FEATURE COMPARISON: PI7C8140A vs. PLX PCI6140

Features:

Feature	Pericom PI7C8140A	PLX PCI6140
Interfaces ▪ Complies with the following specifications: *PCI Local Bus Specification* *PCI-to-PCI Bridge Architecture Specification* ▪ 3.3V and 5V signaling environments ▪ 66MHz capable ▪ Concurrent primary and secondary bus operations	 Revision 2.2 Revision 1.1 yes yes yes	 Revision 2.1 Revision 1.1 no (3.3V w/5V tolerance) no yes
Memory Buffer Architecture ▪ *Dynamic Prefetching Control*	yes	no
Bus Arbitration ▪ Programmable internal arbiter for the secondary bus with support for up to 4 external masters	yes	yes
IEEE 1149.1 JTAG port ▪ Available boundary scan testing	no	no
Compact PCI Hot Swap ▪ Hot Swap Friendly Support	yes	yes
Packaging ▪ 128-pin QFP ▪ Extended commercial temp range: 0°C to 85°C	 yes yes	 yes no (0°C to 70°C)

Pin differences (128-pin QFP):

pin number	Pericom PI7C8140A	PLX PCI6140
65	SCAN_TM#	No Connect
106	SCAN_EN	S_IDEN (reserved)

Register differences:

	Pericom PI7C8140A	PLX PCI6140
Vendor ID	12D8h	3388h
Device ID	8140h	0021h

PERFORMANCE COMPARISON: PI7C8140A vs. PLX PCI6140

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 S2721-533 v1.02
Chipset:	Intel E7501 server
Processor:	Intel Xeon 2.4GHz
Memory:	512MB DDR2100
Video:	Onboard video
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 PI7C8140A	PLX PCI6140
LAN Card 1	35.81 – 38.45 Mb/s	10.96 – 12.16 Mb/s
LAN Card 2	33.30 – 38.30 Mb/s	10.05 – 13.95 Mb/s
LAN Card 3	18.10 – 20.70 Mb/s	3.50 – 5.40 Mb/s
LAN Card 4	33.83 – 36.60 Mb/s	9.81 – 15.74 Mb/s

TEST CASE 2

Motherboard:	SuperMicro P3TDLE
Chipset:	ServerWorks ServerSet III LE
Processor:	Intel P III 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 PI7C8140A	PLX PCI6140
LAN Card 1	47.09 – 50.01 Mb/s	15.66 – 19.63 Mb/s
LAN Card 2	83.73 – 85.99 Mb/s	64.02 – 69.17 Mb/s
LAN Card 3	46.85 – 49.45 Mb/s	13.82 – 16.73 Mb/s
LAN Card 4	82.69 – 87.00 Mb/s	59.90 – 63.57 Mb/s

TEST CASE 3

Motherboard:	MSI GNB Max
Chipset:	Intel E7205
Processor:	Intel P4 2.4GHz
Memory:	256MB DDR266
Video:	nVidia GeForce 2 MX-400 w 64MB, AGP4X
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 PI7C8140A	PLX PCI6140
LAN Card 1	28.76 – 30.05 Mb/s	3.93 – 6.18 Mb/s
LAN Card 2	31.87 – 33.56 Mb/s	3.78 – 5.83 Mb/s
LAN Card 3	29.99 – 32.86 Mb/s	3.05 – 6.01 Mb/s
LAN Card 4	28.36 – 31.46 Mb/s	2.58 – 5.29 Mb/s