

FEATURE COMPARISON: PI7C8154B vs. PLX PCI6154B

Features:

Feature	Pericom PI7C8154B	PLX PCI6154
<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 512 bytes 512 bytes 1024 bytes 1024 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	no
<u>Other Features</u> <ul style="list-style-type: none"> ▪ Serial EEPROM support ▪ 80MHz operation on secondary bus ▪ Asynchronous mode operation support 	yes yes yes	yes no yes
<u>Packaging</u> <ul style="list-style-type: none"> ▪ 304-pin PBGA ▪ Extended commercial temp range: 0°C to 85°C 	yes yes	yes no (0°C to 70°C)

Pin differences (304-pin PBGA):

pin number	Pericom PI7C8154B	PLX PCI6154
D11	PMEENA#	VDD

Register differences:

	Pericom PI7C8154B	PLX PCI6154
Vendor ID	12D8h	3388h
Device ID	8154h	0020h

PERFORMANCE COMPARISON: PI7C8154B vs. PLX PCI6154

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-760 MP
Processor: AMD Athlon 1.8GHz
Memory: 512MB PC266 DDR SDRAM
Video: Radeon 7000 AGP Video
Other PCI Devices: NA

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 PI7C8154B	PLX PCI6154
LAN Card 1	99 Mb/s	70 Mb/s
LAN Card 2	99 Mb/s	28 Mb/s
LAN Card 3	99 Mb/s	77 Mb/s
LAN Card 4	99 Mb/s	76 Mb/s

TEST CASE 2

Motherboard: Tyan S2721
Chipset: Intel E7501
Processor: Intel Xeon 1.8GHz with 533/400MHz Front Side Bus
Memory: 512MB PC266 DDR SDRAM
Video: Integrated ATI Rage XL Graphics Controller
Other PCI Devices: NA

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 PI7C8154B	PLX PCI6154
LAN Card 1	28 Mb/s	37 Mb/s
LAN Card 2	49 Mb/s	33 Mb/s
LAN Card 3	48 Mb/s	32 Mb/s
LAN Card 4	46 Mb/s	15 Mb/s

TEST CASE 3

Motherboard: Super Micro P4DPE-G2
Chipset: Intel E7500
Processor: Intel Xeon 1.8GHz with 400MHz Front Side Bus
Memory: 512MB PC266 DDR SDRAM
Video: Integrated ATI Rage XL Graphics Controller
Other PCI Devices: NA

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 PI7C8154B	PLX PCI6154
LAN Card 1	99 Mb/s	96 Mb/s
LAN Card 2	99 Mb/s	50 Mb/s
LAN Card 3	99 Mb/s	98 Mb/s
LAN Card 4	99 Mb/s	56Mb/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: Radeon 7000 AGP Video
Other PCI Devices: NA

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	PI7C8154B	PLX PCI6154
LAN Card 1	97 Mb/s	80 Mb/s
LAN Card 2	90 Mb/s	58 Mb/s
LAN Card 3	98 Mb/s	89 Mb/s
LAN Card 4	98 Mb/s	83 Mb/s