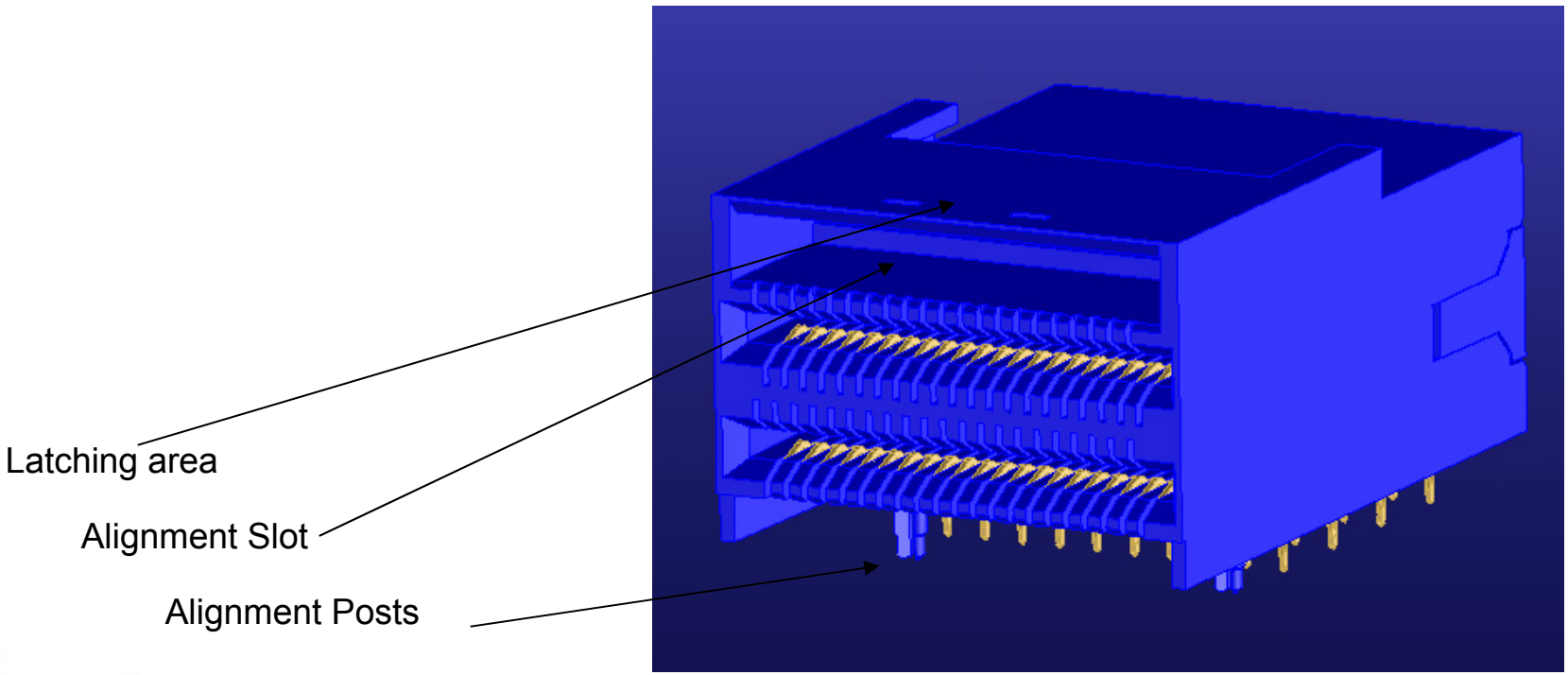
Molex Connector Proposals for SAS 2.x

March 10th, 2008 STA Meeting

Internal iPass+

Host Board Receptacle

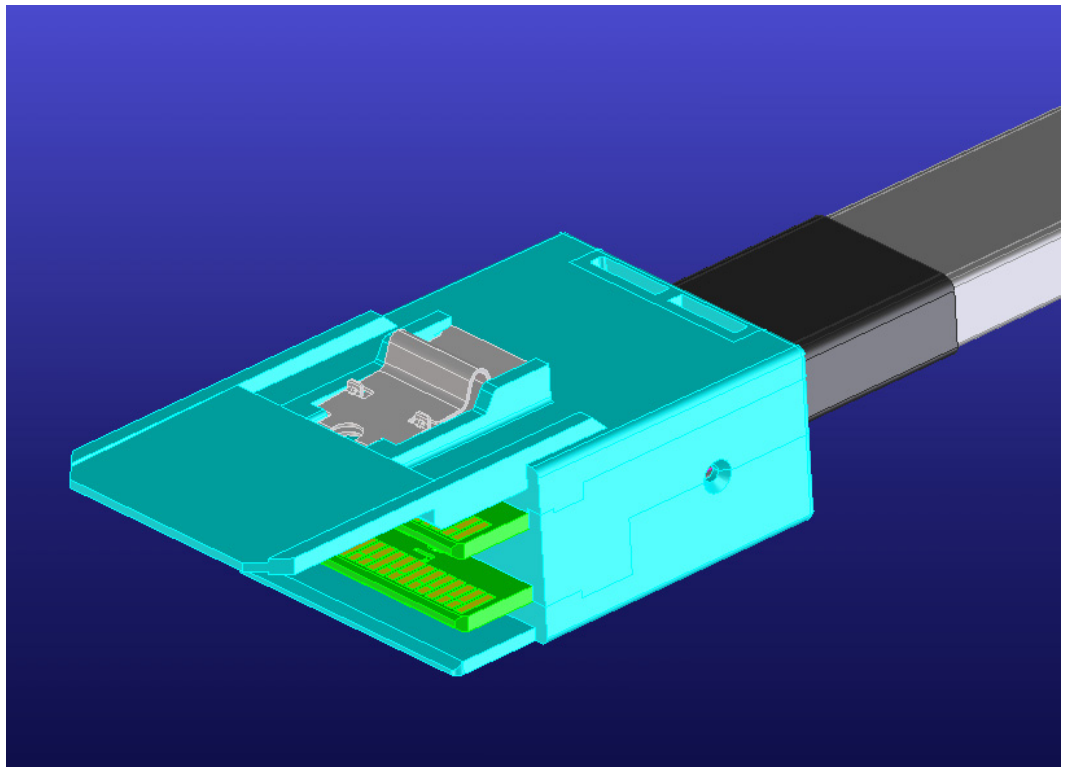
- High temp thermoplastic housing withstands lead free processing
- Compliant pin technology enables flat rock assembly to host board
- Two posts provide alignment for placement on the board
- Slot provides guidance & self-alignment of plug cable to receptacle
- Accepts dual paddle card cable
- Positive latching feature integral to housing (no hood or shell required)



Internal iPass+

Plug & Cable Assembly

- Identical latching feature used in SFF-8087 for SAS & SATA
- Over-molded design provides cost effective cable assembly solution
- Molded-in guidance feature aligns cable plug to mating host receptacle
- Dual paddle card design employed to increase density



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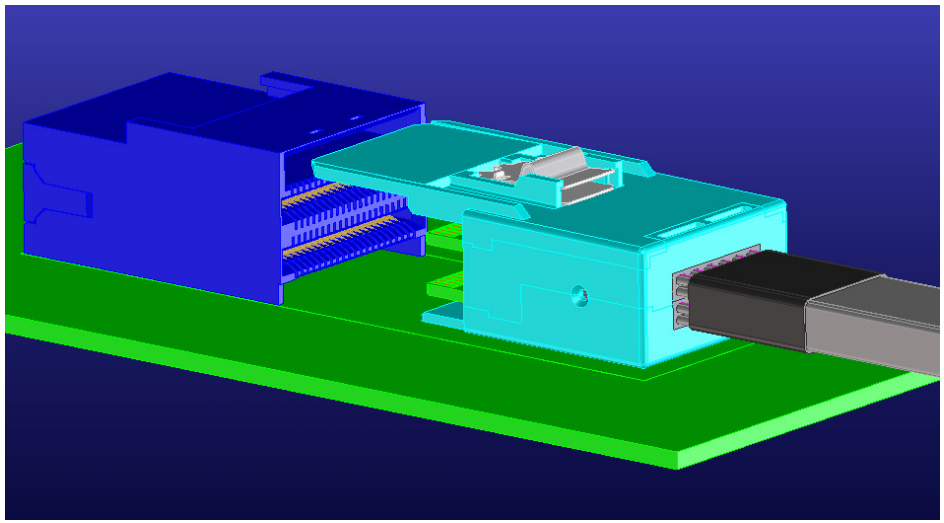
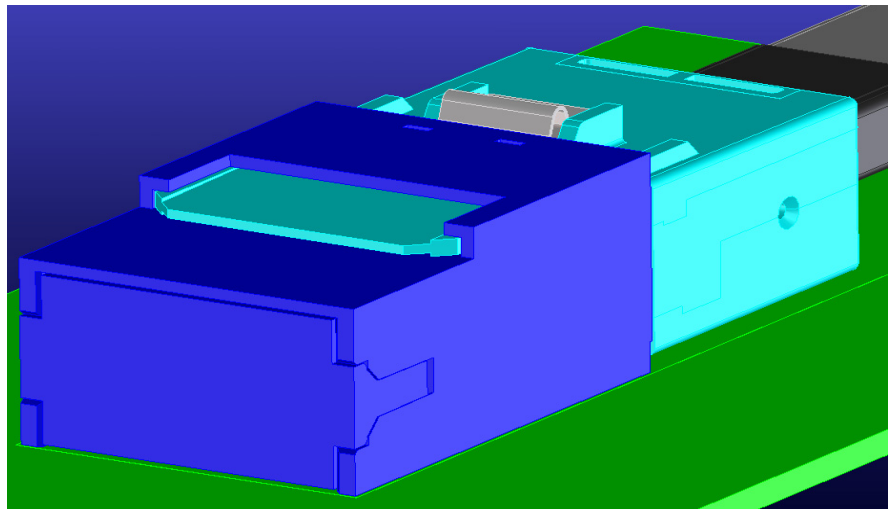
Internal iPass+

- The trend in the industry is to Low Profile PCIe cards

  - This proposal triples the density for internal SAS/SATA 4x ports
    - (2) SFF-8087 SAS 4i fit on a LP card – (2) 4x ports
    - (2) SFF-xxxx Proposed SAS 12i fit on a LP card – (6) 4x ports
      - 12x to 12x; 12x to (3) 4x; 12x to (12) HDDs; (also 8x to …)

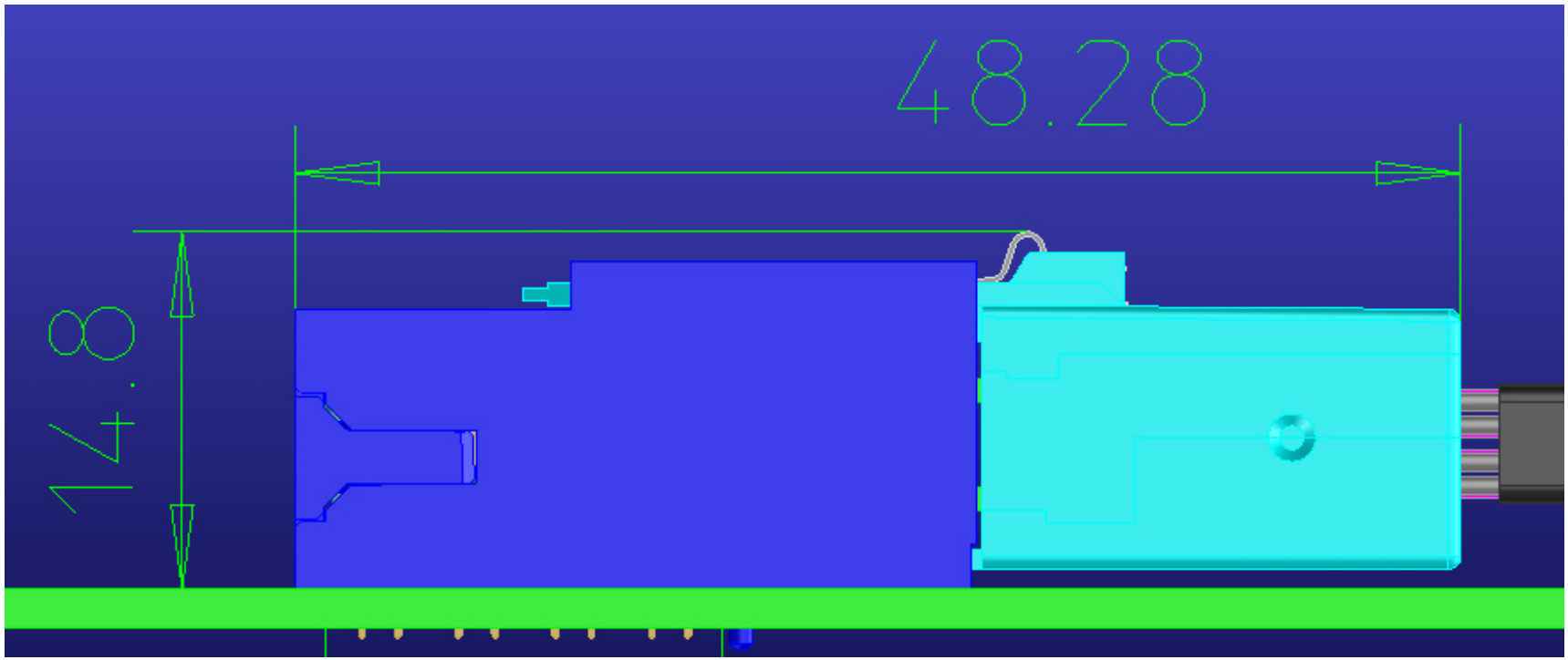
  - Provides the same latch and look & feel as the current plugs





Internal iPass+

- Fits within the maximum component height for a PCIe card



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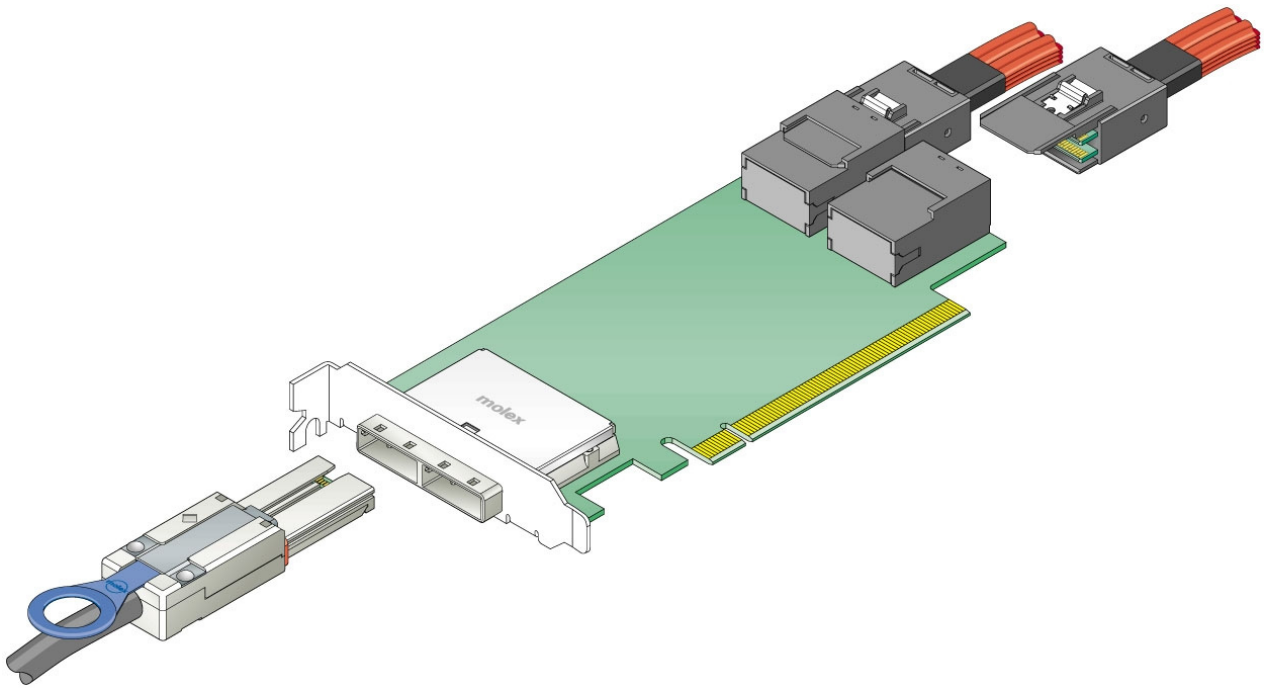
Internal iPass+

New internal cable-to-board interconnect

- 0.8mm (.031”) unshielded system
- Performance based on proven technology (6Gb/s now / 12Gb/s later)
- 84 Circuit
  - Provides 24 differential pairs in a very compact size
  - Provides 12 additional circuits for power and control signals



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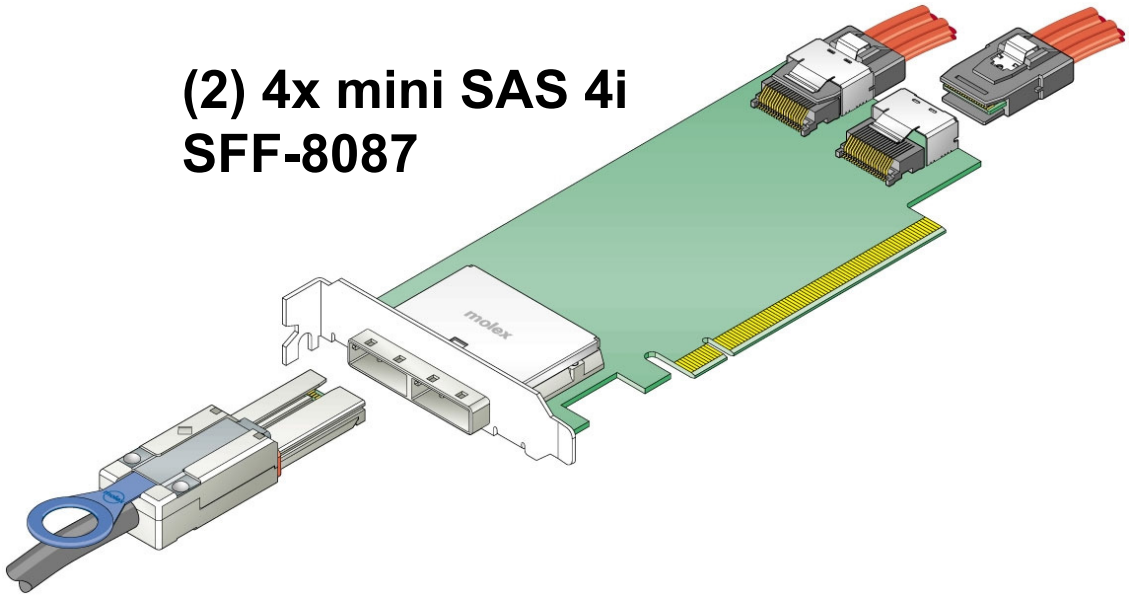
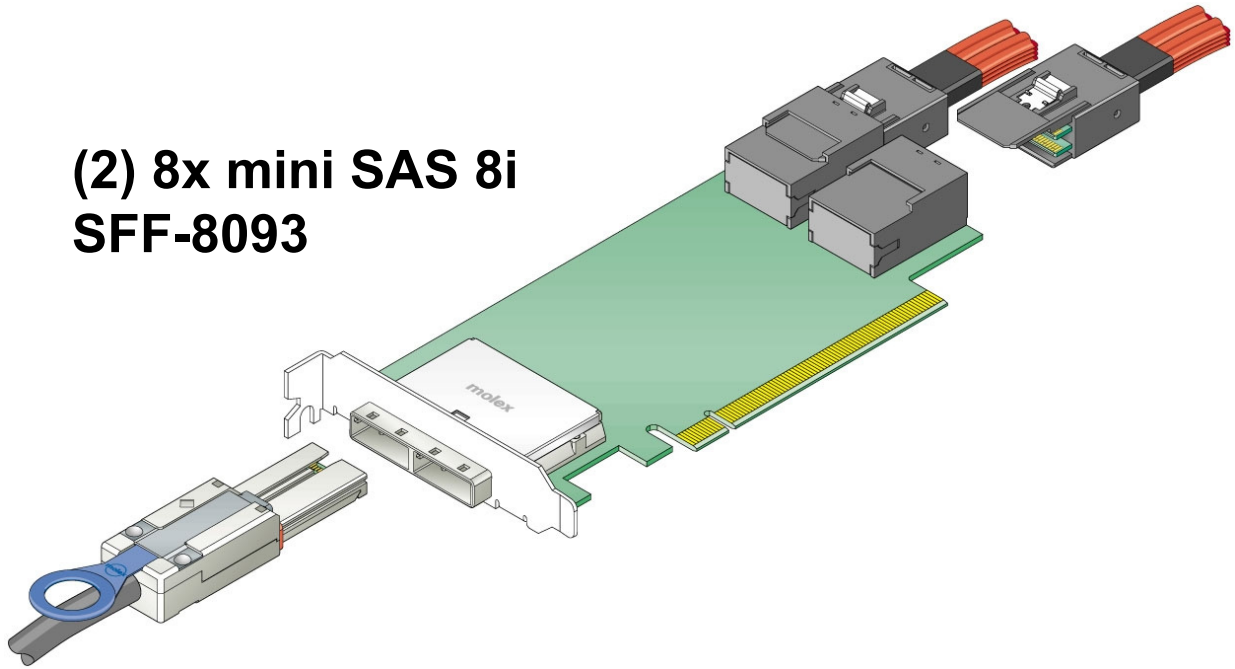
Internal SAS

(2) 4x mini SAS 4i
SFF-8087



(2) 8x mini SAS 8i
SFF-8093



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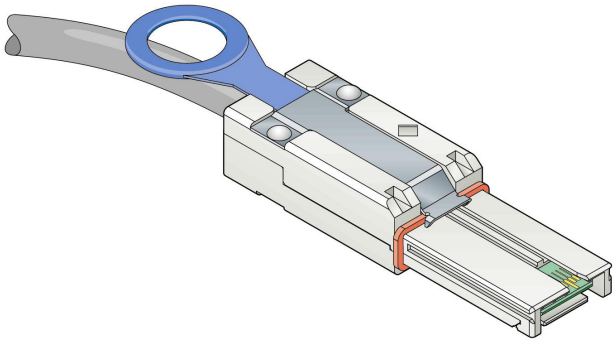
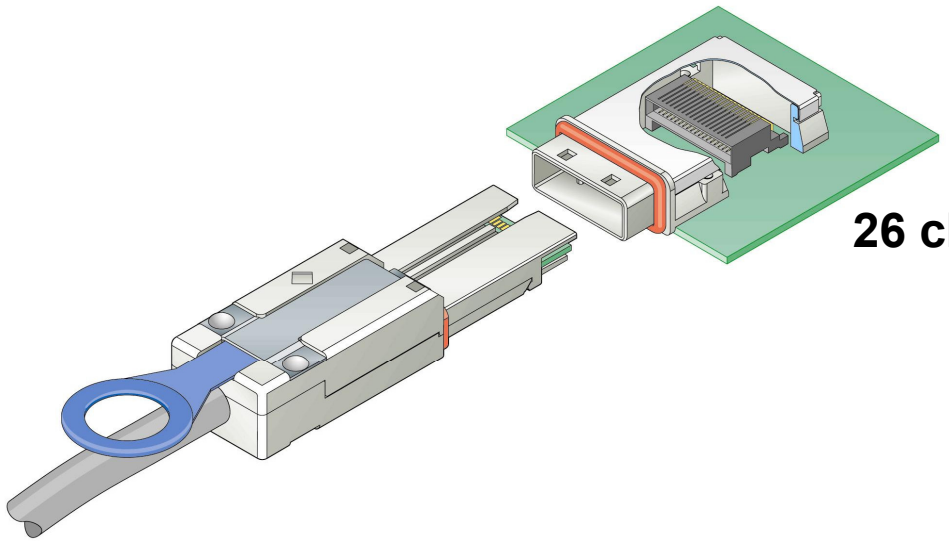
The Proposed SAS External I/O

SFF-8088 External mini-SAS 4xp

- (4) 4x on Full High PCIe Card
- (2) 4x on Low Profile PCIe Card

No Change in Port Density





26 ckt Connector

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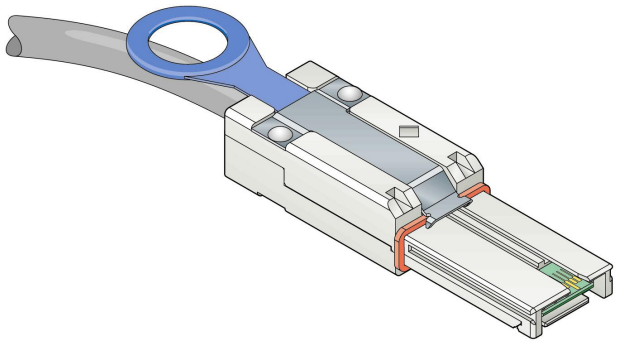
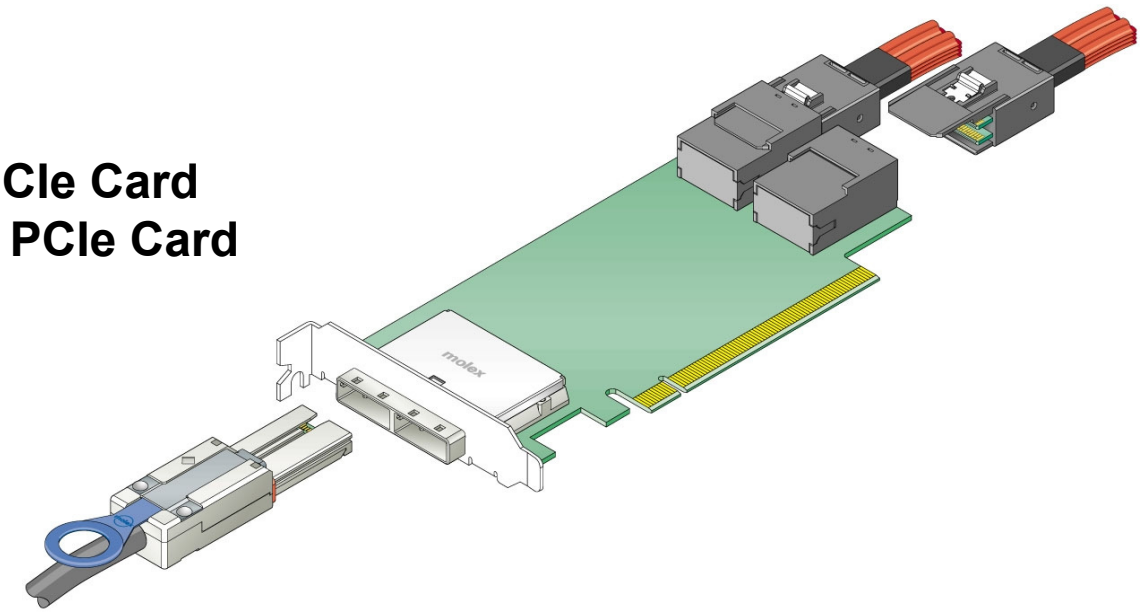
The Current SAS External I/O

SFF-8088 External mini-SAS 4x



- (4) 4x on Full High PCIe Card
- (2) 4x on Low Profile PCIe Card



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Proposal with SideBands – Host Board Connector

- Host Connector unchanged
  - Same as the current internal mini-SAS 4i connector

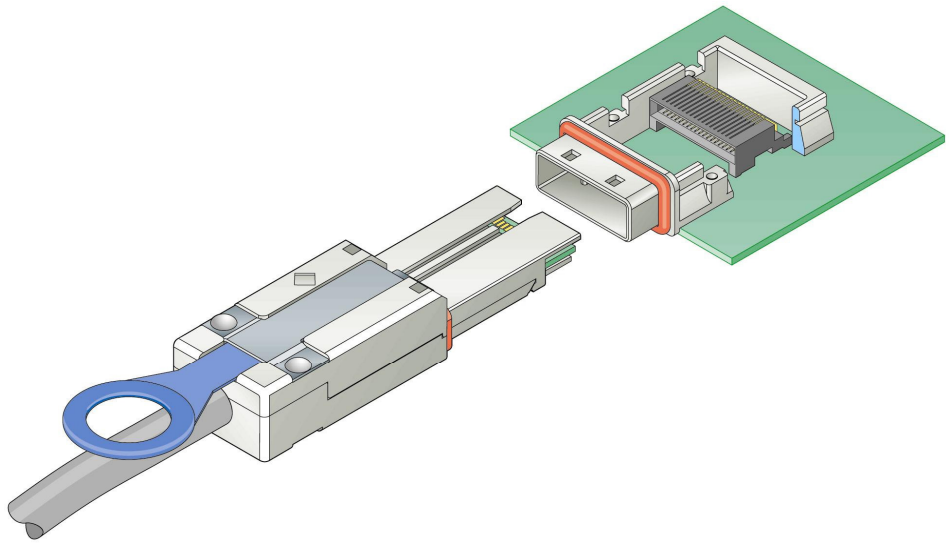
- Guide unchanged
  - Same physical exterior/density

- EMI solution unchanged

- Bezel opening unchanged

- Different pin-out

- Keying ?



External iPass+

New external cable-to-board interconnect
- 0.8mm (.031”) unshielded system
- Performance based on proven technology (6Gb/s now / 12Gb/s later)
- 84 Circuit
    - Provides 24 differential pairs in a very compact size
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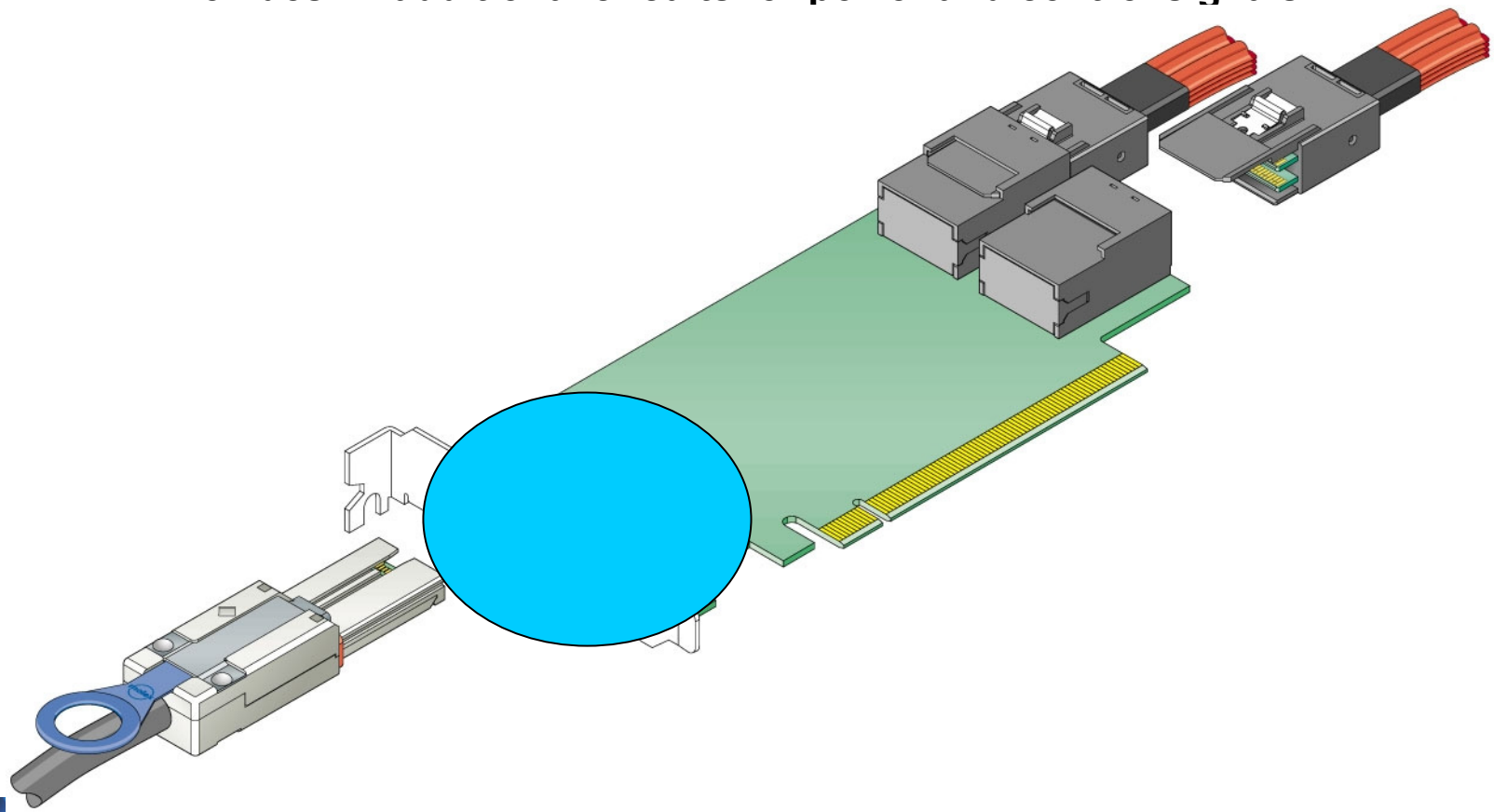

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External SAS 8x/12x

84 ckt iPass+
Production tooled & Shipping
General Market Product
6G Compliant
12G Capable

SFF-8092

FEATURES AND SPECIFICATIONS

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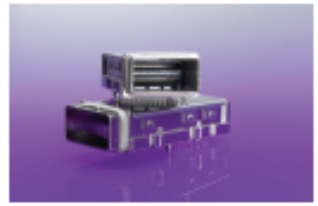
0.80mm (.031") Pitch iPass+ 84-Circuit 120 Gbps Products

76105 Integrated Connector and Cage Assembly



Molex's 84-circuit, iPass+ integrated connector and cage supports 8, 10 and 12 channels of InfiniBand® and 10 Gigabit Ethernet data for up to 120 Gbps of pluggable data in one assembly

The iPass Interconnect System offers connectors that enable flexible-speed compatibility for applications ranging from 1.0 to 10.0 Gbps, and is an ideal interconnect solution for the growing server storage market. iPass+ is the latest addition to the existing iPass product family.

The 84-circuit iPass+ connector is a derivative of the x16 iPass PCIe External Cable Standard Input/Output (I/O) connector. This 84-circuit connector enables protocols such as InfiniBand to port up to 12 channels of 2.5, 5.0 or 10 Gbps, enabling 120 Gbps of data from box-to-box. Fibre Channel can port up to 12 channels of 8.5 or 10 Gbps of data and Ethernet can port 10 Channels of 10 Gbps, enabling data rates to 100 Gbps.

Applications range from high-performance computing and storage to networking.iPass+ products are found in mainstream data centers and sub systems that require scalability, performance and reliability.

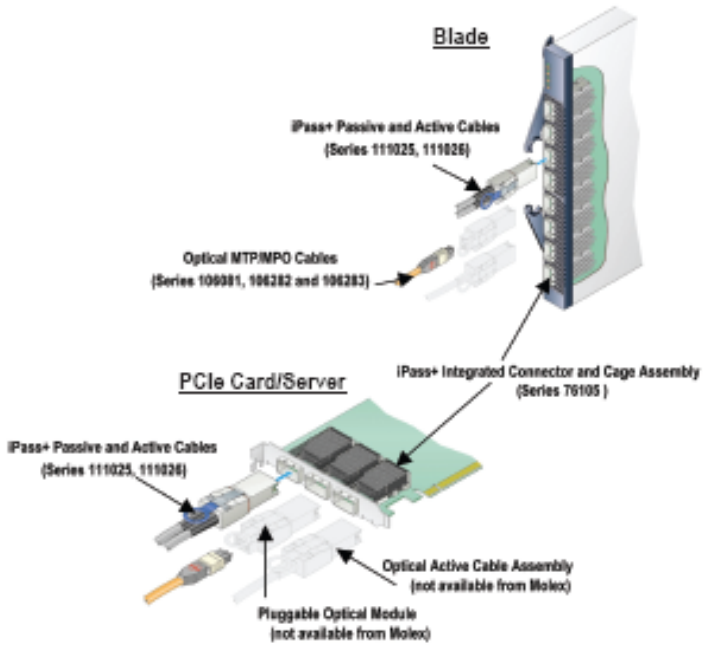
iPass+ active and passive cable assemblies will be available in volume, early 2008. At that point, the iPass+ Interconnect system will support both copper and optical mating solutions similar to Molex's existing pluggable SFP products. You may hear our product being referred to in the market as the new "QSFP" Interconnect. The name was derived from a two-fold word play on the letter "Q"; first, the Roman number for 100, indicating a form factor targeted for 100 Gbps, and secondly "Q" is the Hex character for 12, depicting the ability to provide 12 high-speed transmission channels.

For more information on iPass+ Products, visit: www.molex.com/product/ipass.html

*InfiniBand is a registered trademark of the InfiniBand Trade Association.

APPLICATIONS

- High Performance Computer Industry
  - Controller cards and servers
  - Switches
  - Direct Attached Storage (DAS)
- Data Centers
  - Controller cards and servers
  - Switches
  - Blades
  - Storage Attached Networks (SAN)
- Networking
  - NIC cards and servers
  - Switches
  - Routers
  - Network Attached Storage (NAS)



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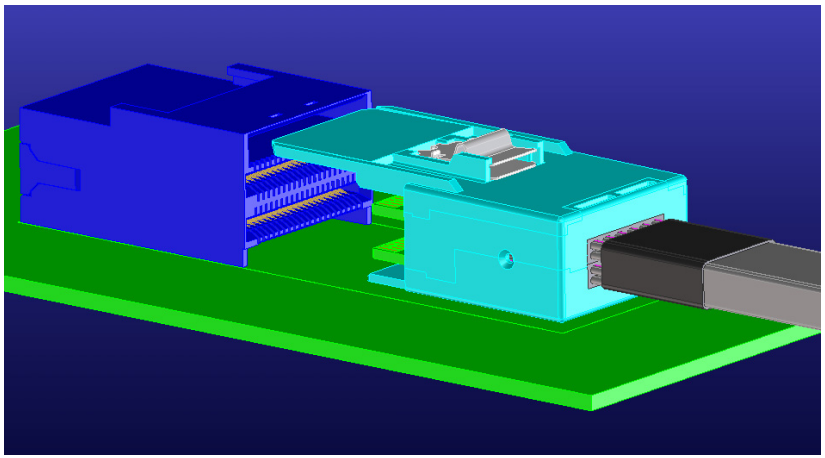
Thank You



SFF-8093

SFF-8092

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