 Mb/s |
| LAN Card 2 | 79 Mb/s | 37 Mb/s |
| LAN Card 3 | 54 Mb/s | 15 Mb/s |
| LAN Card 4 | 87 Mb/s | 43 Mb/s |

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 | PLX PCI6150 |
|-------------|------------------|--------------------|
| LAN Card 1 | 17 Mb/s | 13 Mb/s |
| LAN Card 2 | 25 Mb/s | 19 Mb/s |
| LAN Card 3 | 17 Mb/s | 14 Mb/s |
| LAN Card 4 | 24 Mb/s | 17 Mb/s |