Amphenol

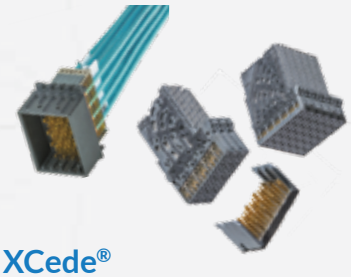
Enabling The
Electronics Revolution

Overview

Amphenol

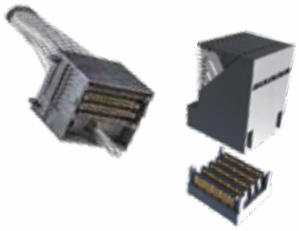
High Speed Backplane Products

www.amphenol-icc.com/high-speed-backplane



XCede®

- Supports designs from 8G to 56G PAM4
- Scalable and flexible design supports all your system requirements
- Supports Embedded Capacitors



ExaMAX®

- Cost optimized with scalable performance to 112G PAM4
- Innovative design supports low insertion/extraction forces along with reduced crosstalk and low insertion loss
- Flexible architecture supports direct orthogonal, traditional backplane, coplanar and cable requirements

Paladin®

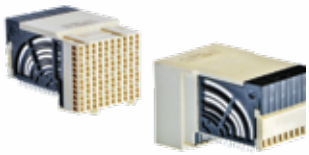
- Supports data rates beyond 112G PAM4; industry leading signal to noise performance
- Consistent signal integrity performance over the entire mating range
- Flexible architecture supports direct orthogonal, traditional backplane, mezzanine, coplanar and cable requirements

XCede® HD

- Supports designs from 8G to 56G PAM4
- The de facto standard for high performance backplane designs with industry leading density
- Supports Embedded Capacitors

ExaMEZZ®

- Cost optimized with scalable performance up to 56G PAM4
- Innovative design supports low insertion/extraction forces along with reduced crosstalk and low insertion loss
- Stacked height range from 15 to 45mm in 2 and 4 pair configurations



AirMax®

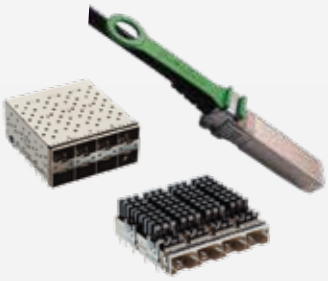
- Cost optimized with scalable performance beyond 25G PAM4
- Traditional backplane offering including standard and inverse gender
- Standard is 3-, 4- and 5-pair

Elite®

- Scalable performance beyond 56G PAM4
- Connector design is optimized for reduced PCB layer count
- Same mating interface for direct orthogonal, cable and traditional architectures

High Speed IO

www.amphenol-icc.com/high-speed-io



28G / 56G SFP

- High performance, cost effective solution for D/C applications
- Passive & active cables; 30AWG to 26AWG cable sizes
- Stacked, ganged and belly-to-belly board connector and cage configurations with heat sinks and light pipes
- 112G solutions in development

mSAS HD Active Optical Cables

- Capable of speeds up to 16Gb/s per channel (4 lanes)
- Supports SAS 2.0/3.0 and PCIe Gen 3.0/4.0
- Transmission distance up to 100m (MMF)

400G QSFP DD Active Optical Cables

- Capable of speeds up to 56Gb/s per channel (8 lanes)
- Supports Ethernet PAM4
- Maximization of linear port density

100G / 200G QSFP

- 4 lanes per cable – 28G & 56G per lane capability
- Passive & active cables; 26AWG to 32 AWG cable
- Stacked, ganged and belly-to-belly connector and cage configurations
- 112G/lane coming in 2021

100G QSFP Active Optical Cables

- Capable of speeds up to 25.78125Gb/s or 28.056Gb/s per channel (4 lanes)
- Supports 100G Ethernet and Infiniband 4xEDR and 4x32 FC protocols
- Transmission distance up to 100m (MMF)

Leap® On-Board Transceiver

- 300Gb/s aggregate 12TRx at distances up to 70m
- Low power consumption: 5.4W
- Small form factor: 1sq inch

200G / 400G / 800G QSFP DD

- 8 lanes per cable – 28G & 56G per lane capability
- New 112G/lane solution available in 2021
- Double the bandwidth per port vs. QSFP
- Backwards plug compatibility with QSFP

300G CXP2 Active Optical Cables

- Capable of speeds up to 25.78125Gb/s per channel and 25Gb/s per channel (12 lanes)
- Supports Ethernet (25.78125Gb/s per channel) and Cpri (25Gb/s per channel) protocols
- Up to 300Gb/s aggregate bandwidth per channel

SCFF On-Board Transceiver

- 1TRx at up to 28Gb/s at distances up to 70m
- Duplex LC optical port
- SMT solder and 2-screw PCB fixation

200G / 400G / 800G OSFP

- 8 lanes per cable – 28G & 56G per lane capability
- New 112G/lane solution available in 2021
- Thermal management engineered into cabled solution
- PAM4 modulation providing solutions up to 400G aggregate bandwidth

200G QSFP DD Active Optical Cables

- Capable of speeds up to 25.78125Gb/S or 28.056Gb/S per channel (8 lanes)
- Supports 200G Ethernet NRZ
- Maximization of linear port density

OverPass™ Solutions

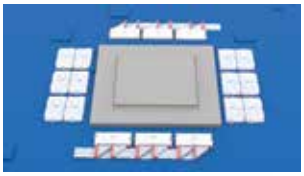
Cable system offering a broad range of capabilities that efficiently take high speed signal from near the ASIC to anywhere in the system.

www.amphenol-icc.com/overpass

External High Speed IO

Near ASIC to
external IO receptacles

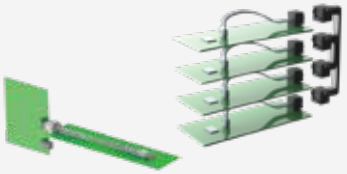
- High speed interconnect link from the chip site directly to the external IO port
- HSIO OverPass product portfolio fully compliant to established industry standard interfaces: SFP, QSFP, QSFP DD, OSFP and others
- Supports signal transmission speeds of 10G, 28G, 56G PAM4 and 112G per lane bandwidths
- Press fit or cabled sideband signal management; ; engineered wire management
- Stacked, ganged, and belly-to-belly HSIO connector and cage configurations with high density (DP/mm2) near chip / on chip solutions



Internal

Near ASIC to cards or
board location in system

- Delivering a simple, low-loss, direct link to pluggable modules or anywhere in your system
- Optimization with our high speed, low loss twinax cable with high speed connectors such as: Mini-SAS HD, OCulink, SlimSAS™, Mini Cool Edge IO, ExtremePort™ Z-Link, Flash & Swift, and micro-LinkOVER™
- Solutions are available in 10G, 25G, 56G & 112G PAM4 per lane signaling speeds
- Multiple cable exit options like straight, right angle, and coplanar
- Construction options including double ended, Y, and breakout cables.
- Single, ganged and stacked cage configurations



Cabled Backplane

Near ASIC to system backplane
or coplanar cards

- Cable Backplane System portfolio products extend the reach of passive copper for next generation system designs
- 56G and 112G PAM4 performance
- Optimization with our high speed, low loss twinax cable with Paladin® and ExaMAX® backplane connector families
- Flexible connector architecture supports cable blind mating with a backplane cable, press fit headers, right angle and orthogonal configurations

High Speed Bulk Cables

High frequency SkewClear EXD
cable technology

- Offerings include multi-pair cables: 2, 4 and 8 pair constructions in wire gages from 32 AWG to 26 AWG (34 AWG in development)
- Supports transmission speeds of 10G, 28G, 56G, and 112G PAM4 per lane bandwidths
- Impedance tuned designs support: Paladin ®, ExaMAX®, ExaMAX+®, micro-LinkOVER™, Swift, Flash, GenZ, OverPass™ HSIO
- FEP insulated wiring for higher temperature environments

Amphenol XGIGA

www.amphenol-icc.com/amphenol-transceivers

1G-10G Transceivers

- LR, ER, BIDI, CWDM, LWDM, DWM, etc
- SFP, SFP+, CFP, XFP
- C-TEMP, I-TEMP
- Tunable

25G Transceivers

- AOC, BIDI, SR, LR, ER
- DWDM, MWDM, BIDI LR, BIDI ER, CWDM
- C-TEMP, I-TEMP

40G Transceivers

- SR,LR,ER, CWDM, AOC
- QSFP+
- C-TEMP, I-TEMP

100G Transceivers

- QSFP28, CFP, CFP2, CFP4
- AOC, SR4, LR4, ER4 LITE, CWDM4
- C-TEMP, I-TEMP

200G Transceivers

- QSFP DD
- ER4
- Ask about availability

400G Transceivers

- QSFP DD
- FR4, DR4, SR8
- Ask about availability

16G / 32G / 64G Fibre Channel Transceivers

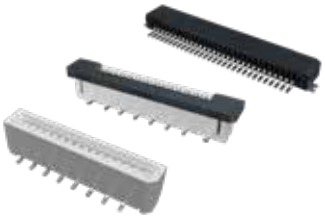
- EWRAP and OWRAP loopback designs
- C Temp and I Temp on some models
- Ask about availability

Amphenol AORORA

www.amphenol-icc.com/aorora

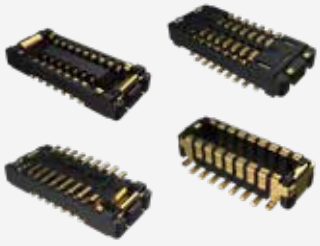
0.50mm FFC/FPC

- Easy to operate and vibration-proof
- Wide height range from 1.25mm to 5.80mm with 4 to 80 contact positions in both vertical and right angle orientations
- Front/back/vertical flip and slider mechanisms with ZIF or Non-ZIF cable terminations



1.00mm FFC/FPC

- Easy to operate and prevents against solder and flux wicking
- Wide height range from 2.00mm to 5.04mm with 3 to 34 contact positions in both vertical and right angle orientations
- Front flip and slider mechanisms with ZIF or Non-ZIF cable terminations



Micro Board-to-Board

- Low profile and fine pitch for high density applications
- High current rating (Up to 3A)
- Chamfer connector design prevents mismatching

Floating Board-to-Board

- Floating range of ±0.50mm in the X, Y and Z directions
- High speed performance (Up to 2.5Gb/s)
- Double contact points for enhanced contact reliability

Mezzanine Products

www.amphenol-icc.com/mezzanine

cLGA® & cStack™

- Mechanically robust dual compression technology with pin counts up to 5000+
- High performance sBGA configurations are readily available with speeds to 56G+

cStack™ & Custom Flex

- Designed for applications where flexibility, space, weight and performance are critical
- Available with BGA, LGA, SMT, press-fit or thru-hole connector terminations

Lynx™ QD

- Designed in multiple form factors: right angle, coplanar and vertical stacker
- Optimized for differential pair signaling to support PCIe Gen5 and 56G performance

M-Series™ 56

- Designed to support high technology products in board-to-board or flex assembly architectures from 4-15mm
- Next-generation differential pair contact design for 56G NRZ, 112G PAM4 performance

ARDENT CONCEPTS
An Amphenol Company

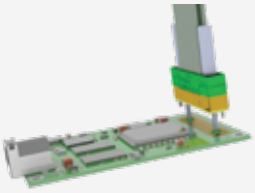
www.ardentconcepts.com

50 Ohm Coaxial RF Interposer

- Up to 70 GHz performance
- Patented technology provides exceptional RF performance
- Compression mount compliant contact eliminates soldered components

SK Series Family of Sockets

- Socket can be easily mounted and de-mounted with a few screws encouraging re-use across board revisions
- Durable 40 GHz+ socket solutions offer low loss connection for high performing devices



TR Multicoax Series

- Superior signal integrity up to 70 GHz
- Solderless system eliminates signal distortion for clean signal integrity
- Multiple form factors and channel counts available

CA Series Connectors and Interposers

- Bandwidth and performance beyond 32 Gb/s
- Pure vertical interface, no offset required

Storage & Server IO

www.amphenol-icc.com/storage-server-io

Double Density Cool Edge for Ultra Compact Design

- Designed to accommodate both high speed signal and power in a space-saving format using two rows of contacts

Slim Cool Edge for High Speed Hybrid Design

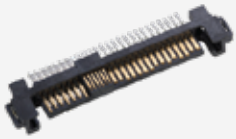
- Designed for high speed up to 32GT/s (or 56GT/s PAM4) capability

Mini Cool Edge for GENZ/EDSFF/OCP

- Designed to meet SFF TA1002, Gen Z, EDSFF, OCP

M.2 & PCIe GEN 4 and 5

- Meets industry standard PCIe 4.0 and 5.0 with high speed up to 32GT/s per differential signal pair



SAS PCIe (U.2 & U.3) 4.0 and 5.0

- Designed to meet SFF8639 and SFF8680 spec with high speed up to SAS 4.0 24Gb/s and PCIe 5.0 32GT/s

DDR4 and DDR5

- Designed to meet JEDEC SO-016, SO-017, SO-019 and SO-023 spec
- Vertical, right-angle orientations and SO-DIMM version available.

Power Solutions

www.amphenol-icc.com/power-solutions

EnergyEdge™ X-treme

- Available in straddle mount, right angle, right angle coplanar, and vertical configurations
- 3000W at 12V
- 25% increase in current linear desity
- 23% size reduction compared to traditional card edge connectors

PwrMAX® G2

- Next genration PwrMAX® - highest density blind-mate Power and Signal connector series
- 130A per contact and 18% size reduction
- Orthogonal, mezzanine, coplanar and right angle configurations available for both PCB and busbar applications

PwrBlade+® IO

- Up to 60A per contact (high power) & 25A per contact (low power), power & signal contacts are highly configurable wide range of wire sizes available

BarKlip® IO

- Up to 200A per contact, AGT® plating technology for ultra low resistance, ultrasonic welding provides lower voltage drop and greater overall efficiency

CoolPower® SDM

- Up to 35A per pin, high current Coolband or RADSOK® contact technology available, backplane coplaner and orthogonal configurations

PwrBlade Ultra®

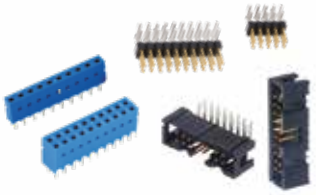
- Up to 75A per contact, ultra low resistance (0.4mΩ at end-of-life conditions), low profile height of 9.6mm for optimized airflow

FCi Basics

www.amphenol-icc.com/basics

WireLock®

- 1.80mm pitch, robust, low mating force
- USCAR-2 V2 compatible
- 3A per contact, TPA, CPA features

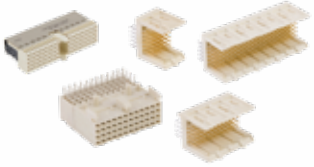


Modular Systems

- Dubox®, Quickie®, BergStik®, PV® 2.54mm, Minitek® 2.00mm
- Industry proven connector systems
- Board to Board, Wire/Cable to Board

OCTIS™ Outdoor IO

- Robust I/O for high realiability and performance

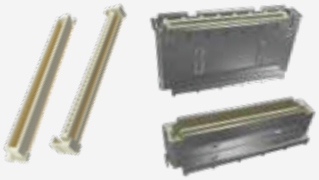


Industrial Backplane Connectors

- 2.00 mm Millipacs® series hard metric connector, 2mm Metral® series future bus connector & 2.54mm DIN 41612 connector for robust applications in the Industrial segment
- Features 2-beam twisted tulip contact which provides an equalized signal path

Minitek MicroSpace™

- 1.27/1.50mm pitch, compact, robust and versatile
- LV214 severity-2 compatible
- 4A per contact, TPA, CPA features



BergStak®

- 0.80mm pitch, high density family
- Wide range of positions and stack heights
- Speed up to 16Gb/s

Minitek® Pwr Family

- Full range solution for power application with a high current rating up to 23A per contact

High Temperature Backplane Connectors

- Feature-packed connectors designed for use in higher operating temperature applications. Compliant to EN45545

MicroSpeed®

- 1.00mm pitch, industrial grade reliability
- Speed up to 25Gb/s
- Superior EMI, EMC performance

BergStak® Secure Connector

- 1.00mm pitch, high security, high density
- Speed up to 32Gb/s
- EMI Shielding, support BMI

Custom Battery Connectors for EVs

- Robust customized battery/charger connectors and terminal solutions for E-bikes.
- Available in various pin configurations and connector sizes with current ratings up to 100A. IP67 sealed when mated

D-Sub Slimline

- Ultra slim body with contact alignment in a single row for significant saving in board space and with mating compatibility

Commercial IO

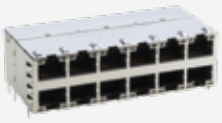
www.amphenol-icc.com/commercial-io

USB

- USB4 Gen 3 Type C connectors newly launched. Multi-protocol, high-speed USB solutions for next generation designs.
- Waterproof USB Type C with IPX4 to IPX8 rating

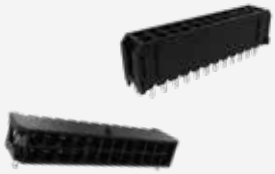
High Speed Interconnect

- Proven, high speed, low profile 0.60mm pitch connectors in 4X, 8X, 12X, 16X, 20X, 24X configurations. Meets PAM4 56G and PCIe 5.0 standards.
- SlimSAS™, SlimSAS™ Low Profile, Z-Link, Mini Cool Edge IO, Swift, Flash



RJMG

- Modular Jacks with integrated magnetics in stacked, ganged, multi-port, single port and RJ45-USB combinations
- Up to 10Gb/s and PoE 150W



Power Connectors

- Wire to Board connectors in 3.0 mm and 4.2mm pitch with current ratings from 6.5A to 20A per pin
- Designed for IT and Datacom applications
- Micro Power / Plus / Super 3.0, Mini Power / Plus / Super 4.2

High Speed Automotive

- Connectors for Automotive Electronics: HSD, HSC, HSBridge+, Netbridge

Fan Connectors

- Unique modular fan interconnect solutions for Servers, Storage and Data Center applications

Commercial Industrial

Lighting Connectors

- Zhaga Book and NEMA/ANSI compliant lighting connectors for indoor, outdoor and street lighting applications

Harsh Environment Connectors and Cables

- Ruggedized, IP67 sealed standard interfaces including RJ, USB, USBC, D-Subs, HDMI, and new/custom interfaces

ix Industrial Ethernet Connectors and Cables

- ix Industrial IP20 and IP67 interfaces for next generation, high speed, ruggedized Industrial Ethernet applications per IEC 61076-3-124

RJ / Modular Jacks

- Modular Jacks in stacked, ganged, multi-port and single port combinations.
- Meets Cat5e, Cat6, Cat6A specification performance levels

Single Pair Ethernet Connectors and Cables

- Single Pair Ethernet (SPE) IP20 and IP67 interfaces for next gen high speed, ruggedized Industrial Ethernet applications per IEC 63171-6

Industrial RJ Plugs and Cable Assemblies

- Ruggedized Industrial RJ plugs with IDC termination, metal latching and cable entry options
- Meets Cat6A performance specifications for use in factory and other applications

Amphenol ICC