

**FEATURE COMPARISON: PI7C8154B vs. INTEL 21154**

**Features:**

Feature	Pericom PI7C8154B	INTEL 21154
<b><u>Interfaces</u></b> <ul style="list-style-type: none"> <li>▪ Complies with the following specifications:  <i>PCI Local Bus Specification</i></li> <li>▪ 3.3V and 5V signaling environments</li> <li>▪ Concurrent primary and secondary bus operations</li> </ul>	Revision 2.2 yes yes	Revision 2.3 yes yes
<b><u>Memory Buffer Architecture</u></b> <ul style="list-style-type: none"> <li>▪ <i>Dynamic Prefetching Control</i></li> <li>▪ Upstream posted write buffer</li> <li>▪ Downstream posted write buffer</li> <li>▪ Upstream read data buffer</li> <li>▪ Downstream read data buffer</li> </ul>	yes 512 bytes 512 bytes 1024 bytes 1024 bytes	no 152 bytes 88 bytes 152 bytes 72 bytes
<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 9 external masters</li> <li>▪ Disable control for use of an external arbiter</li> </ul>	yes yes	yes yes
<b><u>IEEE 1149.1 JTAG port</u></b> <ul style="list-style-type: none"> <li>▪ Available boundary scan testing</li> </ul>	yes	yes
<b><u>Compact PCI Hot Swap</u></b> <ul style="list-style-type: none"> <li>▪ Hot Swap Friendly Support</li> </ul>	no	no
<b><u>Other Features</u></b> <ul style="list-style-type: none"> <li>▪ Serial EEPROM support</li> <li>▪ 80MHz operation on secondary bus</li> <li>▪ Asynchronous mode operation support</li> </ul>	yes yes yes	no no no
<b><u>Packaging</u></b> <ul style="list-style-type: none"> <li>▪ 304-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 (304-pin PBGA):**

pin number	Pericom PI7C8154B	INTEL 21154
D11	PMEENA#	VDD
A22	EEDATA	VDD
A23	EECLK	VSS
AC22	EE_EN#	VDD
B6	NC	VDD
AA22	NC	VSS
AB1	ASYNC_SEL#	VDD
AB2	ASYNC_CLKIN	VSS

**Register differences:**

	Pericom PI7C8154B	INTEL 21154
Vendor ID	12D8h	8086h
Device ID	8154h	B154h

**PERFORMANCE COMPARISON: PI7C8154B vs. INTEL 21154**

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	INTEL 21154
LAN Card 1	99 Mb/s	95 Mb/s
LAN Card 2	99 Mb/s	60 Mb/s
LAN Card 3	99 Mb/s	97 Mb/s
LAN Card 4	99 Mb/s	96 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	INTEL 21154
LAN Card 1	28 Mb/s	25 Mb/s
LAN Card 2	49 Mb/s	49 Mb/s
LAN Card 3	48 Mb/s	46 Mb/s
LAN Card 4	46 Mb/s	47 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	<b>Pericom PI7C8154B</b>	<b>INTEL 21154</b>
LAN Card 1	99 Mb/s	93 Mb/s
LAN Card 2	99 Mb/s	79 Mb/s
LAN Card 3	99 Mb/s	93 Mb/s
LAN Card 4	99 Mb/s	78 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: 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	<b>PI7C8154B</b>	<b>INTEL 21154</b>
LAN Card 1	97 Mb/s	90 Mb/s
LAN Card 2	90 Mb/s	67 Mb/s
LAN Card 3	98 Mb/s	93 Mb/s
LAN Card 4	98 Mb/s	91 Mb/s