

FEATURE COMPARISON: PI7C8150A vs. TI PCI2050B

Features:

Feature	Pericom PI7C8150A	TI PCI2050B
<u>Interfaces</u> <ul style="list-style-type: none"> ▪ 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> ▪ 3.3V and 5V signaling environments ▪ Concurrent primary and secondary bus operations 	Revision 2.2 Revision 1.1 Revision 1.0 yes yes	Revision 2.2 Revision 1.1 Revision 1.0 yes yes
<u>Memory Buffer Architecture</u> <ul style="list-style-type: none"> ▪ <i>Dynamic Prefetching Control</i> ▪ Independent read and write buffers in each direction ▪ Number of delayed transactions in both directions 	yes yes 4	no yes 3
<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 (when MS0 and MS1 are both 0)
<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 no (257-pin) no (0°C to 70°C)

Pin differences (208-pin QFP):

pin number	Pericom PI7C8150A	TI PCI2050B
24	GPIO[3]	HS_SWITCH/GPIO[3]
125	CFG66/SCAN_EN_H	CFG66
127	RESERVED	HS_ENUM
128	RESERVED	HS_LED

Register differences:

	Pericom PI7C8150A	TI PCI2050B
Vendor ID	12D8h	104Ch
Device ID	8150h	AC28h

PERFORMANCE COMPARISON: PI7C8150A vs. TI PCI2050B

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: 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	TI PCI2050B
LAN Card 1	52 Mb/s	33 Mb/s
LAN Card 2	93 Mb/s	70 Mb/s
LAN Card 3	46 Mb/s	33 Mb/s
LAN Card 4	90 Mb/s	69 Mb/s

TEST CASE 2

Motherboard: Tyan S2466
Chipset: AMD 766DDR
Processor: Athlon 1.8GHz with 266MHz Front Side Bus
Memory: 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	TI PCI2050B
LAN Card 1	91 Mb/s	78 Mb/s
LAN Card 2	65 Mb/s	55 Mb/s
LAN Card 3	92 Mb/s	82 Mb/s
LAN Card 4	90 Mb/s	83 Mb/s