

Amphenol

COMMUNICATIONS SOLUTIONS

Lynx™ QD

Product Presentation

April 2022



Lynx QD Product Family

Product Overview

- **Mechanical Characteristics**

- 4 row array – in a compact 2 row footprint
 - Pin count: 12 to 80 Differential pairs
- Pitch: 0.9mm across all form factors
 - 48 diff. pairs//in² and length configurable
- Integrated Shielding Design

56
Gbps
PAM4



— Coplanar

- **Electrical Characteristics**

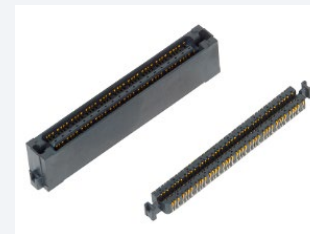
- Supports 56 Gb/s PAM4, PCIe Gen5
- Impedance: 92Ω
- Current rating: 1.5A per pin



— Right angle

- **General Product Release: Q2'19**






- 3 form factors
 - Coplanar, right angle, and vertical stacker receptacle
 - Vertical stack heights: 10mm, 40 position
 - Vertical Stacker Plugs: Based on customer demand



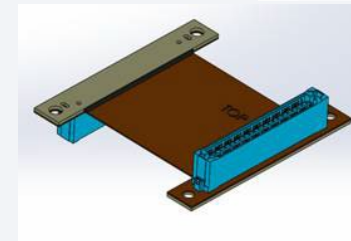
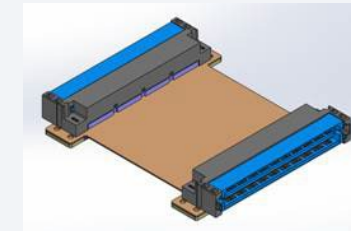
— Vertical Stacker

Lynx QD Product Family

Product Release Status

Currently Released	12 Position	20 Position	40 Position	60 Position	80 Position
Coplanar 					
Right Angle 					
Mezzanine/Stacker 	Receptacle Only	Receptacle Only	Receptacle Only	Receptacle Only	Receptacle Only

- **Flex Options – Available Now!**



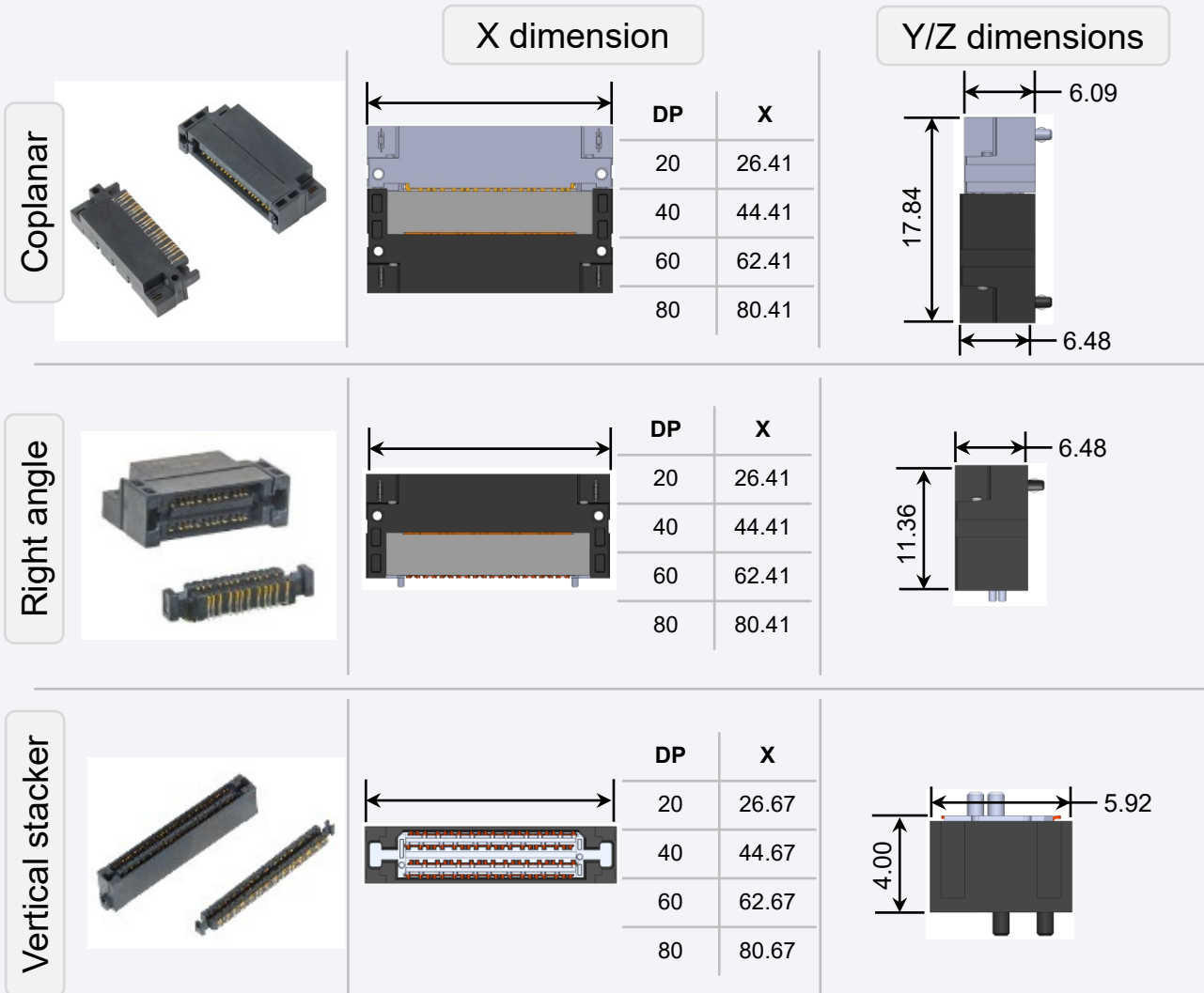
Lynx QD Product Family

Features and Benefits

Features	Benefits
<p>Signal integrity</p> <ul style="list-style-type: none">• 56G PAM4 (28G NRZ) capable• PCIe Gen 5.0 compliant	<ul style="list-style-type: none">• Connector impedance tuned for 92 Ohms• Low cross talk less than -40dB at 20 GHz• Optimized for differential signaling• Provides upgrade path for future system design
<p>Available in multiple form factors:</p> <ul style="list-style-type: none">• Coplanar, Right Angle, Vertical stacker• Highly dense connector – 4 rows• Full product family offering• Compact form factor	<ul style="list-style-type: none">• 12 to 80 differential pairs, 36 to 240 conductors• Stack heights from 4mm to 10mm (15mm in development)• Configurable length• Flexible pin assignment to support DP, SE and Power needs• Low profile design allows for improved airflow in the system
<p>Mechanical robustness</p> <ul style="list-style-type: none">• Large mechanical alignment features• Integrated guide posts• PCB alignment posts and clips (Right angle)	<ul style="list-style-type: none">• Guarantees proper alignment and mating• Allows for multi-up connector configurations• Allows for connector stability during reflow
<p>PCB</p> <ul style="list-style-type: none">• Large routing channels• Small footprint area• Same footprint across entire product family	<ul style="list-style-type: none">• Allows for routing out of connector from one side<ul style="list-style-type: none">• 2 signal layers• Reduces PCB layers• Smaller footprint increases allowable area for other components

Product specifications

Mechanicals

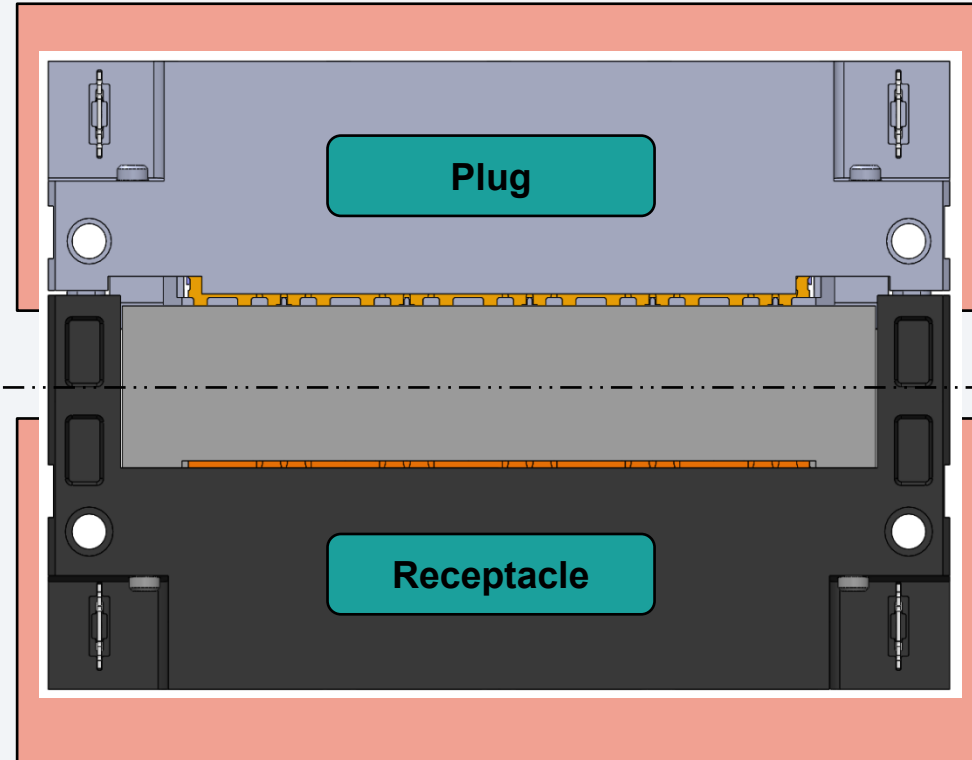
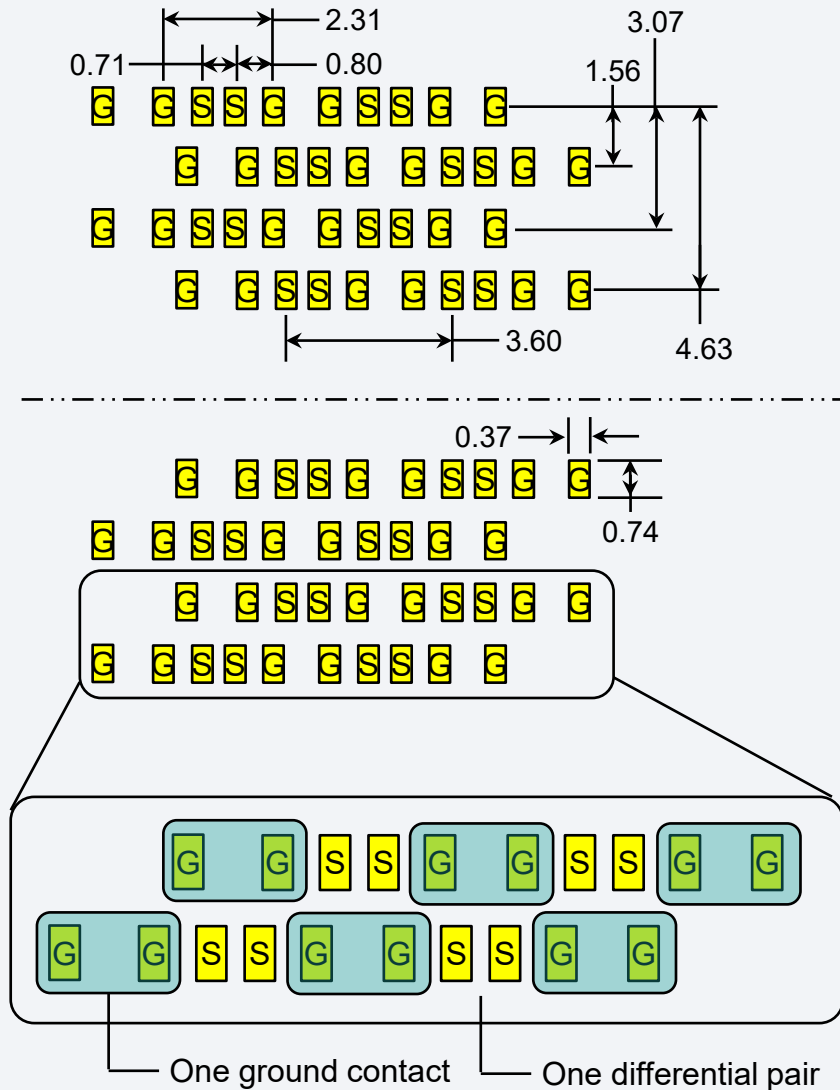


All dim's in mm

- 4-Row 0.90mm pitch, 20 to 80 diff. pairs
- Integrated guidance features
- Normal force
 - 25g per pin EOL
- Mating force
 - 27g per pin typical
- Mechanical wipe
 - 0.50mm
- J-Lead SMT attachment
- Multi-up connector application capable
 - Parallel or in-line
- PCB alignment and stabilizing feature

Product specifications

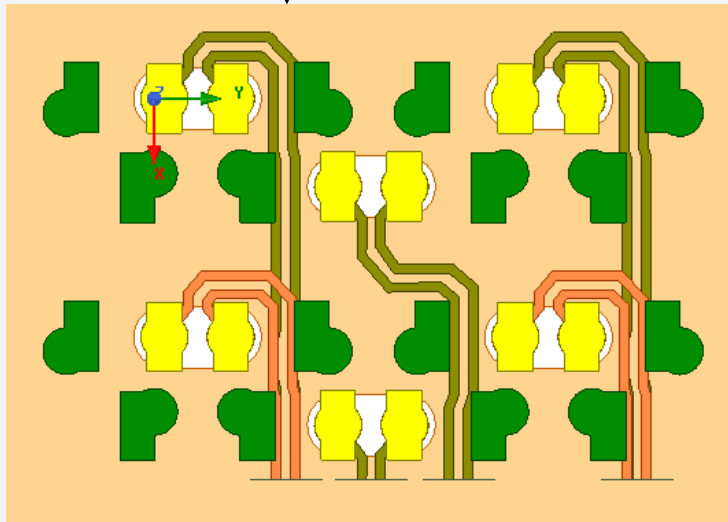
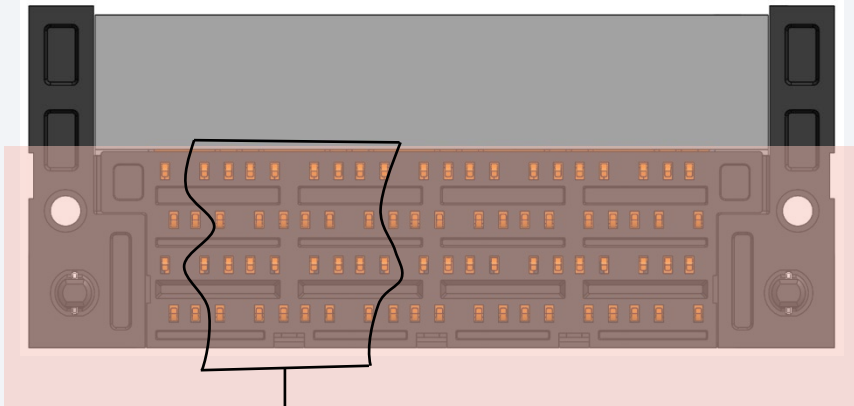
Footprint



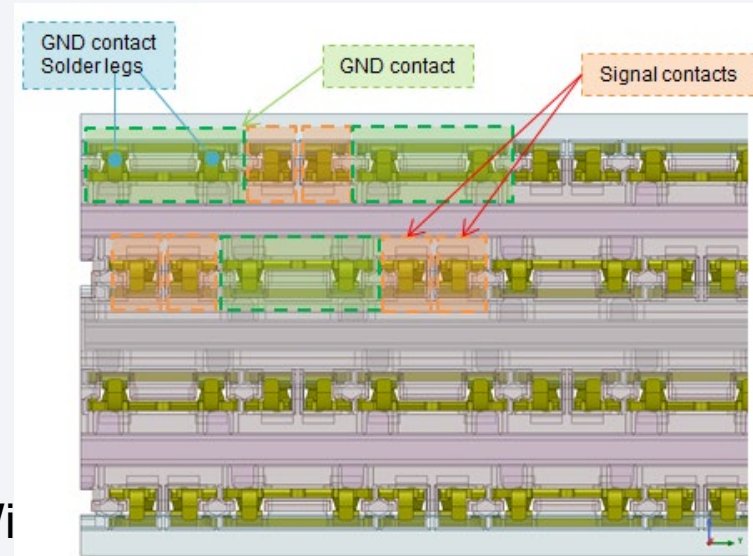
- Footprints are the same for all connectors
- All pad sizes are the same 0.37x0.74mm
- Pitch between differential pairs is 3.60mm
- All ground contacts are connected together

Product specifications

Routing



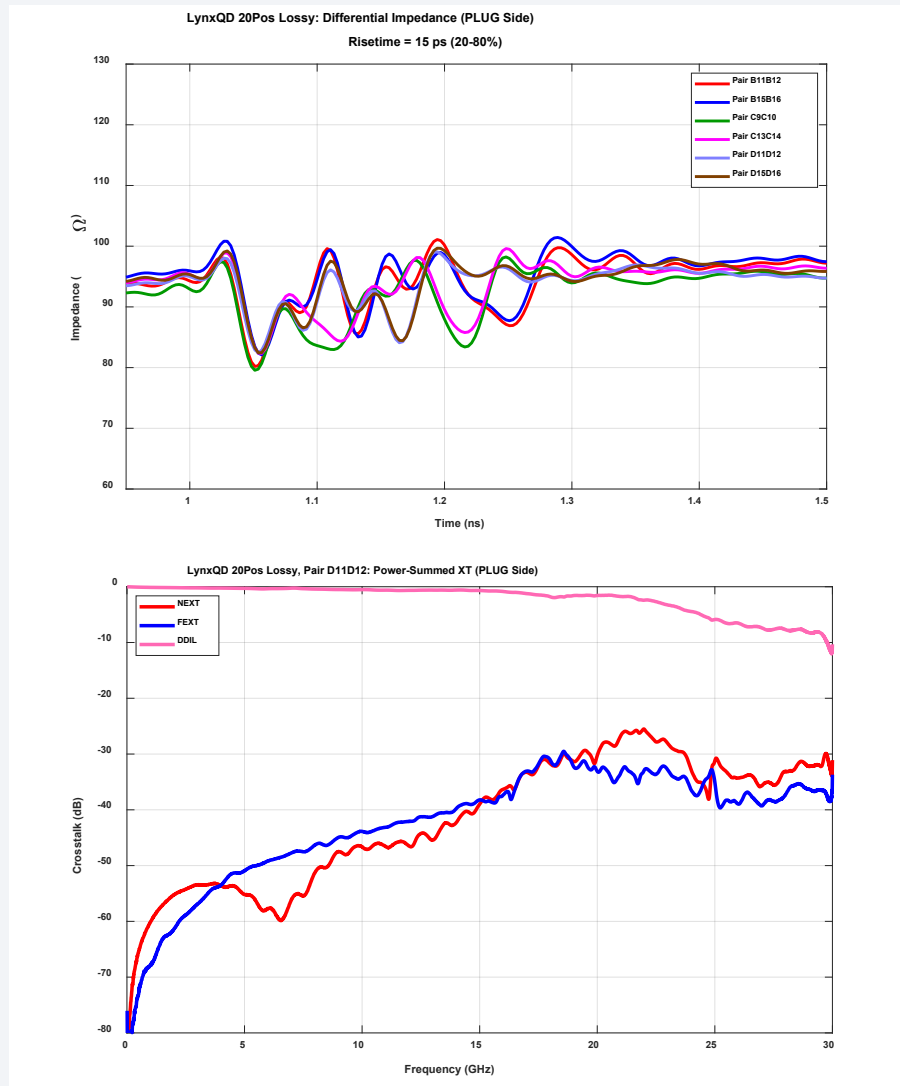
- Coplanar and right angle connectors can route out of connector on 2 layers
- Vertical stacker can route out of connector on 1 layer
 - Route out of connector from both sides



- With options

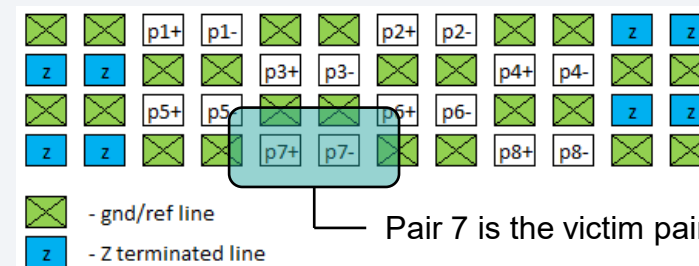
Product specifications

Signal integrity - Coplanar



- 56G PAM 4 and PCIe Gen 5 performance
- Power sum cross talk below -40dB out to 15 GHz
- IL-PSNEXT margin 35 dB at 16 GHz
- IL-PSFEXT margin 35 dB at 16 GHz
- 92 Ohm impedance
- Current rating 1.5A per pin

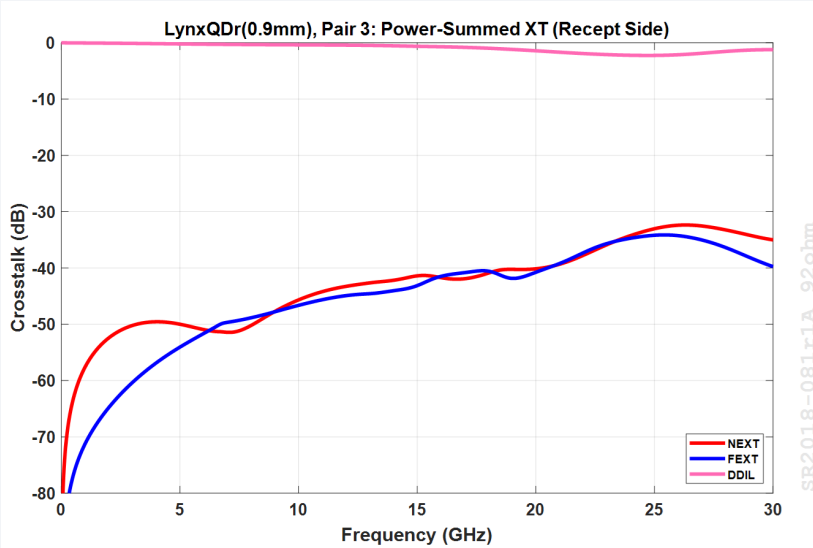
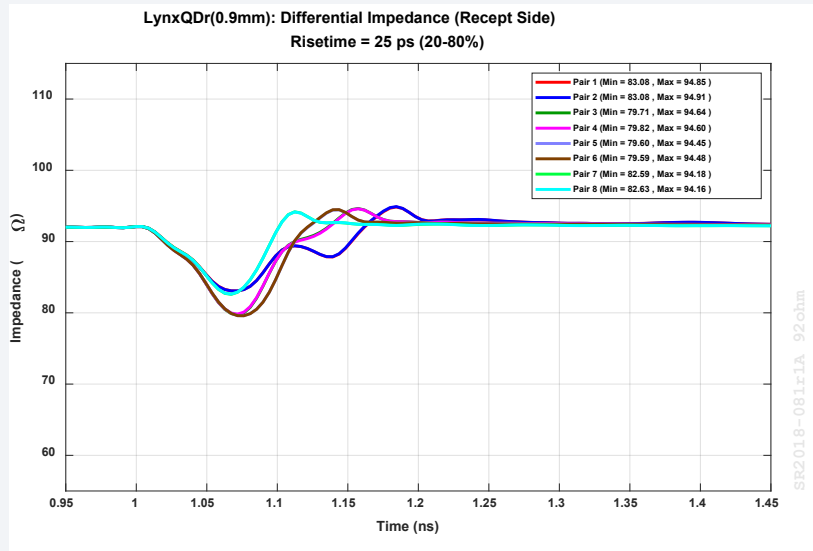
Signal integrity pin out



- Pair 7 is the victim
- 5 aggressors

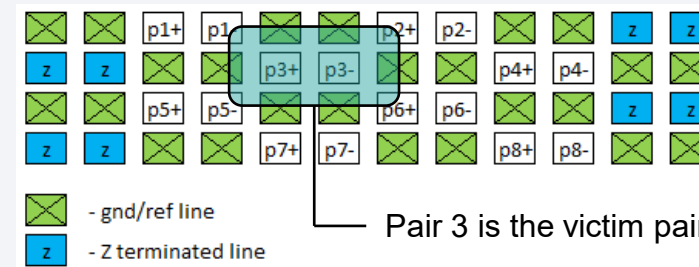
Product specifications

Signal integrity – Right angle



- 56G PAM 4 and PCIe Gen 5 performance
- Power sum cross talk below -40dB out to 20 GHz
- IL-PSNEXT margin 36 dB at 16 GHz
- IL-PSFEXT margin 35 dB at 16 GHz
- 92 Ohm impedance
- Current rating 1.5A per pin

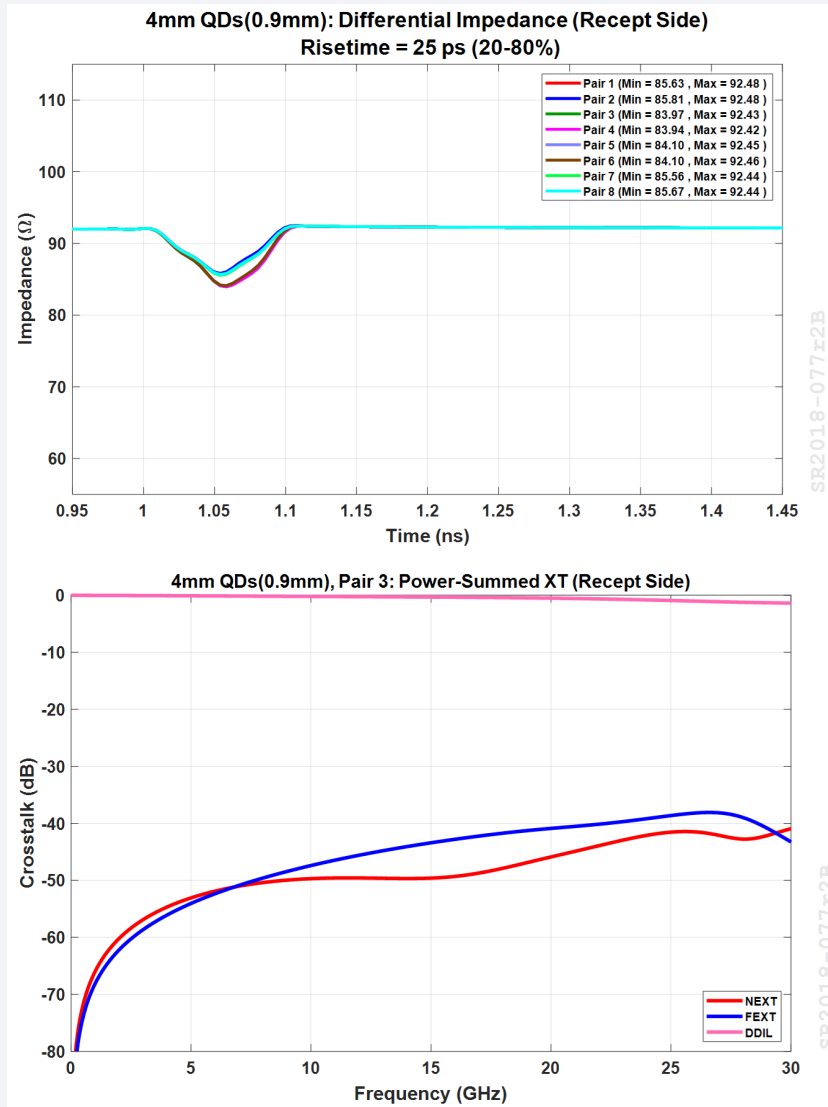
Signal integrity pin out



- Pair 3 is the victim
- 5 aggressors

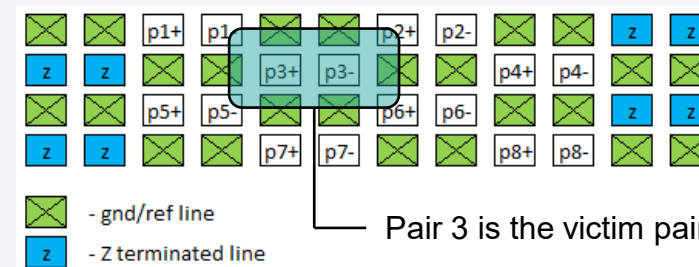
Product specifications

Signal integrity – Vertical stacker



- 56G PAM 4 and PCIe Gen 5 performance
- Power sum cross talk below -40dB out to 20 GHz
- IL-PSNEXT margin 50 dB at 16 GHz
- IL-PSFEXT margin 41 dB at 16 GHz
- 92 Ohm impedance
- Current rating 1.5A per pin

Signal integrity pin out



- Pair 3 is the victim
- 5 aggressors

Value Proposition

Lynx QD – The Quad Differential Solution

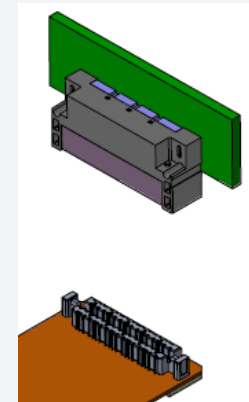
■ Key Customer Messages

- High speed, high density in multiple form factors
- Lynx QD is the “Problem Solver” – ideal for many applications
- Paired with our Custom Assembly/Integration capability
- Built for quick-turn Design Wins



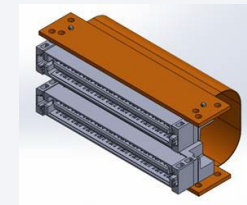
■ Key Qualifying Questions

- What are your speed requirements for now and the future?
- Is your current solution flexible enough to meet future needs?
- Has available form factor been limiting your Design work?
- Does your current solution support all your signaling needs?
- Does your partner offer in house custom assembly integration?

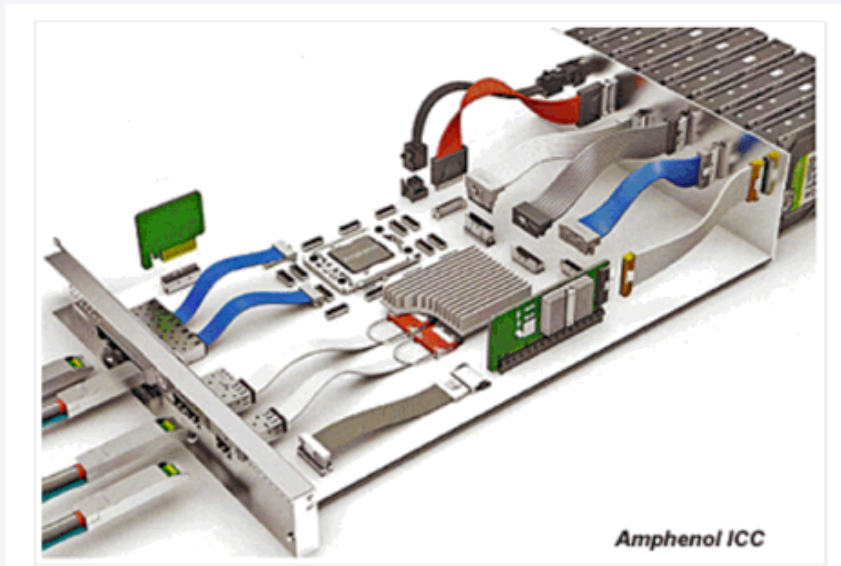


■ Lead with Mezzanine Flex Options

- Lynx QD interconnects with flexible circuit
- Connector/cable assemblies & Near Chip
- We have a dedicated Team to design custom solutions



- **New Markets**
 - Automotive
 - Medical and Diagnostics
 - Consumer Electronics/Cameras



■ High Value Verticals

TARGET MARKETS/APPLICATIONS



Switches
Routers
Telecom
Datacom



Rack Mount Server
Blade Server
Storage Server
Datacenter



Car Multimedia
Car Navigation Systems



Instrumentation and Medical



Medical Instrument
Imaging
Monitoring