

FEATURES & BENEFITS

- Compliant with PCI Express 1.0, 2.0 and 3.0 specifications
- Wide variety of interposers designed to help accurately capture PCIe data traffic at all line rates including 8 GT/s, 5 GT/s and 2.5 GT/s
- Interposers offered include: slot, (adapter cards), M.2 and SFF-8639 interposers
- “Passive” tapping to avoid masking, hiding or “cleaning up” electrical and/or link issues
- User set-able jumpers to change long, short and gains values

ADVANTAGES

- Adaptive slot interposers that can operate at various bus widths -- providing significant overall solution cost savings; a SerialTek x8 slot interposer can operate at x1, x2, x4 and x8 with card reducer edge adapters. Similarly a x4 can operate at x1, x2 and x4
- Low-cost, flexible, high performance cabling for reliable analyzer to interposer connections provides real cost advantages over competing solutions that use cumbersome, bulky and expensive iPass-type cabling
- Scope output option on Slot Interposers allow for simple interoperability with high speed oscilloscopes

SerialTek provides two market-leading PCI Express® (PCIe®) (see figures 2 and 3 on page 2) analysis solutions, the BusXpert PRO and the BusXpert Micro, for the design and test of products that integrate PCIe technology; this includes host bus storage adapters, computer systems, servers and storage products.

A wide range of cost-effective and flexible probing options are available for BusXpert Analyzer users. These interposer solutions are designed to provide maximum performance and flexibility when capturing PCI Express communication data between hosts and devices; they include slot (see figure 1), M.2 and SFF-8639 interposers.

Cost-effective, reliable and high performance SFF-8644 cables are used to connect a interposer to the SerialTek PCIe Analyzer. These cables are rated at 12 Gb/s making them a suitable interconnect for PCIe analysis; yet unlike some other high speed cables, SFF-8644 cables are easier to handle and easier to use. One competing solution utilize very bulky, expensive and hand-built iPass-type cabling. Such cables can cost upwards of several thousands of dollars to purchase and replace. SerialTek's PCIe cabling technologies are far more reliable and cost substantially less. Be sure to factor this into your decision making when you are calculating the total cost of ownership of your complete analysis solution.

All SerialTek interposers are compliant with the PCI Express 1.0, 2.0 and 3.0 specifications; they are rated for 8 GT/s yet they also inter-operate at lower data rates. This contrast largely with competing solutions that offer a confusing and bewildering number of slot interposer options -- some rated for 2.0 and others 3.0 -- some passive and others active.

For its slot interposers, SerialTek provides an industry first -- offering optional scope outputs on all varieties (x1, x4 or x8) of the slot interposers. These output connectors permit a high speed oscilloscope to connect directly to the SerialTek slot interposer to gain access to the PCIe traffic between the host and device. This operation is completely transparent to the BusXpert PCIe protocol analyzer. No other solution in the marketplace offer such a capability.

The slot interposers are also adaptive and can operate at various bus widths with the appropriate card reducer edge adapters. Competing solutions force their users to purchase interposers in the exact card slot width. Thus if an engineer needed to perform x1, x4 and x8 analysis, she or he would need to



Figure 1: Gen 3 x8 Slot Interposer



Figure 2 (Left): BusXpert Micro PCI Express Gen 3 Protocol Analyzer



Figure 3 (Bottom): BusXpert PRO PCI Express Gen 3 Protocol Analyzer

purchase three different slot interposers. The SerialTek slot interposers work at different bus widths providing significant overall solution cost savings. A typical setup is shown in figure 4.

SerialTek interposers also “passively” tap into the PCI Express bus -- communication data is not re-timed. Active Gen 3 slot interposer solutions, such as those from competing products are simpler to develop and manufacture; such interposers retransmit and re-time PCIe traffic that they are probing. This potentially may hide, correct and/or mask electrical and link issues and problems from users.

User selectable jumpers allow user control of various electrical parameters including ISE long, short and gain to compensate for connector and electrical trace induced signal integrity issues. On the rare occasion when the BusXpert analyzer is experiencing link up challenges, manipulating the jumper settings can often resolves them. Furthermore these electrical parameters can be changeable also from the calibration menu in the BusXpert software. This is a capability unique to SerialTek PCIe slot interposers and not available on competing products.

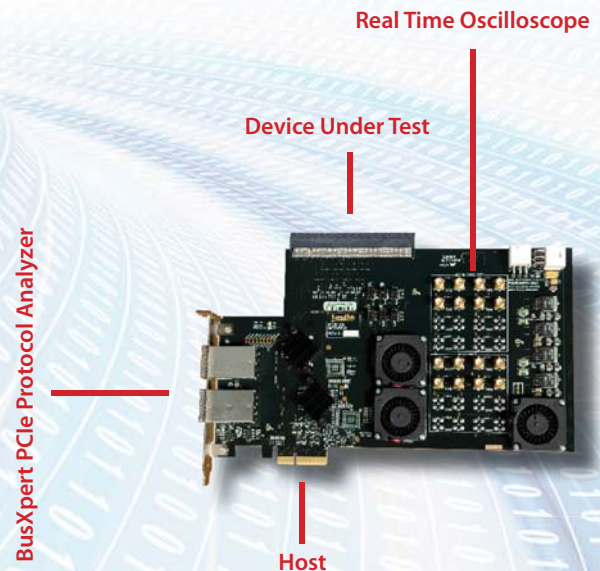


Figure 4: Typical Slot Interposer Setup

Interposer Specifications

x1 Slot Interposer



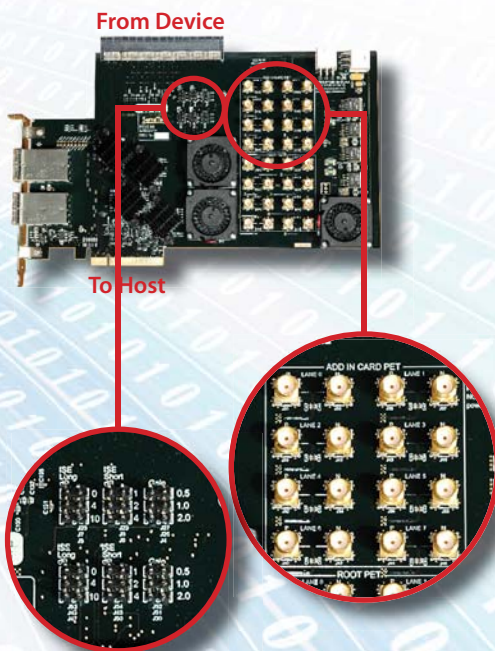
Model Numbers	Int-PCI-8x1 (w/o scope outputs), Int-PCI-8x1-S (w/ scope outputs)
Specification Compliancy	PCIe 1.0, 2.0 and 3.0
Data Rates Supported	2.5, 5.0 and 8 GT/s
Width Supported	x1
Analyzer Connector	2 SFF-8644 (SerialTek proprietary cabling) ¹
Impedance (Differential)	95 Ohms (+/- 5%)
Jumpers	ISE Long dB, ISE Short dB, Gain (two sets - host and device)
Power	12V DC External ²
Dimensions	10.125" (length) x 6.5" (height) / 25.72 cms x 16.5 cms
Weight	9.125 ozs / 269 grams

x4 Slot Interposer



Model Numbers	Int-PCI-8x4 (w/o scope outputs), Int-PCI-8x4-S (w/ scope outputs)
Specification Compliancy	PCIe 1.0, 2.0 and 3.0
Data Rates Supported	2.5, 5.0 and 8 GT/s
Width Supported	Native x4; x1 and x2 with card reducer edge adapter
Analyzer Connector	2 SFF-8644 (SerialTek proprietary cabling) ¹
Impedance (Differential)	95 Ohms (+/- 5%)
Jumpers	ISE Long dB, ISE Short dB, Gain (two sets - host and device)
Power	12V DC External ²
Dimensions	10.125" (length) x 6.5" (height) / 25.72 cms x 16.5 cms
Weight	9.125 ozs / 269 grams

x8 Slot Interposer



Model Numbers	Int-PCI-8x8 (w/o scope outputs), Int-PCI-8x8-S (w/ scope outputs)
Specification Compliancy	PCIe 1.0, 2.0 and 3.0
Data Rates Supported	2.5, 5.0 and 8 GT/s
Width Supported	Native x8, x1, x2 and x4 with card reducer edge adapter
Analyzer Connector	4 SFF-8644 (SerialTek proprietary cabling) ¹
Impedance (Differential)	95 Ohms (+/- 5%)
Jumpers (User selectable)	ISE Long dB, ISE Short dB, Gain (two sets - host and device)
Power	12V DC External ²
Dimensions	10.125" (length) x 6.5" (height) / 25.72 cms x 16.5 cms
Weight	10 ozs / 284 grams

Notes	¹ Used to connect slot interposer to analyzer; must use SerialTek supplied SFF-8644 cables ² Must use SerialTek supplied power supply
-------	--

Interposer Specifications (cont'd)

M.2		
	Model Number	Int-PCI-8M2-Kit
	Specification Compliancy	PCIe 1.0, 2.0 and 3.0
	Data Rates Supported	2.5, 5.0 and 8 GT/s
	Width Supported	up to x4
	Device/Drive Length Supported	30 mm, 42 mm, 60 mm, 80 mm
	Analyzer Connector	2 SFF-8644 (SerialTek proprietary cabling) ¹
	Impedance (Differential)	95 Ohms (+/- 5%)
	Jumpers	ISE Long dB, ISE Short dB, Gain (two sets - host and device)
	Power	12V DC External ²
	Dimensions	7 3/4" (length) x 3 5/8" (width) / 19.69 cms x 9.20 cms
	Weight	2.75 ozs / 77 grams (without extender cable)
	Notes	¹ Used to connect M.2 interposer to analyzer; Must use SerialTek supplied SFF-8644 cables ² Must use SerialTek supplied power supply

SFF-8639		
	Model Number	Int-PCI-8639-Kit
	Specification Compliancy	PCIe 1.0, 2.0 and 3.0
	Data Rates Supported	2.5, 5.0 and 8 GT/s
	Width Supported	up to x4
	Analyzer Connector	2 SFF-8644 (SerialTek proprietary cabling) ³
	Impedance (Differential)	95 Ohms (+/- 5%)
	Jumpers	SET 1: USER, SMCLK, PERST#, DIALLINKEN#, SMDATA, REF CLK-, REF CLK+, ACTIVITY, PRSNT#, WAKE#, IFDET#, PERST# SET 2: ISE Long dB, ISE Short dB, Gain (two sets - host and device)
	Power	12V DC External ⁴
	Dimensions	14" (length) ⁵ x 6.06" (width) / 35.56 cms x 15.40 cms
	Weight	10.25 ozs / 291 grams
	Notes	³ Used to connect SFF-8639 interposer to analyzer; must use SerialTek supplied SFF-8644 cables ⁴ Must use SerialTek supplied power supply ⁵ An extended version will be available shortly; it will added about 5 inches to the interposer; check with SerialTek for timing/availability



22 Great Oaks Blvd, Suite 150, San Jose, CA 95119

Phone 408-436-8080. Fax 408-436-8098

<http://www.serialtek.com>

© Copyright 2011-2014 SerialTek LLC. All rights reserved. All trademarks used in this document are the property of their respective owners. SerialTek reserves the right to change product content and product specifications without prior notice. Contact your sales consultant for the latest information.