

Amphenol

COMMUNICATIONS SOLUTIONS

BergStak HS™ 0.50mm Product Presentation



 **FCi Basics**

Industry recognized portfolio combining leading edge technologies and proven solutions

Wire to Board Core	Wire to Board eMobility	Input Output FFC FPC	Backplane	Board to Board
<p>BergStik® Minitek® PV® Dubox® Quickie®</p>	<p>MicroSpace™ MicroSpaceXS™ FlexLock™ MicroSpace™ High Voltage WireLock®</p>	<p>Clincher® SFW-SFV USB HDMI Modular Jack Universal Contacts USB Cable Assembly</p>	<p>Metral® DIN41612 Millipacs® HPC</p>	<p>MezzoStak® BTFW MicroSpeed® Conan® BergStak®</p>

Leading Product Portfolio For Strategic Markets

Automotive
BMS, Lighting, OBC, ADAS

Industrial
PLC/Controls, ESS, Metering

IT/Datacom
Servers, Storage, AI, Embedded

Consumer
Home Automation, Appliances

Structured To Make Customers Succeed

Value Add Solutions
Tailormade Cable Assemblies

Custom Competence
Design Local; Build Regional

Global Footprint
China; France; India; Mexico; Malaysia

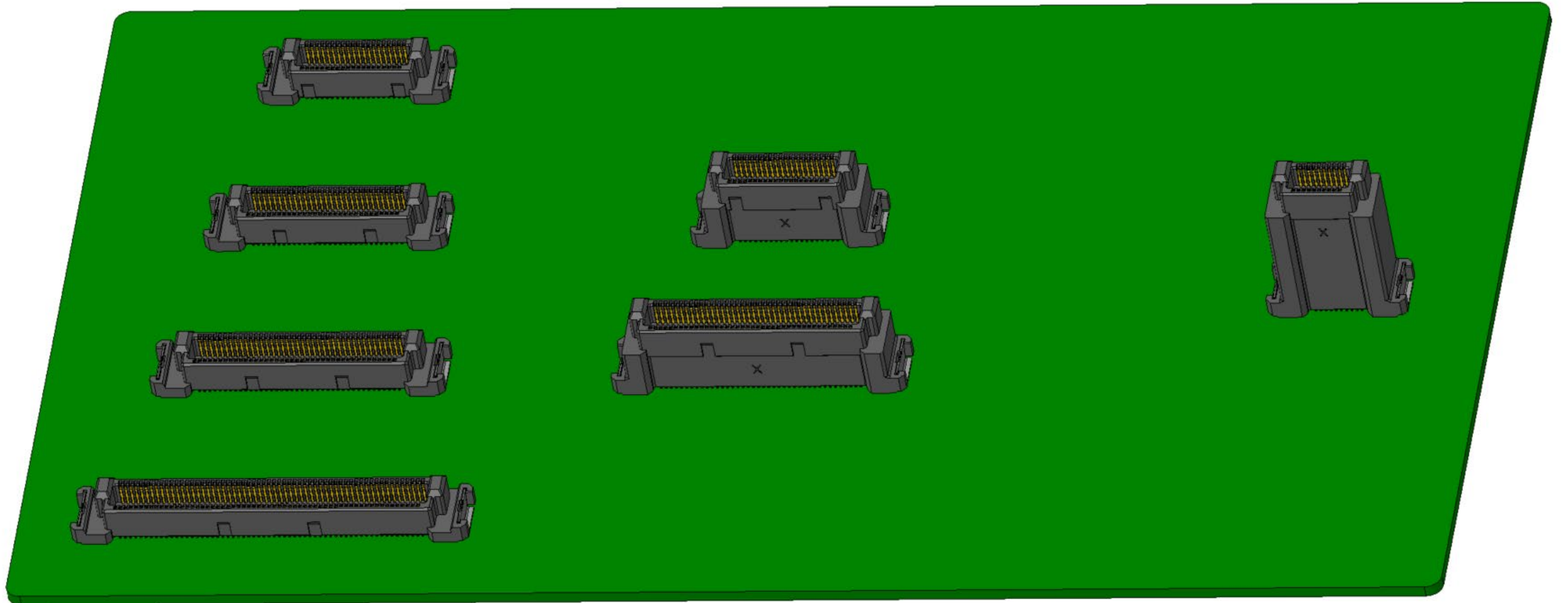
Technology & Innovation
Dedicated Basics Engineering Teams

- BergStak HS™ 0.50mm is a comprehensive and versatile solution designed for **high density** application able to cover the needs of different applications.
- Has the ability to support higher speed applications up to **32Gb/s, SAS 4.0, 56G-PAM4 and PCIe® Gen 5 standards.**
- The BergStak HS™ 0.50mm presently has a stack height of 12mm, 40 and 80 positions. We plan to include stack heights of **5mm to 20mm** with positions for **20 to 120 positions** upon request.
- BergStak HS™ 0.50mm is a double row, mezzanine connector system with **surface-mount** solder tails
- BergStak HS™ 0.50mm is **open pin field design**, available in single GND and double GND
- BergStak HS™ 0.50mm has **self-alignment** feature, supports blind mating and automatic assembly cost effectively
- BergStak HS™ 0.50mm connectors are ideal for applications in the **IT/DA: Server/Storage/AI, Industrial: Automation Machines, Automotive: ADAS, Consumer: Desktop/workstation** markets.

BergStak® 0.5mm HS Vertical **Header**
H1=3.77mm 40,60,80,120Pin
P/N 10163418-XX**1**XXX2LF

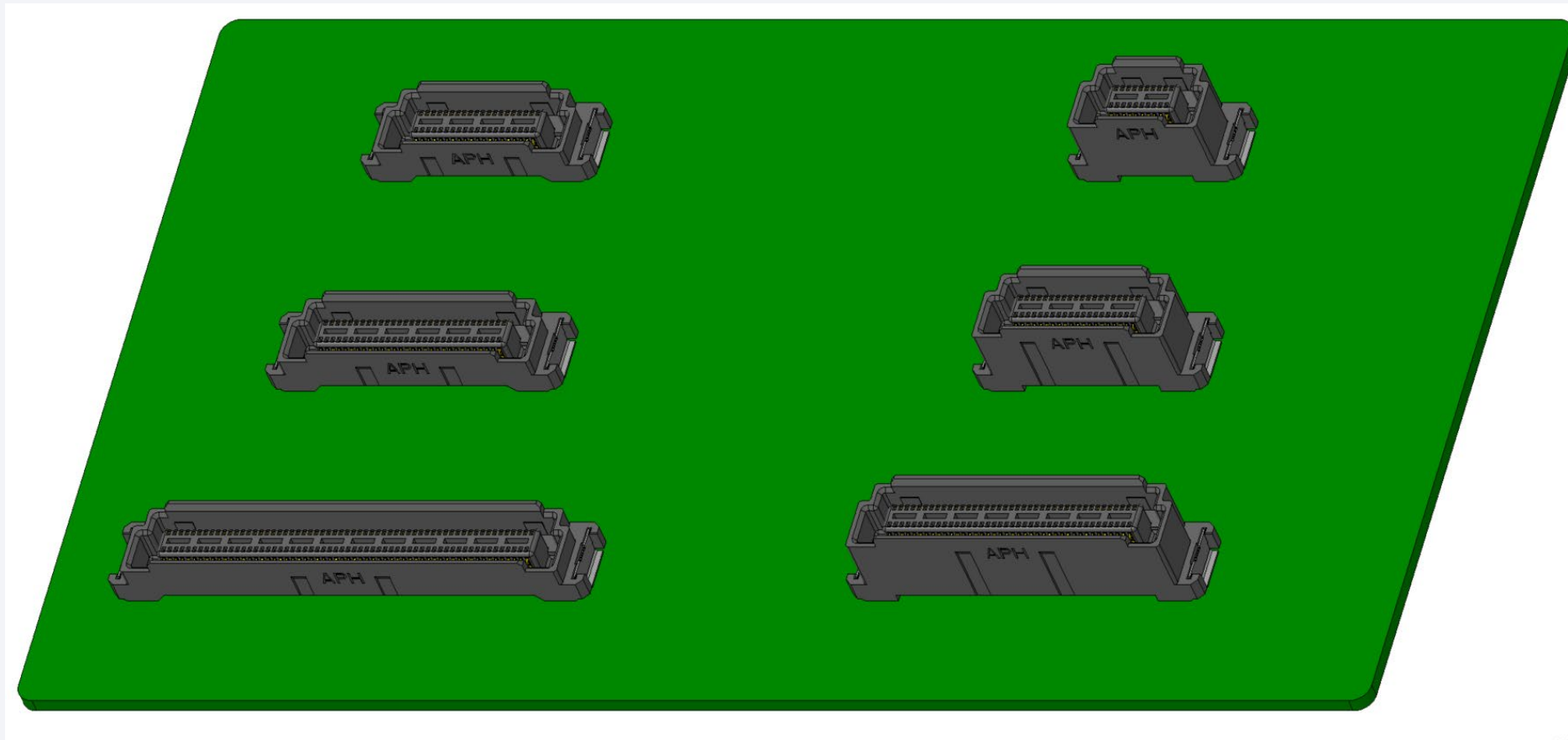
BergStak® 0.5mm HS Vertical **Header**
H2=7.77mm 40,80Pin
P/N 10163418-XX**2**XXX2LF

BergStak® 0.5mm HS Vertical **Header**
H4=15.77mm 20Pin
P/N 10163418-XX**4**XXX2LF

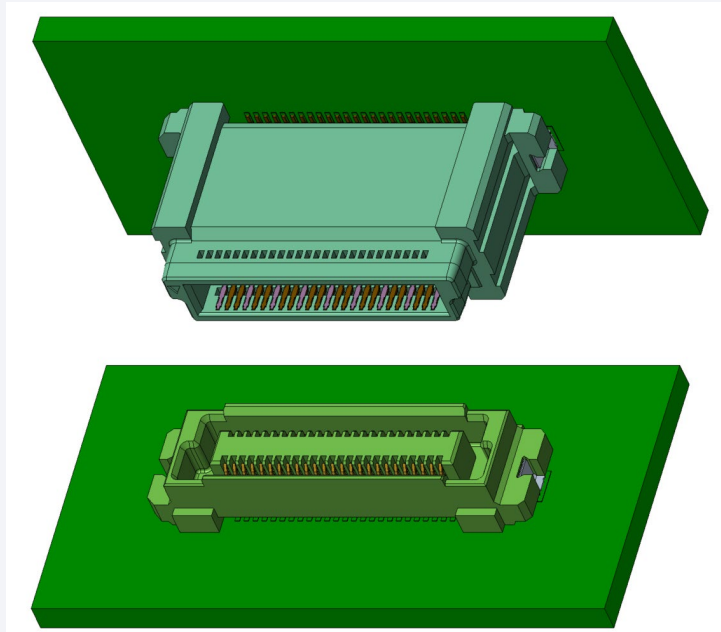


BergStak® 0.5mm HS Vertical **Receptacle**
R1=3.55mm 40,60,120Pin
P/N 10163419-XX**4**XXX2LF

BergStak® 0.5mm HS Vertical **Receptacle**
R4=6.55mm 20,40,80Pin
P/N 10163419-XX**4**XXX2LF

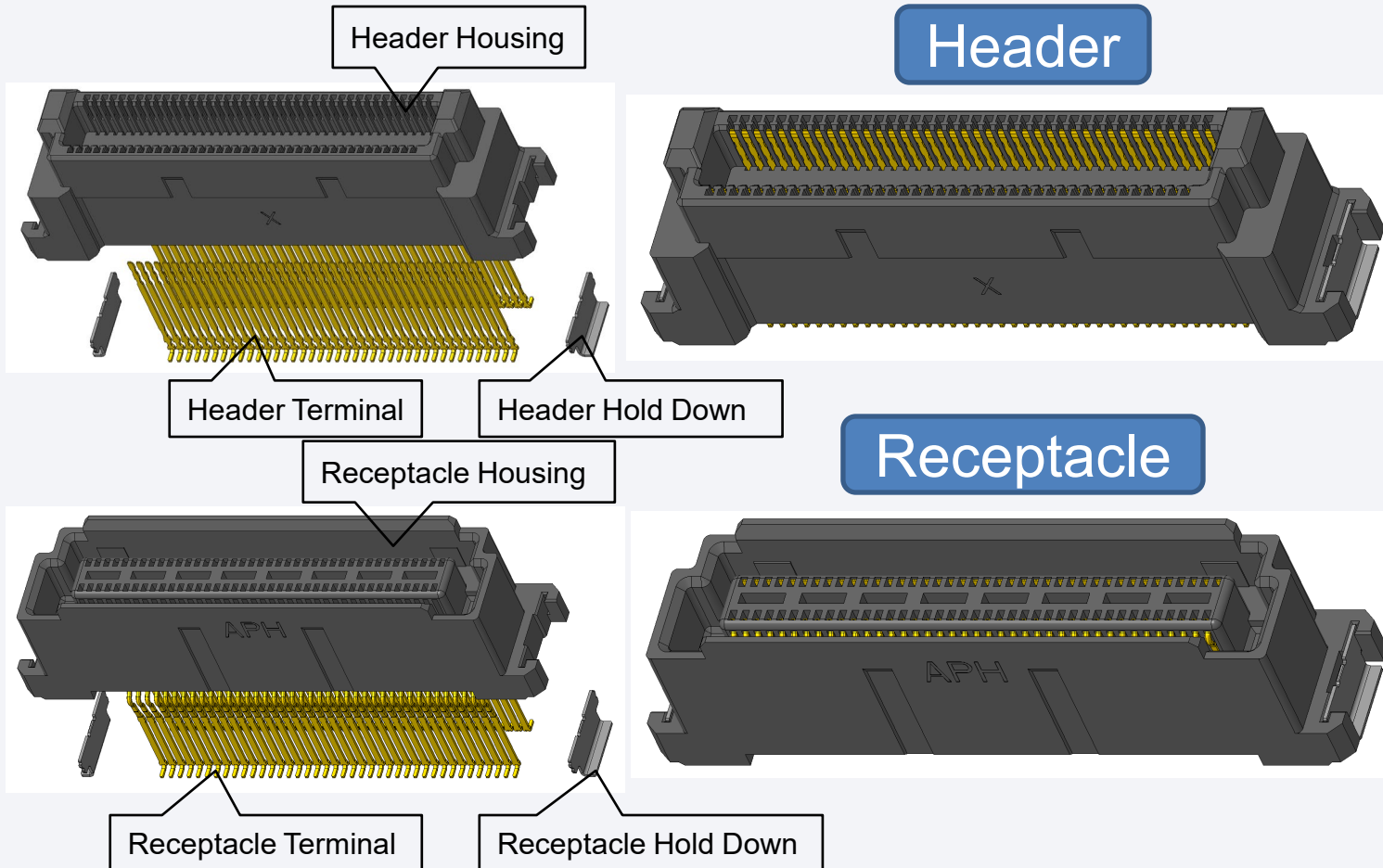


BergStak HS™ 0.50mm connector Vertical **Header**
H8=10.7mm 50Pin
P/N 10138650-058202XLF

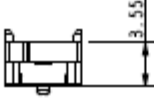
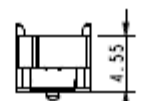
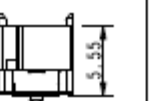
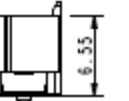

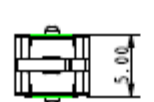
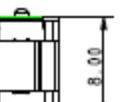


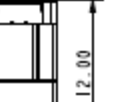







BergStak HS™ 0.50mm connector Vertical **Receptacle**
R1=3.8mm 50Pin
P/N 10138651-051202LF

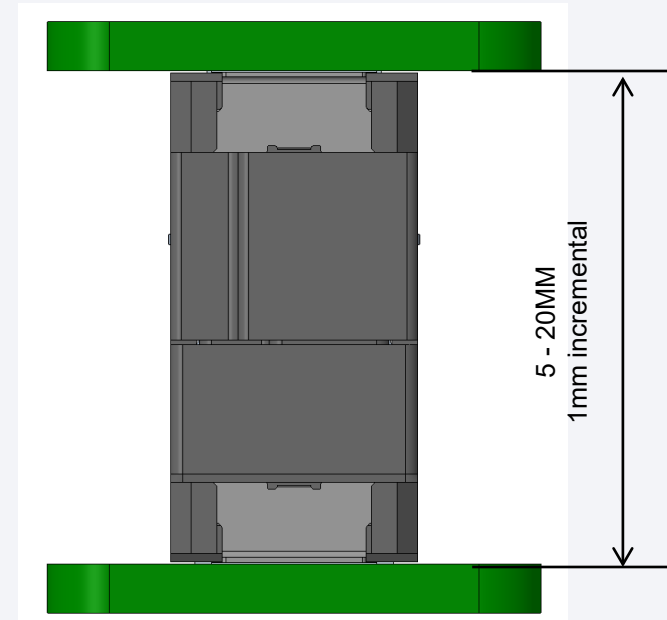
BergStak HS™ 0.50mm



Major parameter	
Base P/N	10163418 & 10163419
Pitch (mm)	0.50 mm
Current Rating/Contact	0.5A, all pin powered
Stack height	5-20mm, Incremental 1mm
Misalignment	Pitch direction +/-0.6mm
	Width direction +/-0.5mm
Wipe length	1.00mm
# Positions	Signal pin: 20-120, Incremental 20

		10163419			
COMBINATION OF MATED HEIGHT		 RECEPTACLE 1	 RECEPTACLE 2	 RECEPTACLE 3	 RECEPTACLE 4
10163418	 HEADER 1	 5.00	6mm Stack Height	7mm Stack Height	 8.00
	 HEADER 2	 9.00	10mm Stack Height	11mm Stack Height	 12.00
	 HEADER 3	 13mm Stack Height	14mm Stack Height	15mm Stack Height	16mm Stack Height
	 HEADER 4	 17.00	18mm Stack Height	19mm Stack Height	 20.00

Stack Height



Specifications

- Pitch: 0.50mm
- Positions: 20 ~ 120pos
- Termination: SMT
- Configurations: Vertical
- Stack Heights: 5~20mm
- USCAR, UL E66906

Materials

- Housing: High temperature thermoplastic LCP, Black (UL94V-0)
- Terminal: Copper Alloy
- Hold down: Copper Alloy
- Plating: Gold Flash, 15u" and 30u" Gold or GXT

Electrical Performances

- Operating Voltage Rating = 100 VDC
- Current Rating: 0.5A all contacts powered
- Insulation Resistance: 100MΩ min.
- Contact Resistance: 50m-ohms max (Initial)
- Speed: Up to 32Gb/s, SAS 4.0, 56G-PAM4 and PCIe® Gen 5 standards

Mechanical Performance

- Durability: 100 cycles
- Insertion Force: 0.5N max.
- Withdrawal Force: 0.02N min.
- Wiping length: 1.00mm

Environmental

- Operating Temperature: -40°C to +125°C
- MFG:EIA 364-65 Class –IIA compatible

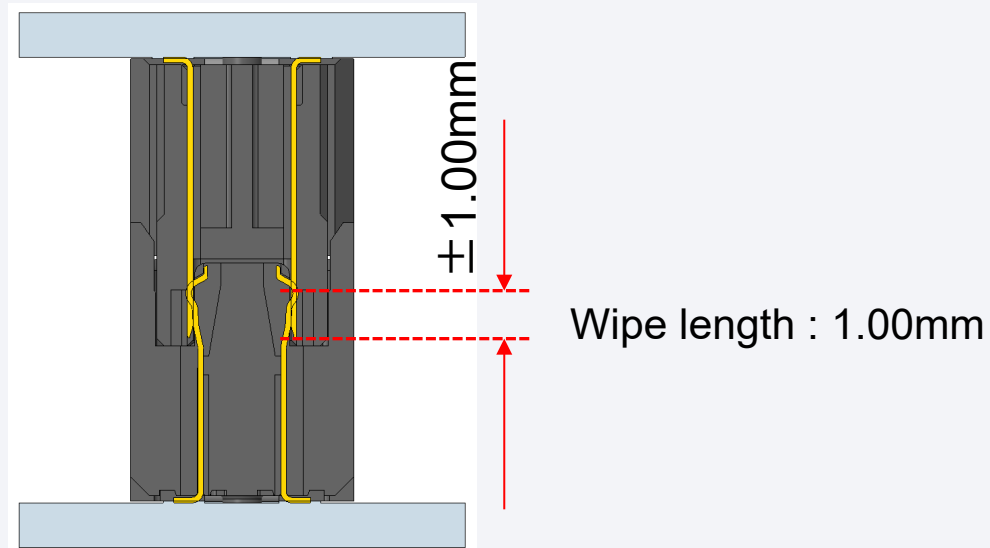
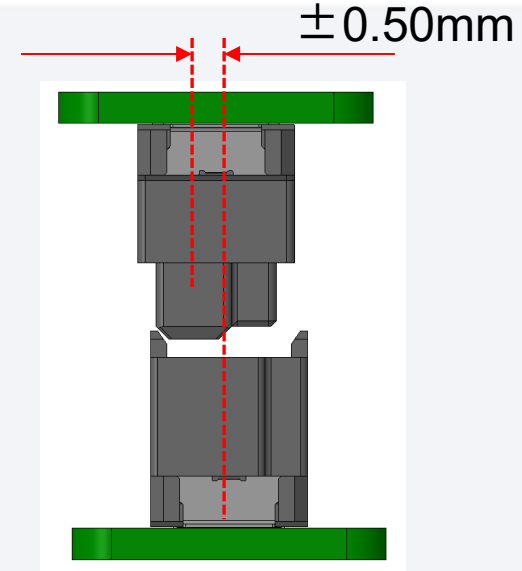
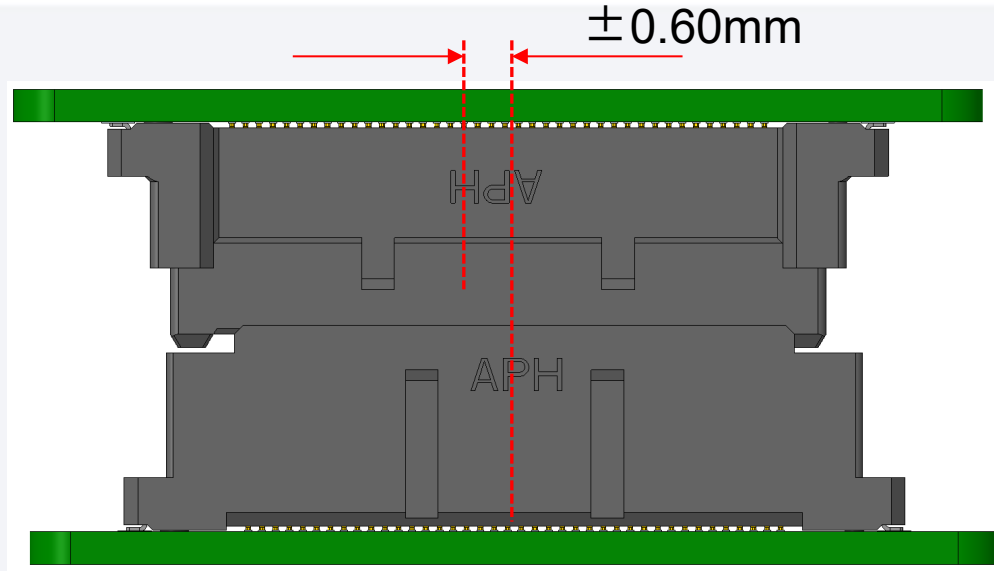
Packaging

- Tape and reel

Features	Benefits
0.5mm double row contacts	High density connector, suitable for applications with space constraints
High speed performance up to 32Gb/s.	Meets SAS 4.0, 56G-PAM4 and PCIe® Gen 5 standards
Options from 20 to 120 Options for 5mm and 20mm	Application flexibility
Open pin field design, available in single GND and double GND	Design flexibility
Self-alignment feature	Supports blind mating and automatic assembly cost effectively
RoHS compliant, halogen and lead free	Supports blind mating and automatic assembly cost effectively
UL94V-0 high temperature LCP material	With-stand harsh environment

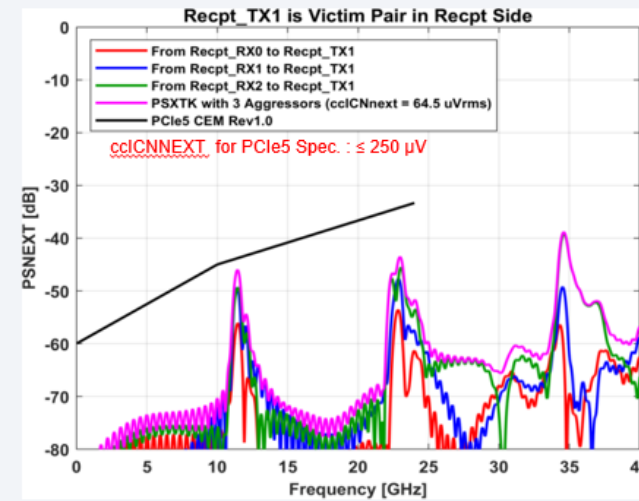
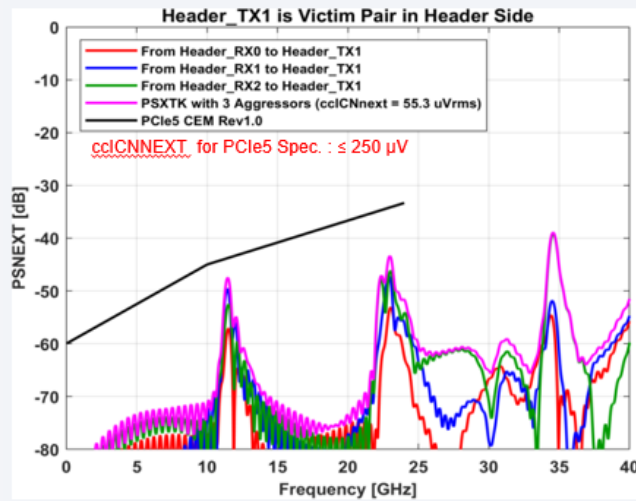
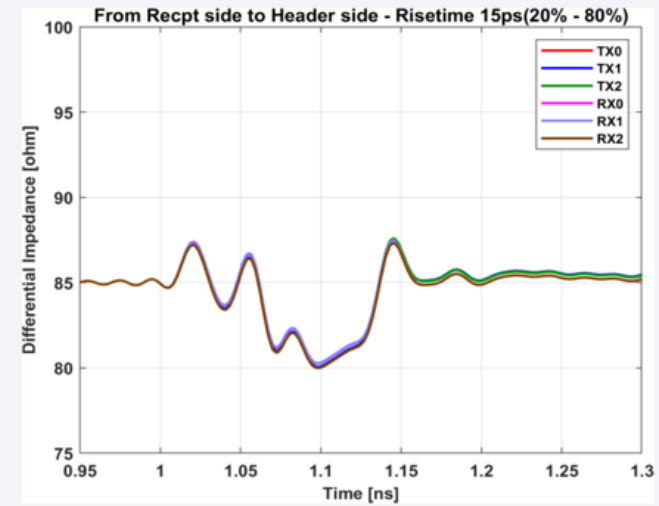
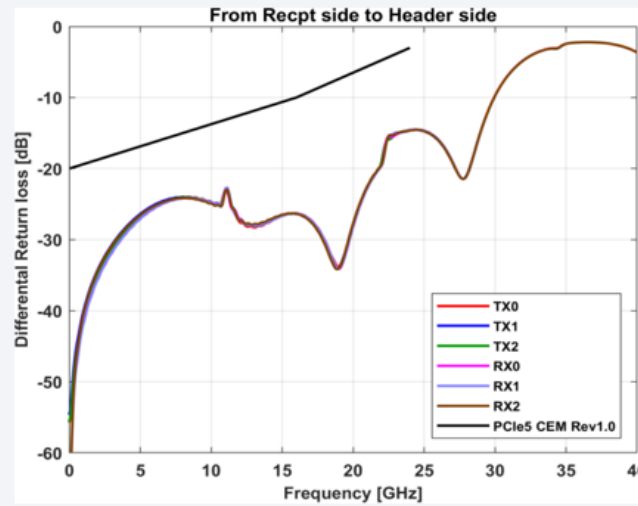
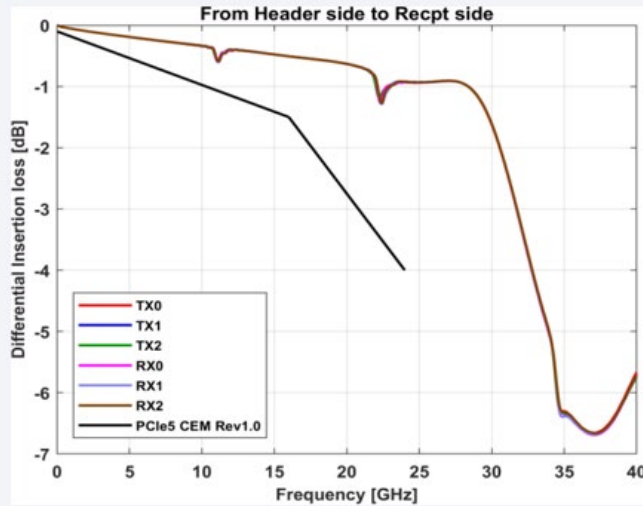
Advanced Features

-Mis-alignment featur



Advanced Features -HS performance

Support up to **32Gb/s.** complies Simulation result passed **SAS 4.0. 56G-PAM4 and PCIe® Gen5.**



Part Numbers

-Header and receptacle

10163418- XX X X X X X LF

LF: LEAD FREE

PACKING OPTION:
0: TUBE
2: TAPE AND REEL WITH MYLAR

HOUSING OPTION:
0: WITH PEG
1: WITHOUT PEG

HOLD DOWN OPTION:
0: YES
1: NO

PLATING OPTION:
1: GOLD FLASH ON CONTACT AREA
GOLD FLASH ON SOLDER TAIL
2: 0.38um MIN. GOLD/GXT ON CONTACT AREA
GOLD FLASH ON SOLDER TAIL
3: 0.76um MIN. GOLD/GXT ON CONTACT AREA
GOLD FLASH ON SOLDER TAIL

HEADER TYPE:
1: HEADER 1
2: HEADER 2
3: HEADER 3
4: HEADER 4
6: HEADER 6

PIN NUMBER:
02: 2X10
03: 2X15
04: 2X20
05: 2X25
06: 2X30
07: 2X35
08: 2X40
09: 2X45
10: 2X50
0A: 2X55
0B: 2X60

10163419- XX X X X X X LF

LF: LEAD FREE

PACKING OPTION:
0: TUBE
2: TAPE AND REEL WITH MYLAR

HOUSING OPTION:
0: WITH PEG
1: WITHOUT PEG

HOLD DOWN OPTION:
0: YES
1: NO

PLATING OPTION:
1: GOLD FLASH ON CONTACT AREA
GOLD FLASH ON SOLDER TAIL
2: 0.38um MIN. GOLD/GXT ON CONTACT AREA
GOLD FLASH ON SOLDER TAIL
3: 0.76um MIN. GOLD/GXT ON CONTACT AREA
GOLD FLASH ON SOLDER TAIL

RECEPTACLE TYPE:
1: RECEPTACLE 1
2: RECEPTACLE 2
3: RECEPTACLE 3
4: RECEPTACLE 4

PIN NUMBER:
02: 2X10
03: 2X15
04: 2X20
05: 2X25
06: 2X30
07: 2X35
08: 2X40
09: 2X45
10: 2X50
0A: 2X55
0B: 2X60

Part Numbers

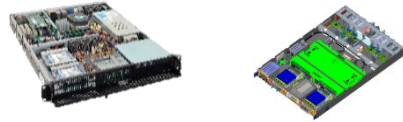
-Header and receptacle

Description	Part Numbers
BergStak HS™ 0.50mm, 40position, header, 5/8mm stack height	10163418-0411002LF
BergStak HS™ 0.50mm, 60position, header, 5/8mm stack height	10163418-0611002LF
BergStak HS™ 0.50mm, 80position, header, 5/8mm stack height	10163418-0811002LF
BergStak HS™ 0.50mm, 120position, header, 5/8mm stack height	10163418-0B11002LF
BergStak HS™ 0.50mm, 20position, header, 17/20mm stack height	10163418-0241002LF
BergStak HS™ 0.50mm, 40position, Receptacle, 5/9/17mm stack height	10163419-0411002LF
BergStak HS™ 0.50mm, 60position, Receptacle, 5/9/17mm stack height	10163419-0611002LF
BergStak HS™ 0.50mm, 120position, Receptacle, 5/9/17mm stack height	10163419-0B11002LF
BergStak HS™ 0.50mm, 20position, Receptacle, 8/12/20mm stack height	10163419-0241002LF
BergStak HS™ 0.50mm, 40position, header, 9/12mm stack height	10163418-0422002LF
BergStak HS™ 0.50mm, 80position, header, 9/12mm stack height	10163418-0823002LF
BergStak HS™ 0.50mm, 40position, Receptacle, 8/12/20mm stack height	10163419-0442002LF
BergStak HS™ 0.50mm, 80position, Receptacle, 8/12/20mm stack height	10163419-0843002LF
BergStak HS™ 0.5mm board-to-board, Vertical Header, 50 positions, Single GND, 25Gb/s version	10138650-058202SLF
BergStak HS™ 0.5mm board-to-board, Vertical Header, 50 positions, Double GND, 32Gb/s version	10138650-058202DLF
BergStak HS™ 0.5mm board-to-board, Vertical Receptacle, 50 positions	10138651-051202LF



IT/ Datacenter

- AI
- Server
- Storage



Consumer

- Desktop
- Workstation



Automotive

- ADAS



Industrial

- Automation Machines



- Samples available through ACS Website
- Website quick link: <https://www.amphenol-cs.com/product-series/bergstak-hs-050mm-mezzanine.html>

- Available on website
 - Drawings
 - 3D Models
 - Datasheet
 - Product specifications
 - Product presentation



Thank You

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