Applications & Markets

5G Networks	**e-Mobility**	**Lighting**
Automotive	**Energy Storage Systems**	**Server & Storage**
Consumer	**IoT**	**Test & Measurement**
Data Centers	**Industry 4.0**	**Artificial Intelligence & Machine Learning**

amphenol-cs.com

Amphenol
COMMUNICATIONS SOLUTIONS

Solving Your Electronic Design Challenges

Content

Amphenol Overview

Amphenol Communications Solutions (ACS), a division of Amphenol Corporation, is a world leader in interconnect solutions for Communications, Mobile Consumer Products, RF, Optics, Broadband and Commercial electronics markets.
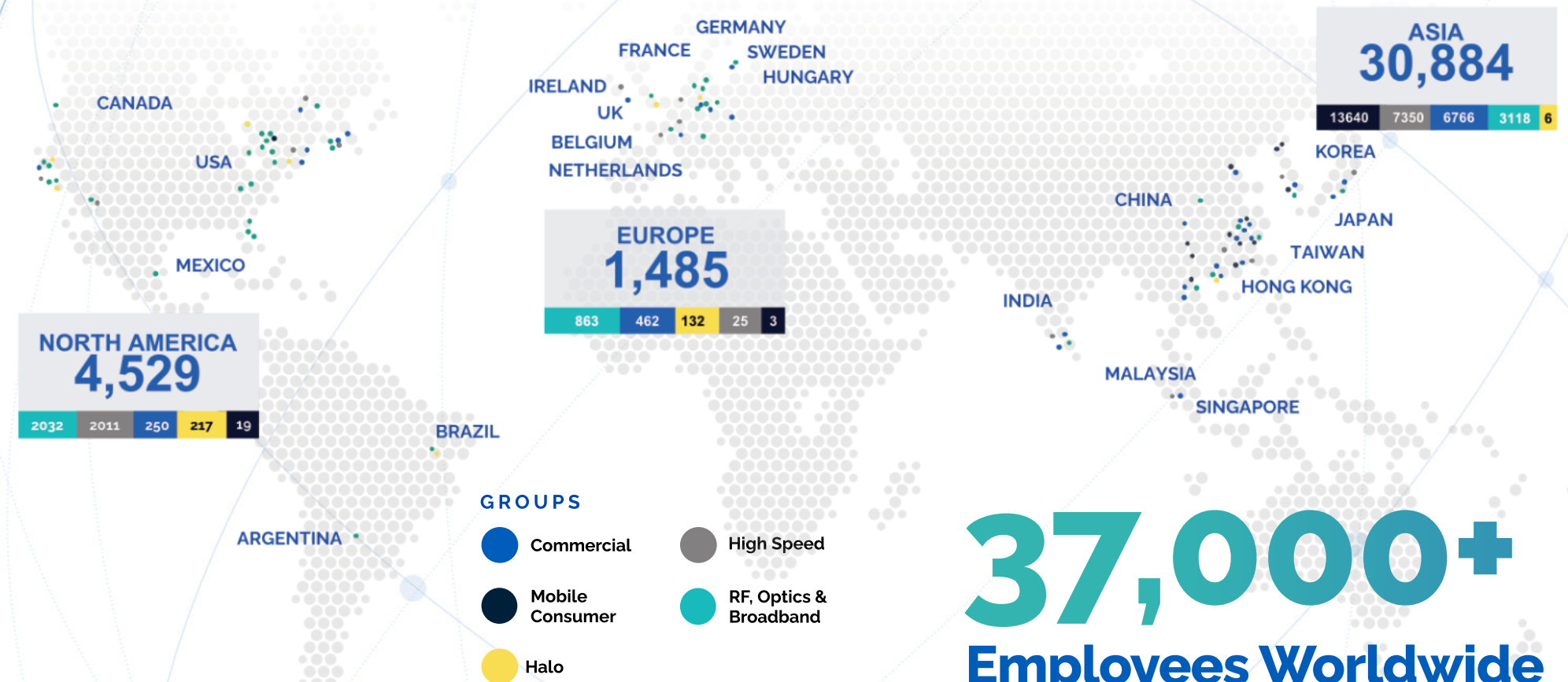
Amphenol Corporation is one of the world's largest designers and manufacturers of electrical, electronic and fiber optic connectors and interconnect systems, antennas, sensors and sensor-based products and coaxial and high-speed specialty cable.

ACS has an expansive global presence in research and development, manufacturing, and sales. We design and manufacture a wide range of innovative connectors as well as cable assemblies for diverse applications including server, storage, data center, mobile, RF, networking, industrial, business equipment and automotive.

Strong Global Presence

We place heavy emphasis on R&D for both new product and technology development, focusing on the advancement of the next generation of high-speed interconnects and power distribution solutions as well as innovative manufacturing solutions.

- Our R&D centers worldwide have registered thousands of patents and licensing agreements, developing some of the world's first innovations in connectors such as Shield-less High-Speed Connectors, Ball-Grid-Array Attachments, economical Stamped High-Power Contacts and cost effective yet reliable plating processes.

- We relentlessly seek improvements of our products, increasing our solutions' overall cost effectiveness, precision and reliability. This ensures that we meet or even surpass the ever changing needs and expectations of market trends.

ASIA
30,884

| 13640 | 7350 | 6766 | 3118 | 6 |

EUROPE
1,485

| 863 | 462 | 132 | 25 | 3 |

NORTH AMERICA
4,529

| 2032 | 2011 | 250 | 217 | 19 |

CANADA
USA
MEXICO
BRAZIL
ARGENTINA

GERMANY
FRANCE
SWEDEN
HUNGARY
IRELAND
UK
BELGIUM
NETHERLANDS

CHINA
KOREA
JAPAN
TAIWAN
HONG KONG
INDIA
MALAYSIA
SINGAPORE

GROUPS

- Commercial
- High Speed
- Mobile Consumer
- RF, Optics & Broadband
- Halo

37,000+
Employees Worldwide

APPLICATION SCOPE
5G Networks

The future of speed is at our fingertips with the advent of 5G — changing the way the world connects and communicates.

Baseband Unit

Amphenol offers interconnect solutions ranging from high-speed I/O connectors and cable assemblies, harsh environment connectors to power connectors and more for designing efficient functioning baseband units.

Remote Radio Units (RRU)/Antennas

From high speed rugged outdoor I/O connectors to Ethernet connectors and transceivers, Amphenol has the best solutions to offer for RRUs and Antennas.

Edge Servers / Edge Data Center

Edge servers can be simply described as high-power computers or servers which are placed near or at the "edge" of the 5G network. Our connector portfolio can address every edge server application.
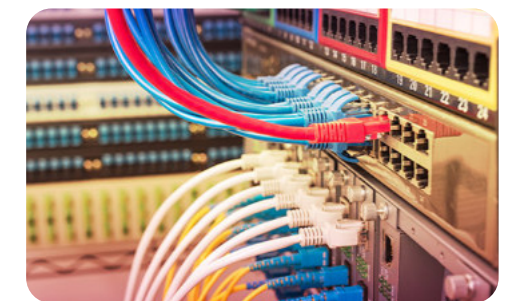
Network Switch & Gateway

Network gateways, switches and servers are an integral part of the 5G network, especially inside the 5G core, where all the post processing of the signal is carried out before being sent to the data centers.
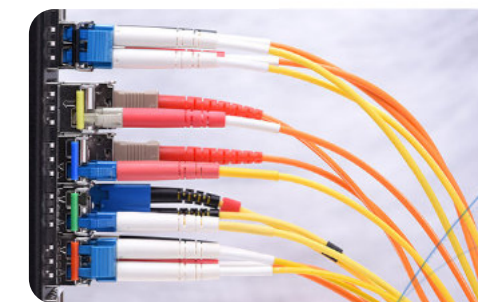
Transport / Fronthaul / Backhaul / Transponder

Transponders are interconnected units associated with the RRU or the BBU and play a large part in the transport of the 5G signal. Amphenol provides connectors that go inside the transponders and routers that assure a smooth run of the 5G transport.

Mini Cool Edge IO

- Up to 64Gb/s PAM4, PCIe® Gen 4, PCIe® Gen 5, PCIe® Gen 6, over 1.0 meter transmission distance
- 0.60mm pitch connectors support both cable and card edge connections
- Options for 92Ω, 85Ω and 95Ω impedance and various pin number options - meeting PCIe®/NVMe/SAS/SFP(+)/QSFP specifications

Multi-Trak™

- Combines original PCIe® and Mini Cool Edge IO in one connector to provide both power (21A) and high/low-speed signal
- Up to 56Gb/s PAM4, PCIe® Gen 5, and target PCIe® Gen 6
- Options for 85Ω impedance and various pin number options - meeting PCIe®/NVMe/SAS/OCP DC-MHS/ SFF-TA-1033 specifications

ExtremePort™ Z-Link

- Compliant with Gen-Z and OCP NIC specifications. SFF-TA-1002/1020 solution
- High speed of up to 56Gb/s PAM4
- Supports both cable and card edge applications

DDR SMT Memory module Connectors

- Designed to meet JEDEC SO-016, SO-017, SO-019 and SO-023 specs
- U DIMM/R/LR Socket, Metal tab, Standard/Narrow/ latch available

PSAS, SAS and SATA Connectors

- SAS connectors (29-pins) support hot plugging and blind mating of HDDs/SSDs. 2 signal lanes support up to 24Gb data rate (SAS 4.0).
- PSAS connectors (68pins) support SAS HDD and NVME SSDs with 2 SAS lanes supporting up to 24G data rate and 4 PCIe lanes supporting up to 32G (PSAS 5.0) data rates.

Compression, Board to Board Connectors and Interposer

- Provides a connection between either two PCB modules or one PCB and an electrical module
- Single-piece compression-type or two-piece board-to-board surface mount connectors

Mini Cool Edge for GENZ/EDSFF/OCP

- 0.60mm pitch connector, supports high speed up to 112G PAM4
- Designed to meet SFF TA1002, Gen Z, EDSFF, OCP NIC 3.0 specifications
- Vertical, right angle, straddle mount and orthogonal options are available

Double Density Cool Edge for Ultra Compact Design

- 0.80mm pitch, power and signal hybrid connector
- Highly configurable wafer design for differential, single-ended and power options
- Supports high speed of up to 32GT/s(or 56GT/s PAM4) capability

Standard Cool Edge 0.8mm for Automotive and 5G Antenna

- Robust design with EMI shielding for Automotive Ethernet and Power applications
- Hybrid option for small cell active antenna BTB application
- One-piece small form factor to save space

BergStak® Secure 1.00mm

- High security, high density
- EMI Shielding
- Speed up to 32Gb/s.

BergStak® 0.80mm

- Ideal for use in high density applications
- Wide range of positions and stack heights
- Speed up to 16 Gb/s.

ComboStak® 0.80mm / 2.00mm

- Hybrid and medium power solution
- 0.8A signal, 20A power
- Signal speed up to 12Gb/s.

PCIe® M.2 Gen 5 and Gen 4

- 67 contacts on 0.50mm pitch fully compliant with PCI-SIG PCIe® M.2 specification
- Dual Stacked, Shielded versions are available
- Right angle, vertical and various connector heights and keying options offered
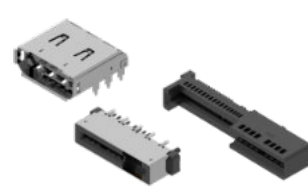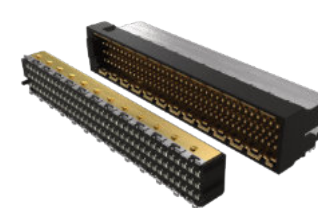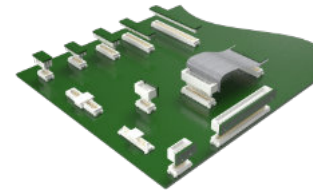
PCIe® Gen4 and Gen5

- X1, X4, X8, X16, X24, X32 standard links
- 1.00mm pitch, vertical and right angle with options for ridge, locked latch, side latch, blade hold down, open wall
- Extensive range include options for surface mount, through-hole solder, press-fit and straddle mount terminations and keying options offered

DDR5 SO-DIMM Connectors

- 262 positions connector in high-density design of 0.50mm pitch
- 4.00mm, 8.00mm, 5.20mm and 9.20mm height
- Right angle and vertical orientation with SMT mechanical hold-downs

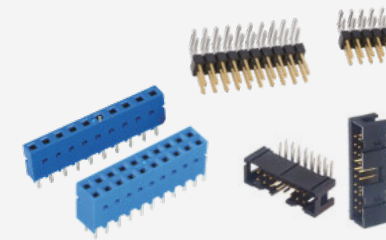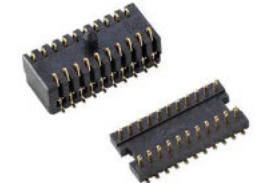## Conan® 1.00mm

- Secure, reliable connector
- Audible "click" to ensure perfect mating
- Speed up to 8 Gb/s.

Modular Systems 2.54mm/2.00mm

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

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

PwrBlade® MiniMezz

- Up to 50A per contact (high power) and 25A per contact (low power)
- Available stack heights range from 8mm to 20mm (tooled in 1mm increments)
- +/- 0.80mm gatherability for blind mate applications

PwrBlade® Mini Cable-to-Board Connector

- Rated up to 25A per power contact (50A/column) without exceeding 30°C temperature rise in still air
- Modular tooling design
- 12AWG for power contacts and 26AWG-22AWG available for signal contacts

PwrBlade® Mini Board-to-Board Connector

- Rated up to 45A per high power contact (4 adjacent contacts)
- Low profile 8.10mm height above board
- Modular tooling designs

PwrMAX® G2

- Highest density blind-mate Power and Signal connector series
- Up to 130A per contact and 18% size reduction
- Orthogonal, mezzanine, coplanar and right-angle configurations available for both PCB and busbar applications

High Temperature Backplane Connectors

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

Millipacs® Plus

- Configurable meeting designers' choice of signal data rates from 3Gbps to 25Gbps and power up to 40A and with multiple guiding options
- Compliant to Hardmetric equipment practice and complimentary to 2mm Millipacs standard
- Options for Hotswapping, EMI shielding and high temperature

PwrMAX® I/O Cable Connector System

- Rated up to 50A/Contact (100A/column) without exceeding 30°C temperature rise in still air
- Latching options available
- Patented GCS® and GXT® plating

PwrBlade® ULTRA HD

- Up to 85A per contact
- 2.0mm high density signal pitch
- Ultra-low profile height of 9.6mm above board for optimized airflow

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

Ruggedized

- Ruggedized, IP67 sealed
- Connectors & cables
- RJ, USB, USB-C, D-Sub, HDMI
- MRD Circular latching
- FLH rectangular latching
- Industrial, commercial, lighting

Single Pair Ethernet

- Next gen ruggedized interface
- IEC 63171-6, PoDL
- IP20 & IP67 connectors & cables
- Industrial Ethernet to the sensor and actuator level

ix Industrial Ethernet

- Next gen ruggedized interface
- IEC 61076-3-124, Cat6A, PoE++
- IP20 & IP67 connectors & cables
- ix-Mag with integrated magnetics
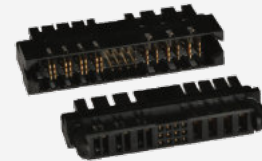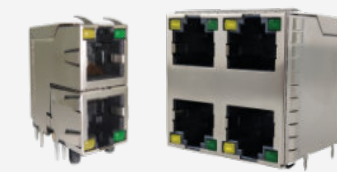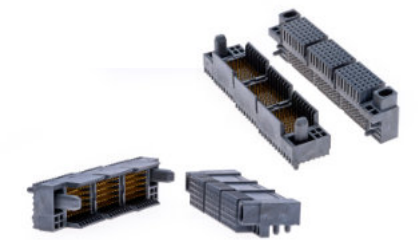- Factories, Robotics applications

SheerPwr®

- Available in 3.6mm, 6.0mm, and 8.0mm pin diameter options
- Large beam deflection range handles up to ±0.40mm of permanent misalignment
- Low 6.80mm connector height

CoolPower® SDM

- Up to 35A per pin, high current Coolband contact technology
- Backplane, coplanar, and orthogonal configurations available
- 2 position or 4 position available

EnergyEdge™ X-treme

- 3000W at 12V
- Available in straddle mount, right angle, right angle coplanar, and vertical configurations
- 25% increase in current linear density

SD/Micro SD Express Series Connectors

- PCIe Gen3*1/ Gen4*1 lane
- Backward compatible to UHS-I/UHS-II in one socket (3-in-1 solution)
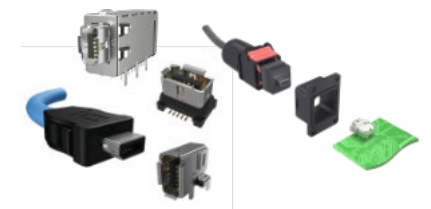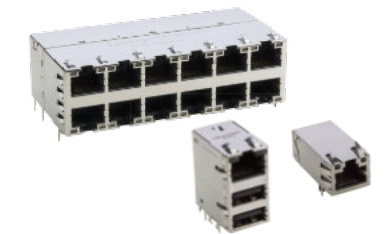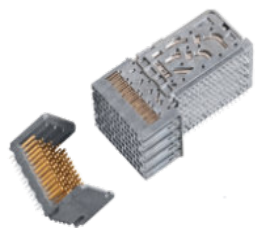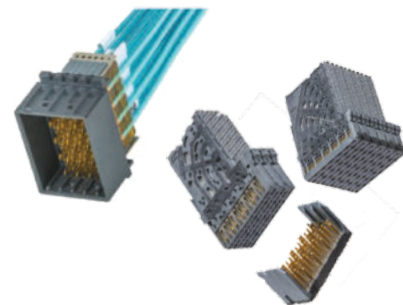- Push push/push pull structure

RJ / Modular Jacks

- Cat5, Cat5e, Cat6, Cat6A
- Single port, ganged, stacked multi-port, LEDs, shielded
- Vertical, right angle
- PoE++ capability
- Industrial, commercial, medical, consumer, military applications

RJMG

- 10/100T, 1GBT (10/100/1000-BT), 2.5G, 5G, 10G, Power Over Ethernet (PoE, 15W~150W) , integrated with surge protection.
- Commercial 0~70°C and industrial -40~85°C & -40~105°C .
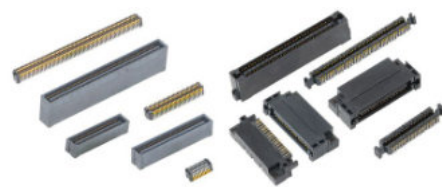- Meets IEEE802.3ab and supports various Ethernet PHY
-

High Speed

XCede® HD

SUPPORTS DESIGNS FROM 8G - 56G PAM4
The de-facto standard for high performance backplane designs with industry leading density. Supports Embedded Capacitors.

ExaMAX®

COST OPTIMIZED WITH SCALABLE PERFORMANCE TO 112G PAM4
Innovative design supports low insertion/extraction forces with reduced crosstalk and low insertion loss. Flexible architecture supports direct orthogonal, traditional backplane, coplanar and cable requirements.

ExaMEZZ®

COST OPTIMIZED WITH SCALABLE PERFORMANCE UP TO 112G PAM4
Innovative design supports low insertion/extraction forces along with reduced crosstalk and low insertion loss. Stacked height range from 14.5 to 67mm in 2- and 4- and 8-Pair configurations.

M-Series 56 Mezzanine Connectors

56GB/S HIGH SPEED MEZZANINE BGA CONNECTOR SYSTEM
Leveraging proven technologies, including an industry leading BGA design, offering superior self-aligning and self-leveling. With a next generation differential pair contact design for up to 56Gb/s NRZ and 112Gb/s PAM4 performance.

cLGA® Land Grid Array Socket System

HIGH PERFORMANCE, LOW COST CHIP-TO-BOARD APPLICATION
Designed to bring conventional connector material construction to high performance, low cost chip-to-board applications. Used in applications ranging from handheld computer products to supercomputer systems.

AirMax®

COST OPTIMIZED WITH SCALABLE PERFORMANCE UP TO 56G PAM4
Traditional backplane offering including standard and inverse gender. Standard is 3-, 4- and 5-Pair.
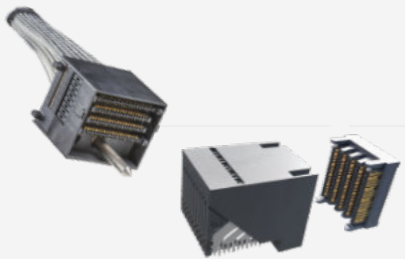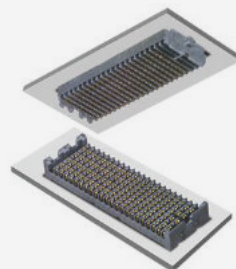
XCede®

SUPPORTS DESIGNS FROM 8G to 56G PAM4
Scalable and flexible design supports all your system requirements. Supports Embedded Capacitors; mechanically robust.

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 up to 8P.
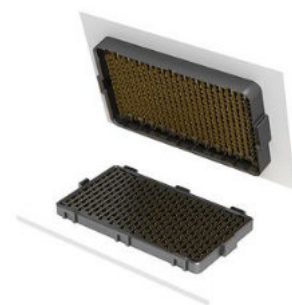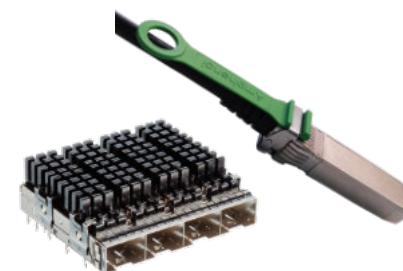
Paladin HD®

DENSITY OPTIMIZED PERFORMANCE BEYOND 112G PAM4; ROADMAP TO 224G
Achieves 144 diff pairs within 1U Orthogonal slot. Consistent signal integrity performance over the entire mating range. Flexible architecture supports right angle female, direct orthogonal, and cables up to 12P.
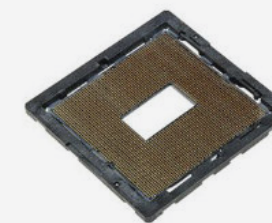
50G SFP56 LR Transceivers

SUPPORTS 53.12GB/S DATA RATE & LOW POWER.
The module is compliant with IEEE 802.3 cd, SFF-8472 Rev 12.4, and compatible with SFF-8432 and applicable portions of SFF-8431 Rev. 4.1.

ExtremePort™ QSFP DD 112G Connectors & Cable Assemblies

SUPPORTS PER PORT 200G, 400G AND 800G PAM4
8 lanes per cable – 28G, 56G & 112G per lane capability. Double the bandwidth per port vs. QSFP. Backwards plug compatibility with QSFP. Available in all 4x form factors.

QSFP28/56/112G Connectors & Cable Assemblies

SUPPORTS PER PORT DESIGNS FROM 100G, 200G AND 400G PAM4
4 lanes per cable – 28G, 56G and 112G per lane capability. Passive & active cables; 26AWG to 32AWG cable. Stacked, ganged and belly-to- belly connector and cage configurations. Available in all 4x form factors.

Lynx™ & Lynx™ QD

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR
Low-profile flexible open pin field design available in 4-15mm heights at .6mm contact pitch, designed in multiple form factors. Optimized for density and cost. Supports data rates up to 28 Gb/s with PCIe Gen5 and 56G performance.

Chameleon®

ADAPT AND ADVANCE TO THE NEXT GENERATION
With performance speeds up to 25 Gbps+, Chameleon meets the demand for faster, smaller and more compact connector solutions. Chameleon delivers a new level of performance unlike any other platform connector on the market today.

cStack™

CUSTOMIZABLE SOLDERLESS INTERPOSER-BASED ONE-PIECE STACKER
The Amphenol cStack™ high speed solderless interconnect solution provides limitless flexibility for board-to-board mezzanine applications and board-to-board stackable and coplanar applications when terminated to a flex circuit.

ExtremePort™ SFP112G Connectors & Cable Assemblies

SUPPORTS DESIGNS FROM 28G, 56G, PAM4 And 112G PAM4. Passive & active cables; 26AWG to 32AWG cable. Stacked, ganged and belly-to-belly board connector and cage configurations with heat sinks and light pipes. Available in all 4x form factors.

DensiLink® OverPass™ Assemblies

112G DOUBLE ENDED HIGH PERFORMANCE CABLING INTERCONNECT
DensiLink® OverPass™ products remove high speed signaling from the PCB and create a double ended, high performance cabling interconnect. These cables support 56G and 112G signaling in hardware system designs.

TR Multicoax Connector

HIGHEST DENSITY HIGH SPEED COAX CONNECTOR
TR Multicoax delivers superior signal integrity from multiple high speed analog or digital channels. With a choice of 20GHz, 40GHz, or 70GHz configurations, users can upgrade their connectors according to bandwidth requirements on their application.

APPLICATION SCOPE

Automotive

Amphenol has a successful history providing interconnect solutions that adhere to industry standards like USCAR and meeting LV214 severity levels.

EV Charging

With a wide portfolio of power products supporting 15A-1000A ratings, low contact resistance, high thermal support and component modularity, Amphenol offers the most efficient solutions for the modern EV charging station.


Automotive Lighting

Modern automobiles are rich with ADAS features like smart LED lighting for adaptive headlights, and superior interior lighting. Amphenol provides a range of advanced USCAR2 compliant connectors like Minitek Microspace™, which are compact and meet LV214 standards.

Advanced Electronics Systems

Amphenol brings a broad array of innovative technology and solutions to support the growth in the automotive industry, particularly in plating, signal integrity performance, and power management.
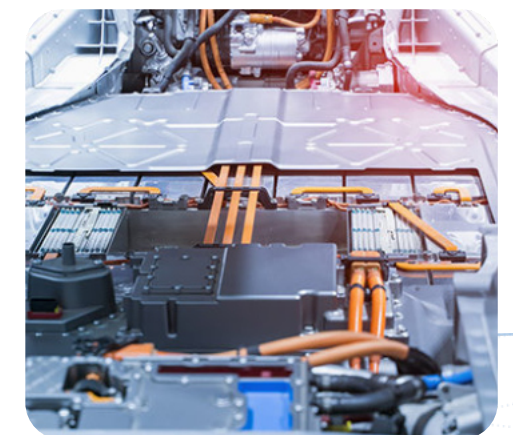
Battery Management Systems

The battery is considered as the strategic component of any electric vehicle. Amphenol offers a range of compact, flexible high performing automotive grade connectors for these power circuit designs.

Automotive

NETBridge+™ Automotive Ethernet Connector System

USCAR-2 COMPLIANT AUTOMOTIVE ETHERNET CONNECTORS NETBridge+™ Automotive Ethernet Connector System is designed for automotive applications and can transmit up to 100Mb/s and 1Gb/s according to IEEE 100BASE-T1 and 1000BASE-T1 and will be upgraded to 10Gb/s.

HSC Connector System

USCAR-2 COMPLIANT COMPACT HIGH SPEED INTERCONNECT SYSTEM
HSC connector system is a fully shielded interconnect system that supports data rates up to 1Gb/s and more. With 0.50mm square terminals, it allows a lighter and smaller connector design.

FloatCombo™ 0.50mm Floating Board-to-Board Connectors with Power Pin

HIGH SPEED HIGH CURRENT POWER PIN BOARD-TO-BOARD CONNECTORS 0.50mm pitch floating board-to-board connector system with power pin is designed for applications that need large current and space saving.

Ve-NET™ Multigigabit Differential Connector System

Automotive-grade Ethernet solution developed according to USCAR-2 & LV214, along with miniaturized and various sealed/non-sealed configurations; Featured high data rates up to 50Gbps per port and highly compact and robust to fulfill automotive applications such as camera systems, ADAS, and Autonomous Driving. Supports Automotive Ethernet, LVDS, APIX 3 PCIe and FPD4.

HSD (High Speed Data) Connector System

COMPLIANT WITH USCAR-2 SPECS HSD connector system is a fully shielded interconnect system that can be used with shielded twisted quad cables. It has a high performance digital system for low-voltage differential signals which prevents interference from crosstalk and external sources.

2.00mm FFC/FPC connectors with Autolock Mechanism

NON-ZIF FLEX CONNECTOR WITH AUTOLOCK
LV214 S1 qualified non-ZIF flex connector with an autolock mechanism and surface mount termination.

HSBridge+ Connector System

USCAR-2 COMPLIANT AUTOMOTIVE GRADE USB TYPE C CONNECTOR
HSBridge+ connectors come with automotive grade USB Type C interface. These connectors have headers compliant to USCAR-30 USB and are performance tested according to USCAR-2.

0.80mm Floating Board-to-Board Connectors - B406/B407/B410 Series

HIGH SPEED BOARD-TO-BOARD WITH FLOATING MECHANISM
Amphenol's B406/B407/B410 series are 0.80mm pitch floating board-to-board connectors which support stack heights up to 23mm and positions from 30 to 120.

0.50mm FFC/FPC Connectors with Autolock Mechanism - F308/F332 Series

RIGHT ANGLE NON-ZIF FLEX AUTOLOCK CONNECTORS
USCAR-2 T3V2 qualified 0.50mm pitch right angle non-ZIF flex connector with an auto lock mechanism and surface mount termination.
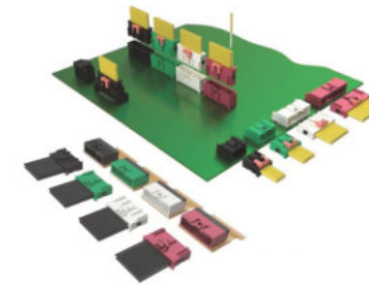
Automotive Grade PCI Express® Gen 5 Card Edge Connectors

EXTEND DIFFERENTIAL SIGNALING TO 32GT/S FOR NEXT-GENERATION SYSTEMS
Amphenol's PCIe® Gen 5 straddle mount connectors outperform the industry standards with higher speed and are USCAR compliant.

FlexLock™ FPC-to-Board Connectors

MORE FLEXIBLE SOLDERING AUTOMOTIVE GRADE CONNECTOR SYSTEM
FlexLock™ FPC-to-Board connector's compact design address the growing demand for automotive application market. The connector design is compliant to

Minitek MicroSpaceXS™ 1.27mm Crimp-to-Wire Connector Platform

COMPACT, ROBUST AND VERSATILE CONNECTOR SYSTEM
Minitek MicroSpaceXS™ Crimp-to-Wire connector platform's unique design meets LV214 Severity-3 and USCAR-T2V2 specifications.
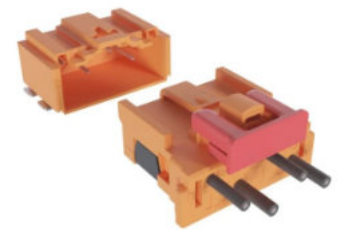
Automotive Grade PCIe® M.2 Gen 4 Card Edge Connectors

HIGH DENSITY HIGH PERFORMANCE CONNECTOR
Amphenol's PCIe® M.2 Gen 4 USCAR compliant connectors provide 67 contacts on 0.50mm pitch and signal transmission speed of 16Gb/s.

WireLock®

RELIABILITY LOW MATING FORCE AUTOMOTIVE GRADE CONNECTOR SYSTEM
WireLock® is a 1.80mm pitch wire-to-board and flex-to-wire connector system. It's compact design addresses the growing need for space saving automotive-grade connectors. WireLock® is a double row connector system offering four coding types.

Minitek MicroSpaceXS™ Waterproof 1.27mm Crimp-to-Wire Connector Platform

COMPACT, ROBUST AND VERSATILE CONNECTOR SYSTEM
Minitek MicroSpaceXS™ Waterproof Crimpto-Wire connector platform's unique design is compatible to LV214 Severity-3 and USCAR-T2V2 specifications.

FlexFast™ Flex to Board Connector Solution

Small size and low height flex to board connection solution. Compliant to USCAR2 and LV214 and designed for BMS, battery pack, Inverter+DCDC applications.

Minitek MicroSpace™ High Voltage selective loaded Crimp-to-Wire Connector Platform

COMPACT, ROBUST AND VERSATILE CONNECTOR SYSTEM
Minitek MicroSpace™ High Voltage selective loaded Crimp-to-Wire connector platform's unique design enables LV214 Severity-2 and performs at 3.81mm, 6.35mm, and 8.89mm pitch with 400V, 800V and 1200V.

DuraEV™

PORTABLE AND FIXED BATTERY CHARGING AND DISCHARGING CONNECTORS
DuraEV™ is a standard connector solution offered with 2 power and 4/6 signal pins which employs a patented contact system that is capable of carrying a continuous current from 15A up to 70A with 10,000 mating cycles.

AUTOMOTIVE

16 Applications & Markets   amphenol-cs.com 17

BarKlip® XP Connectors for EV Charging

HIGH POWER AND LOW RESISTANCE BUSBAR CONNECTOR FOR EV CHARGING STATIONS.
Amphenol's BarKlip® XP connectors feature independent points of contacts that provide overall lower resistance and greater overall efficiency.
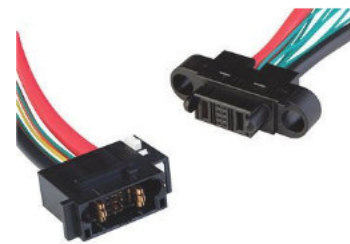
BarKlip® BK200 I/O for EV Charging

DIRECT PLUGGABLE CLIP THAT CONNECTS TO BUSBARS IN EV CHARGING STATIONS
Amphenol's BarKlip® BK200 I/O provides a convenient method of distributing up to 200A between busbars, cables and circuit boards. It features 14 fully independent cantilevered beams, providing a true compliant spring to adjust for variations in busbar alignment and surface finish.

CoolPower® SDM Connectors for EV Charging

HIGH CURRENT COOLBAND POWER CONTACTS FOR MAXIMUM PERFORMANCE IN EV CHARGING STATIONS
CoolPower® Slim Drawer Mini (SDM) Connectors offer a high level of mating configuration flexibility, current density, and a thin profile making it ideal for compact board to-board power interconnects.

PwrBlade® Connector

The PwrBlade® power distribution connector system from Amphenol includes power and signal contacts to provide power distribution and power control in a single connector.

PwrBlade® Cable Assembly

The PwrBlade® cable connectors are designed to mate to PwrBlade® right-angle or vertical board-mounted headers. By expanding beyond board-to-board applications, designers can now connect power supplies and power distribution subassemblies in a wider range of applications.

PwrBlade+® Cable Connectors for EV Charging

PwrBlade+® cable connectors offer flexibility to meet a wide variety of customer needs. The connectors come in both Cable-To-Cable and Cable-To-Board solutions.

PwrBlade+® Connector for EV Charging

The PwrBlade+® connector is a next generation AC/DC power distribution connector system for demanding applications requiring higher linear current density and low power loss.
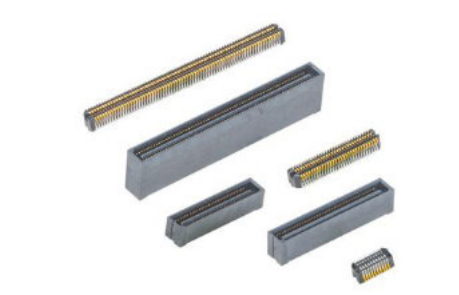
High Speed

RF

MEG-Array®

INDUSTRY-PROVEN BGA ARRAY CONNECTOR The MEG-Array ® Mezzanine Connector system provides the high density and high-speed benefits of a large array supported by the reliability and low costs of standard surface mount PCB assembly.

MEG-Array® R+

56GB/S HIGH SPEED MEZZANINE BGA CONNECTOR SYSTEM
Leveraging proven technologies, including an industry leading BGA design, offering superior self-aligning and self-leveling.
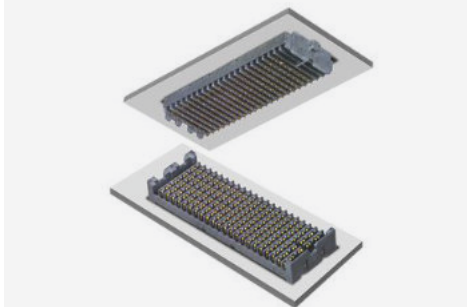
Lynx™

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR Amphenol's Lynx™ is a 4-row product offering doubling the density in a 2-row footprint that is suitable for a wide variety of applications in datacom, enterprise server, telecommunication, industrial.

AUTOMATE® Mini-FAKRA Connectors

The AUTOMATE® Mini-FAKRA connector series is a space-conscious, high-performance interface capable of supporting data transfer rates up to 20 Gbps. Ideal for compute modules, wire harnesses and camera applications. Custom sealed solutions available.

AUTOMATE® Mini-FAKRA Cable Assemblies

AUTOMATE® Mini-FAKRA cables assemblies are designed with a compact, modular housing and available in multi-port configurations for camera and other high-bandwidth automotive applications. High-performance up to 9 GHz with secure and easy mating and unmating.

FAKRA Connectors

Color-coded and mechanically keyed for easy installation and to prevent mismating, the FAKRA interface is available in IP67 and non-IP67 PCB and cable-mount configurations designed to perform up to 6 GHz. Commonly used in compute modules, wire harnesses and camera applications.

Lynx™ QD

THE QUAD DIFFERENTIAL SOLUTION Optimized for differential pair signaling, Lynx™ QD sets a new standard for density and flexibility that offers an innovative, high performance interconnect with PCIe® Gen 5 support.

Chameleon®

ADAPT AND ADVANCE TO THE NEXT GENERATION
With performance speeds up to 25 Gbps+, Chameleon meets the demand for faster, smaller and more compact connector solutions. Chameleon delivers a new level of performance unlike any other platform connector on the market today.
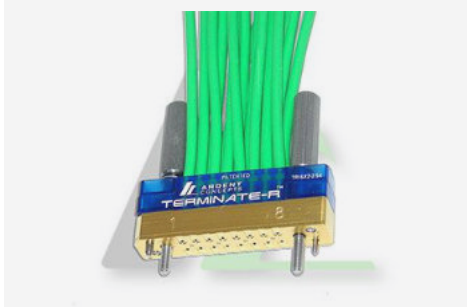
InfinX®

OPTIMIZED FOR PERFORMANCE AND DIFFERENTAIL PAIR SIGNALING
The InfinX® high-speed mezzanine connector solution is designed to meet the needs of 25+Gb/s applications. Available in 4- and 6-Pair configurations, InfinX is your best choice for high speed board-to-board applications.
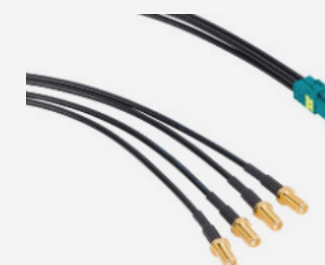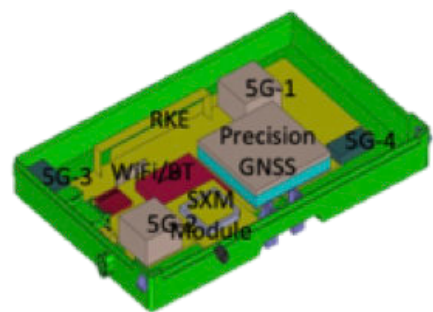
Smart Antenna Interconnect

Consolidates wireless functions into a single module that utilizes custom RF products to enable the mounting of these modules directly to external vehicle antennas. Ruggedized for use in automotive environments against mechanical and environmental stresses.

Camera Module Interconnect

Custom camera backs and high-float blindmateable internal interconnect connect high bandwidth camera modules used for ADAS, 360 surround view and safety applications. External connectivity options include FAKRA, Mini-FAKRA and pre-terminated cable with an overmolded strain relief.
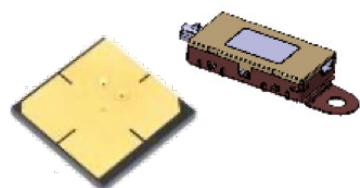
FAKRA to AMC/AMC4 Cable Assemblies

FAKRA to AMC and AMC4 assemblies combine the automotive industry-standard FAKRA connector with the ultraminiature AMC or AMC4 connectors on micro-coax cable. Ideal for tight spaces, these configurations are commonly used to connect cameras, antennas, sensors or other devices in the cab of a vehicle. Custom solutions are available.

cStack™

CUSTOMIZABLE SOLDERLESS INTERPOSER-BASED ONE-PIECE STACKER The Amphenol cStack™ high speed solderless interconnect solution provides limitless flexibility for board-to-board mezzanine applications and board-to-board stackable and coplanar applications.

TR Multicoax

Highest Density High Speed Coax Connector TR Multicoax delivers superior signal integrity from multiple high speed analog or digital channels. With a choice of 20GHz, 40GHz, or 70GHz configurations, users can upgrade their connectors according to bandwidth requirements on their application.

FAKRA to FAKRA Cable Assemblies

FAKRA to FAKRA assemblies are used to connect cameras, antennas, sensors and other devices to a vehicles ECU or compute modules. Standard configurations feature straight and right-angle FAKRA plugs and jacks terminated to RG-174 or RG-58 low loss cable. Custom FAKRA cable assemblies and harnesses are available in any configuration utilizing a wide array of automotive cable types.

SAA Automotive Antennas

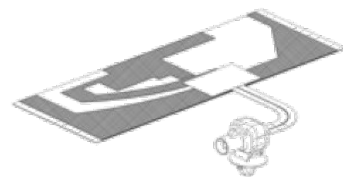## Smart antenna Modules

- Receiver / Tuner next to Antenna
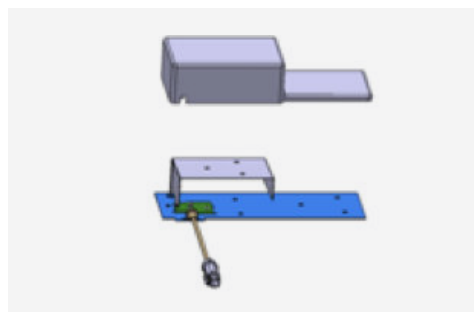- MIMO Antenna
- Digital communication HSD /
- Ethernet

Data Communication

- GSM to LTE / Future 5G
- Telematic Data

Autonomous Driving

- GPS / Glonass / Galileo
- Precision GNSS Recognition
- Car 2 X communication
- Traffic data broadcasting

Passive and active antenna components
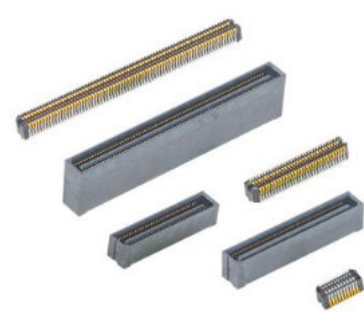
- Amplifier LNA
- Swtiches / Gateways
- Multiplexer / Splitter

Comfort and Safety: Low Frequency – Short range

- Bluetooth / WIFI
- Wireless Chargin
- Keyless Entry
- TPMS

Remote Controlled Functions

- Keyless Entry
- Remote HVAC Control
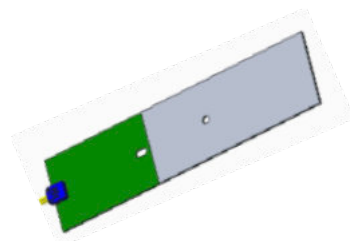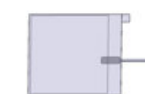- Vehicle Pre Condition

Antenna wiring solutions

- FAKRA / Coax
- HSD
- Ethernet

Broadcast / Infotainment

- Satellite Radio SDARS
- Television UHF/VHF
- Glass Antennas
- FM / AM Radio
- DAB Radio
- DTV

Hidden 5G

Transparent Antenna

V2X
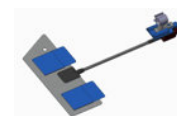
LTE/WIFI

Spoiler Ant AM/FM/DAB

AM/FM LNA

Battery coil

AM/FM/DAB Printed on glass
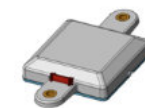
Battery coil

GPS

V2X Compensator

NFC/Reader
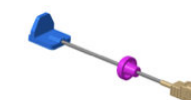
V2X Antenna

Sharkfin Antenna 5G,GNSS,V2X,WIFI

Battery coil

BT/UWB Module
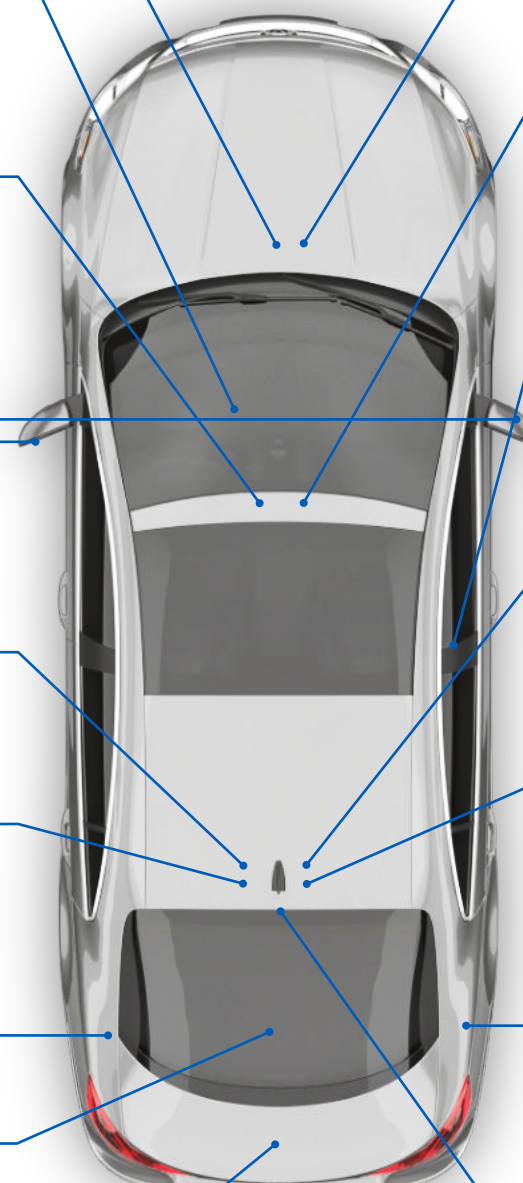
ACCELERATE
EV Infrastructure

with Amphenol Charles Industries

Charles
an **Amphenol** company
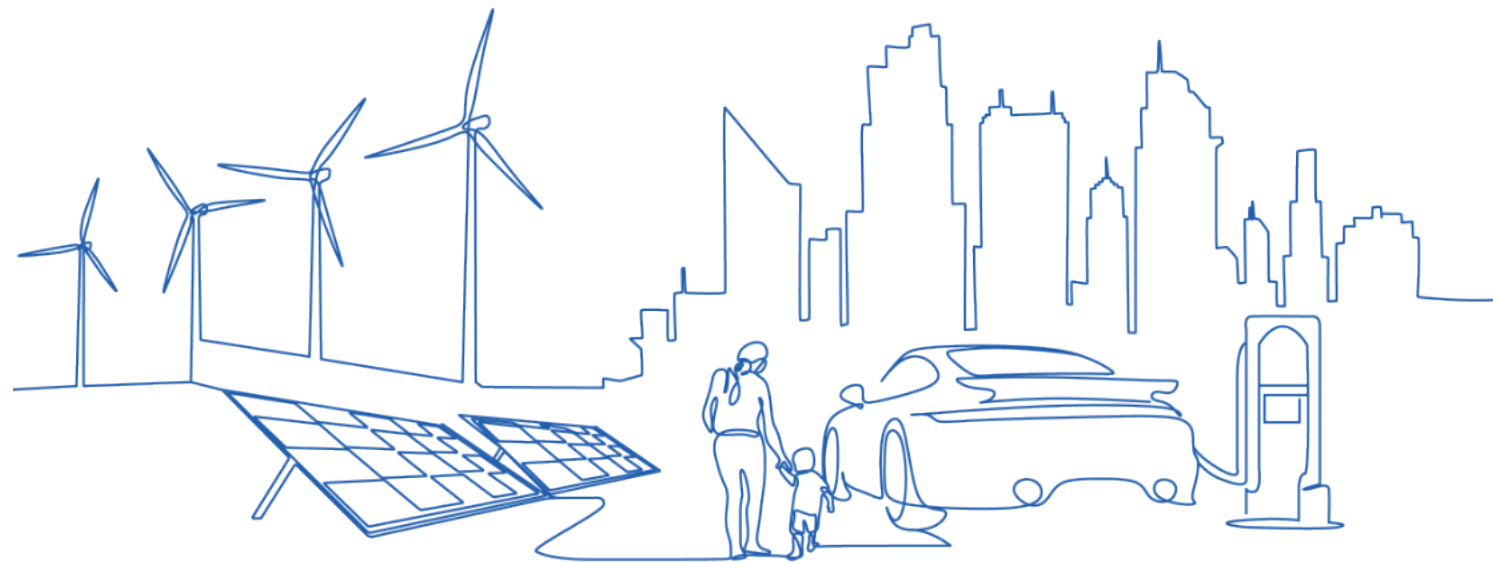
Future forward with *Fast-Tracked* EV adoption

With climate change becoming an increasing area of concern, the US federal government has turned its focus to improving air quality, with a goal of achieving net zero greenhouse gas (GHG) emissions by 2050. Automobiles account for nearly one-fifth of these emissions, so a key driver to reducing emissions is a transition to greater use of electric vehicles (EV). Deploying EVs to government employees will go a long way towards achieving this goal.

Even without this added commitment to EVs, EV sales to individual consumers in the United States have climbed by more than 40% each year on average since 2016.

One of the top concerns among US consumers regarding EVs is the nation's limited network of battery charging stations and charging issues. To keep EVs powered up requires setting up public charging stations that need to be economical, equitably distributed, appealing to use, and wired to a robust power grid.

Amphenol Charles offers a competitive edge to companies that want to help this emerging market and provide reliable solutions that can be deployed rapidly and efficiently. Also, with the nation experiencing significant labor challenges, Amphenol Charles' products and solutions enable more deployments with limited resources.

50+	**20M+**	**24/7**	**1000+**
years of experience in manufacturing innovative enclosed solutions	enclosures deployed for various markets	Technical Customer Service available	products to choose from and can be customized to fit your needs

The Electric Vehicle Charging Infrastructure Market Size is expected to reach at USD 182.9 Billion by 2030, registering a CAGR of 30.2%, owing to rising adoption of Electric Vehicles. China and Germany are at the forefront of the transition to electric mobility. China was the leading country for the technological development of electric vehicles, whereas Germany scored the highest in current customer demand. The US and Canada combined have around 55,000 level 2 and DC fast-charging public stations. This number is far from future anticipated needs.

Ultimately growth in EV sales will warrant a network of publicly accessible fast chargers to:
• Enable longer trips in an EV
• Encourage buyers who lack access to private charging to consider an EV
• Tackle range anxiety as a barrier to EV adoption

Simplified EV Infrastructure solution from Amphenol Charles Industries

With the EV adoption gaining momentum, the government faces never-ending challenges ranging from supply chain issues, massive electricity demand, investment in costly hardware, planning, and installation costs, estimated to be more than $35 billion throughout 2030. Amphenol Charles Industries' communication and network, energy storage, enclosures and rapid installation solutions can significantly reduce time and cost. Let's explore how:

EV Charging Back & Front End Infrastructure
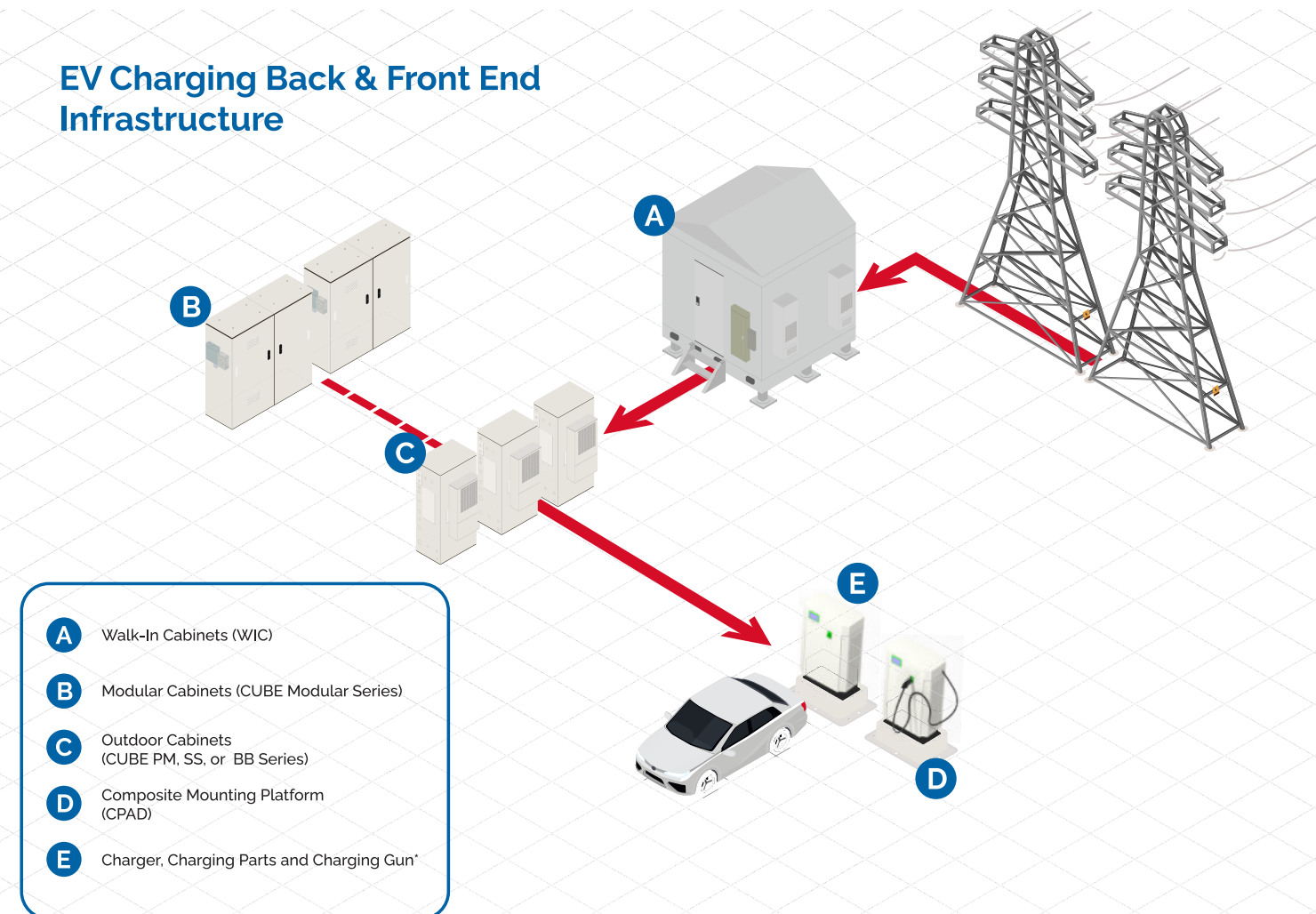
A Walk-In Cabinets (WIC)

B Modular Cabinets (CUBE Modular Series)

C Outdoor Cabinets (CUBE PM, SS, or BB Series)

D Composite Mounting Platform (CPAD)

E Charger, Charging Parts and Charging Gun*

Charles
an **Amphenol** company

*Charger parts include but not limited to Busbars, HV orange jumpers, Terminal blocks, Communication connectors (M12/Ehternet), Cable harness, and more. Wide variety of EV Charging Guns and Inlets are available.

The Amphenol Charles Solutions

Durable 12 gauge welded steel construction

Motion sensitive exterior lights for safety & convenience

High temperature, thermal system failure, and intrusion alarms available

Ideal for extreme temperature environments

Technician-friendly enclosure - no exposure to the elements while working

Walk-In Cabinet
WIC

The Walk-in Cabinet (WIC) is designed for remote base stations as an energy efficient, cost-saving alternative to concrete shelters and huts. The WIC offers ample space for customer installed equipment. It includes the exclusive Charles Thermal Management System (CTMS) and the Intelligent Ventilation System (IVS), which carefully regulate the interior temperature to ensure optimal performance.

Energy Storage & Communications Solution

Total flexibility to meet many applications

Option to add more bays in the field to accommodate growth

Rapid deployment in the field

Modular Cabinets
CUBE Modular Series

Our series of Modular Cabinets (MC) offer the most versatile solution for outdoor deployments. The cabinet consists of multiple standard bays that can be mixed and matched into any configuration needed for an application. Specify the number and types of bays needed, as well as the power system, thermal unit and many other options.

Communications Solution

Multiple thermal options available

Rugged and compact for today's dynamic EV site needs

Pad Mount Equipment Cabinets
CUBE PM Series

The CUBE-PM series enclosures are designed for high density installations of network equipment in outdoor environments. Easily mounted on a concrete or composite pad.

Rapid Installation Solution

Made from durable composite materials

Lightweight

Simplified installation
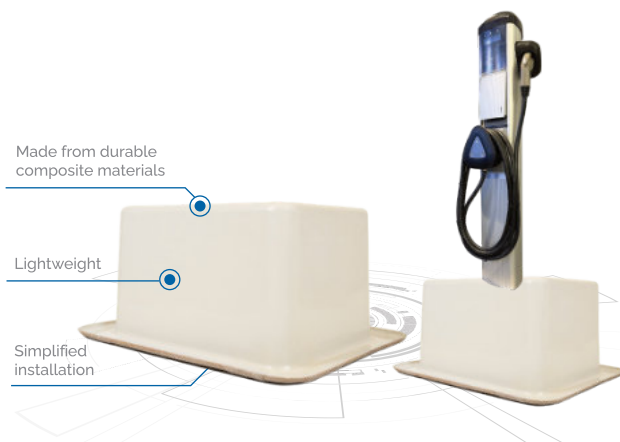
Composite Mounting Platform
CPAD

Charles Composite Pads (CPAD) are economical alternatives to poured-in-place or precast concrete pads. They reduce time and labor at the time of installation. CPADs can be deployed in a single day, vs. waiting for a new concrete pad to be poured and cured.

Page 3

About Amphenol Charles Industries

Founded in 1968, Charles Industries, LLC is a manufacturing and technology company based in Schaumburg, Illinois with five U.S. and two Mexican manufacturing centers. We offer a comprehensive line of active and passive, metallic and non-metallic environmental enclosure solutions for communications and power distribution applications.

Supplying telecommunications, wireless, broadband cable, utility, and industrial markets worldwide, we're proud of our Midwest manufacturing roots that strengthen our position in an ever-changing marketplace.

In April 2019, Charles was acquired by Amphenol Corporation, a world leader in the antenna, optics and interconnect solutions with over 74,000 employees worldwide. Today, Charles operates as an Amphenol Company and is leveraging Amphenol's global resources and innovative technologies to create new, bundled solutions for our customers.

We offer the following:

- Cabinet & Enclosures
- Concealment & Pole Solutions
- Pedestals & Housings
- Fiber Optic Solutions
- Below Grade Enclosres
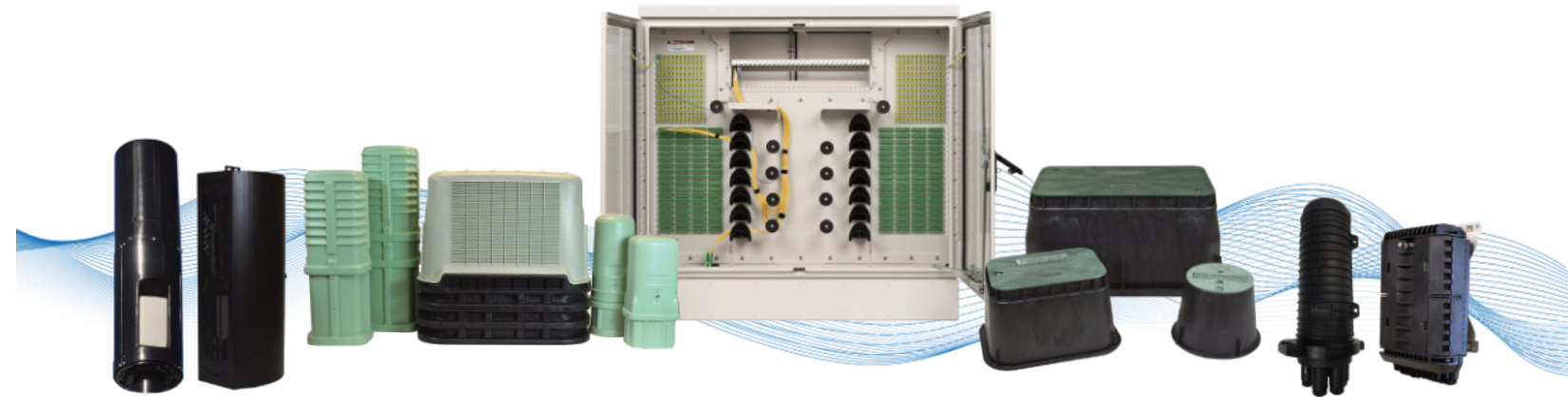
Protecting the connections that bring people together

Visit www.charlesindustries.com to see our full line of products

APPLICATION SCOPE
Consumer

Amphenol is ready with excellent interconnect solutions that are capable of operating precisely and efficiently to meet the new levels of connectivity and convenience over a wide range of consumer applications.
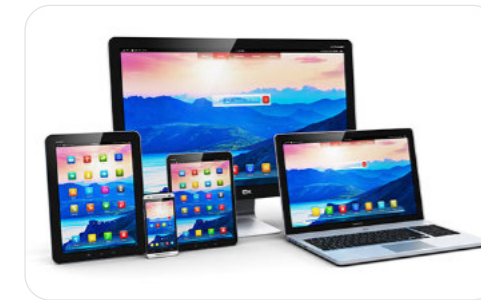
Desktop / Notebook Computers

Amphenol has a track record in supplying the right choice of connectors addressing various components of a desktop computer including Motherboards, power supply units, storage. Also provides a range of connectors suiting the battery management, trackpad, high def cameras, USB4 connectors and storage drives of powerful Notebooks.

Power Tools

Amphenol provides a choice of connectors to charge up battery-operated cordless power tools like drills, jackhammers, saws, and sanders.

Personal Care Products

Amphenol has an array of compact, high performance Input Output, Board-to-Board and Wire-To-Board solutions that service the PCBs, power supply units, and motors of these devices so that they keep us satisfied with the highest quality, precision, and perfection.

Home Appliances

To meet next generation smart home requirements, Amphenol connectors are designed to support increasingly sophisticated home appliances requiring integrated features like wireless connectivity and sensing capabilities.

Wearables

Amphenol's focus on innovation enables us to provide our customers an array of miniature, high performance interconnect solutions for next generation wearable devices.

E-Bikes

E-bikes set standards for the next generation light-mobility, with safer, greener, and comfortable rides. Amphenol provides high power and reliable battery support that ensures uninterrupted performance for longer durations.

PCIe® M.2 Gen 5 and Gen 4

- 67 contacts on 0.50mm pitch fully compliant with PCI-SIG PCIe® M.2 specification
- Dual Stacked, Shielded versions are available
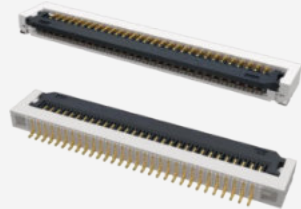- Right angle, vertical and various connector heights and keying options offered

DDR5 SO-DIMM Connectors

- 262 positions connector in high-density design of 0.50mm pitch
- 4.00mm, 8.00mm, 5.20mm and 9.20mm height
- Right angle and vertical orientation with SMT mechanical hold-downs

Compression, Board to Board Connectors and Interposer

- Provides a connection between either two PCB modules or one PCB and an electrical module
- Single-piece compression-type or two-piece board-to-board surface mount connectors

Minitek® Pwr Connector and Cable Assemblies

- Complete interconnect solutions for wire-to-wire and wire-to-board
- Available in pitch sizes of 3.00mm, 4.20mm and 5.70mm
- Current ratings from 5A to 28A

Custom Battery Pack Connectors

- Robust battery pack charger connectors and terminal solutions for cordless power tools, lawnmowers, cordless vacuum cleaners, and personal care devices
- Available in various pin configurations and connector sizes with current ratings up to 45A.
- IP67 rated in both mated and unmated condition

Modular Systems 2.54mm/2.00mm

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

PSAS, SAS and SATA Connectors

- SAS connectors (29-pins) support hot plugging and blind mating of HDDs/SSDs, 2 signal lanes support up to 24Gb data rate (SAS 4.0).
- PSAS connectors (68pins) support SAS HDD and NVME SSDs with 2 SAS lanes supporting up to 24G data rate and 4 PCIe lanes supporting up to 32G (PSAS 5.0) data rates.

USB Type-C Connectors

- Performs to USB4 and Thunderbolt4 high-speed specifications, and backward compatible with USB3.2 Gen1 and Gen2
- Waterproof versions featuring unique O-ring technology (LIM) perform up to IPX8
- Supports up to 240W (5A/48V) power supply

SD/Micro SD Express Series Connectors

- PCIe Gen3*1/ Gen4*1 lane
- Backward compatible to UHS-I/UHS-II in one socket (3-in-1 solution)
- Push push/push pull structure

ComboStak® 0.80mm / 2.00mm

- Hybrid and medium power solution
- 0.8A signal, 20A power
- Signal speed up to 12Gb/s.

Conan® 1.00mm

- Secure, reliable connector
- Audible "click" to ensure perfect mating
- Speed up to 8 Gb/s.

ComboLock® 1.00mm/3.00mm

- Compact, hybrid wire-to-board connector.
- Active Positive Latching
- 1.5A signal, 10A power

DisplayPort 2.1 Connectors

- DP2.1, UHBR20, 80Gbps/4 Lanes, 85ohm, for DP80 cable
- Backward compatible to DP1.4 footprint.
- Optional for flange and plastic post.

FFC/FPC Connectors

- From 0.21mm to 2.0mm pitch with various heights ranging from 0.5mm to 6.25mm.
- Easy to operate and high vibration-proof performance
- Automotive grade versions compliant with USCAR2 and LV214 are available
- FFC cable can be supported as a whole solution

Power Connectors

- Wire to Board connectors in 3.0 mm and 4.2mm pitch with current ratings from 6.5A to 20A per pin
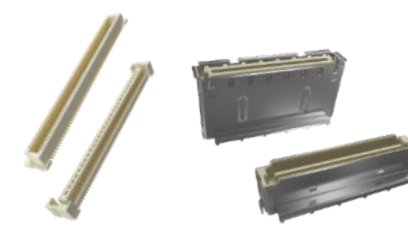- Designed for IT and Datacom applications

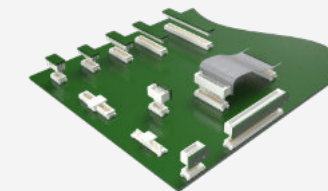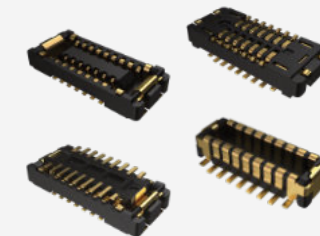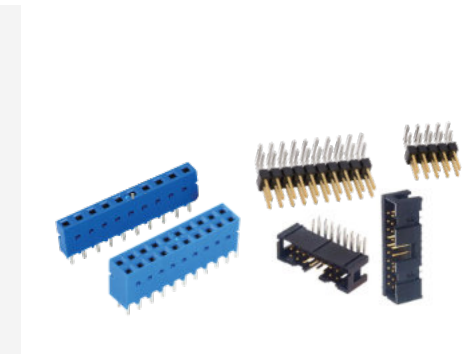## BergStak® 0.80mm

- Ideal for use in high density applications
- Wide range of positions and stack heights
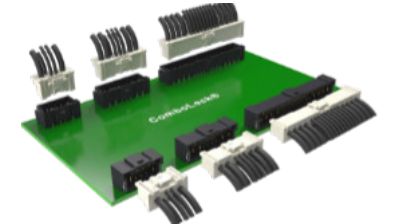- Speed up to 16 Gb/s.

Micro Board-to-Board

- Low profile and fine pitch for high density applications
- High current rating (Up to 5A)
- Chamfer connector design prevents mismatching

Customized Solutions for Automotive and Consumer Applications

- Supports custom connector requirements with value-added solutions, minimal turnaround time, and competitive pricing

Consumer

Lynx™

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR
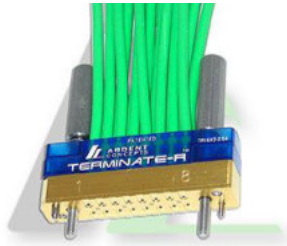Amphenol's Lynx™ is a 4-row product offering doubling the density in a 2-row footprint that is suitable for a wide variety of applications in datacom, enterprise server, industrial, medical and more.

Lynx™ QD

THE QUAD DIFFERENTIAL SOLUTION
Optimized for differential pair signaling, Lynx™ QD sets a new standard for density and flexibility that offers an innovative, high performance interconnect with PCIe® Gen 5 support. Lynx™ QD supports data rates of 56 Gb/s PAM4.

cStack™

CUSTOMIZABLE SOLDERLESS INTERPOSER-BASED ONE-PIECE STACKER
The Amphenol cStack™ high speed solder-less interconnect solution provides limitless flexibility for board-to-board mezzanine applications and board-to-board stackable and coplanar applications when terminated to a flex circuit.

TR Multicoax Connector

HIGHEST DENSITY HIGH SPEED COAX CONNECTOR
Delivers superior signal integrity from multiple high speed analog or digital channels using patented solderless, compression mount technology. With a choice of 20GHz, 40GHz, or 70GHz configurations, users can upgrade their connectors according to bandwidth requirements on their application.

APPLICATION SCOPE
Data Centers

Amphenol provides a wide range of the most advanced interconnect solutions for modern Data Centers and all their components.

Storage

Amphenol has a robust portfolio of high performance, reliable connectors that are ideal for Data Center storage systems. Amphenol provides a wide range of the most advanced interconnect solutions for modern Data Centers and all their components.

Rack Connectivity

Check out Amphenol's connector and cable solutions including Transceivers, Active Optical Cables, and High Speed External I/O Cable Assemblies that are perfect for consistent high speed rack connectivity.

Server / Switch Router

Amphenol offers many interconnect solutions like High Speed I/O Connectors, Board-to-Board and Wire-to-Board Connectors, Memory, Media, and Peripheral Connectors, Modular Jack and USB solutions, and SATA and SAS Storage Connectors, which help in the flawless performance of these systems.

Power Distribution

Amphenol's high density power connectors, bus-bar interconnects, and cabled solutions effectively enable these power distribution units to help power up the entire Data Center.

PCIe® Flip CEM, Slim CEM, Direct Cable Solution

- Flip CEM with "JJ" contact or "LL" contact provides better support for card edge to save keep out area for routing as compared to standard PCIe CEM contact of "JL".
- Standard PCIe CEM footprint is 8.2mm, Slim CEM is 7.45mm, Flip CEM is 5.9mm
- Direct Cable CEM features high-speed signal pins that directly attach to cable ends to save PCB loss

Mini Cool Edge for GENZ/ EDSFF/OCP

- 0.60mm pitch connector, supports high speed up to 112G PAM4
- Designed to meet SFF TA1002, Gen Z, EDSFF, OCP NIC 3.0 specifications
- Vertical, right angle, straddle mount and orthogonal options are available

Double Density Cool Edge for Ultra Compact Design

- 0.80mm pitch, power and signal hybrid connector
- Highly configurable wafer design for differential, single-ended and power options
- Supports high speed of up to 32GT/s(or 56GT/s PAM4) capability

Mini Cool Edge IO

- Up to 64Gb/s PAM4, PCIe® Gen 4, PCIe® Gen 5, PCIe® Gen 6, over 1.0 meter transmission distance
- 0.60mm pitch connectors support both cable and card edge connections
- Options for 92Ω, 85Ω and 95Ω impedance and various pin number options – meeting PCIe®/NVMe/SAS/SFP(+)/QSFP specifications

Multi-Trak™

- Combines original PCIe® and Mini Cool Edge IO in one connector to provide both power (21A) and high/low-speed signal
- Up to 56Gb/s PAM4, PCIe® Gen 5, and target PCIe® Gen 6
- Options for 85Ω impedance and various pin number options – meeting PCIe®/NVMe/SAS/OCP DC-MHS/ SFF-TA-1033 specifications

ExtremePort™ Swift

- Ultra-low profile, 0.60mm pitch connector in 8X, 16X configurations. Mating height 8.38mm
- Designed for unshielded, internal I/O connectors
- With 85Ω impedance and meets PCIe® Gen 5 NRZ 32G specifications

PCIe® Gen4 and Gen5

- X1, X4, X8, X16, X24, X32 standard links
- 1.00mm pitch, vertical and right angle with options for ridge, locked latch, side latch, blade hold down, open wall
- Extensive range include options for surface mount, through-hole sovlder, press-fit and straddle mount terminations and keying options offered
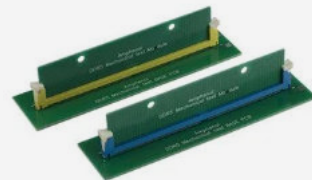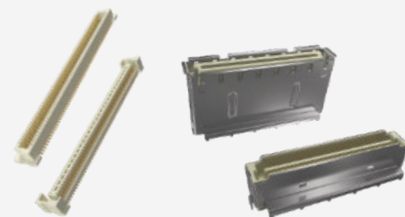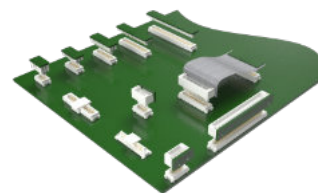
DDR SMT Memory module Connectors

- Designed to meet JEDEC SO-016, SO-017, SO-019 and SO-023 specs
- U DIMM/R/LR Socket, Metal tab, Standard/Narrow/ latch available

PSAS, SAS and SATA Connectors

- SAS connectors (29-pins) support hot plugging and blind mating of HDDs/ SSDs. 2 signal lanes support up to 24Gb data rate (SAS 4.0).
- PSAS connectors (68pins) support SAS HDD and NVME SSDs with 2 SAS lanes supporting up to 24G data rate and 4 PCIe lanes supporting up to 32G (PSAS 5.0) data rates.

ExtremePort™ Z-Link

- Compliant with Gen-Z and OCP NIC specifications, SFF-TA-1002/1020 solution
- High speed of up to 56Gb/s PAM4
- Supports both cable and card edge applications

Fan Connectors

- Blind-Mate Interface Wire to Board connectors from 1.25mm to 2.54mm pitch with max current rating 5.5A/pin. Designed for Server and Storage applications
- Card to Wire connectors in 2.44mm and 2.54mm pitch with current rating 4A/pin. Designed for Switch application

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

BergStak® Secure 1.00mm

- High security, high density
- EMI Shielding
- Speed up to 32Gb/s.

BergStak® 0.80mm

- Ideal for use in high density applications
- Wide range of positions and stack heights
- Speed up to 16 Gb/s.

Conan® 1.00mm

- Secure, reliable connector
- Audible "click" to ensure perfect mating
- Speed up to 8 Gb/s.

RJMG

- 10/100T, 1GBT (10/100/1000-BT), 2.5G, 5G , 10G, Power Over Ethernet (PoE, 15W~150W) , integrated with surge protection.
- Commercial 0~70°C and industrial - 40-85°C & -40~105°C .
- Meets IEEE802.3ab and supports various Ethernet PHY

Minitek® PICPwr OCP Connector Solutions

- Newly launched 12V connector solution supports Open Compute Project Power Distribution and Management architecture requirements
- Operating power and voltage is 864W at 12VDC

Minitek® Pwr CEM-5 PCIe® Connector System

- Newly launched CEM 5.0 PCI Express® 12VHPWR auxiliary hybrid connector and cable assembly solution
- Supports 600W GPU cards
- Rated current up to 9.5A per contact and features fully isolated terminals
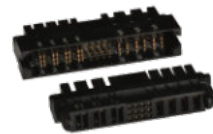
BarKlip® BK500 IO

- Distributes up to 500A per contact
- Simple configurable plug-and-play solutions
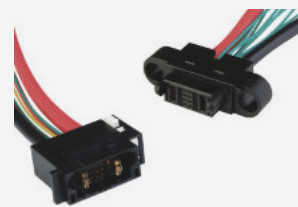- Fully compliant with ORv3 Power Output Specifications

BarKlip® BK150 IO

- Distributes up to 150A per contact between busbars, cables, and circuit boards
- Simple configurable plug-and-play solutions
- Fully compliant with ORv3 IT Gear Power Input Solution Specifications

AC Input Connector and Cable Assemblies

- 7-Pin connector designed for Star, Delta, and single-phase connections
- Simple configurable plug-and-play solution designed to meet various current and voltage ratings
- Fully compliant with OCP ORv3 Power Shelf Universal Input Connect Specifications

CoolPower® SDM

- Up to 35A per pin, high current Coolband contact technology
- Backplane, coplanar, and orthogonal configurations available
- 2 position or 4 position available

EnergyEdge™ X-treme

- 3000W at 12V
- Available in straddle mount, right angle, right angle coplanar, and vertical configurations
- 25% increase in current linear density

PwrMAX® G2

- Highest density blind-mate Power and Signal connector series
- Up to 130A per contact and 18% size reduction
- Orthogonal, mezzanine, coplanar and right-angle configurations available for both PCB and busbar applications
-

PwrBlade® Mini Cable-to-Board Connector

- Rated up to 25A per power contact (50A/column) without exceeding 30°C temperature rise in still air
- Modular tooling design
- 12AWG for power contacts and 26AWG-22AWG available for signal contacts

PwrBlade® Mini Board-to-Board Connector

- Rated up to 45A per high power contact (4 adjacent contacts)
- Low profile 8.10mm height above board
- Modular tooling designs

PwrMAX® I/O Cable Connector System

- Rated up to 50A/Contact (100A/column) without exceeding 30°C temperature rise in still air
- Latching options available
- Patented GCS® and GXT® plating

Data Centers
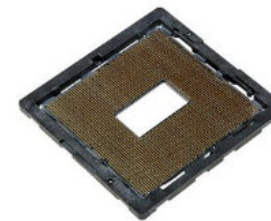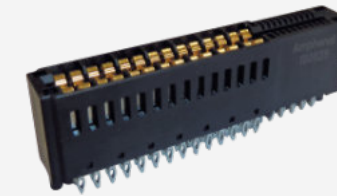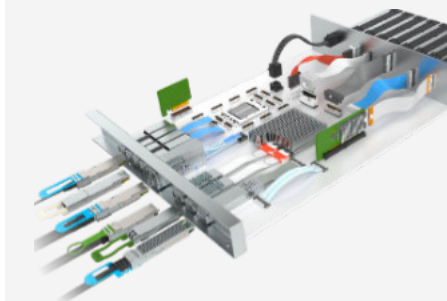# High Speed

cLGA® Land Grid Array Socket System

HIGH PERFORMANCE, LOW COST CHIP-TO-BOARD APPLICATION
Designed to bring conventional connector material construction to high performance, low cost chip-to-board applications. Used in applications ranging from handheld computer products to supercomputer systems.
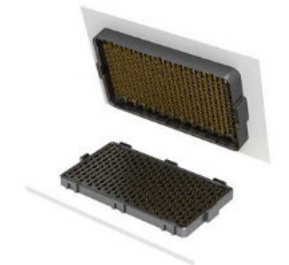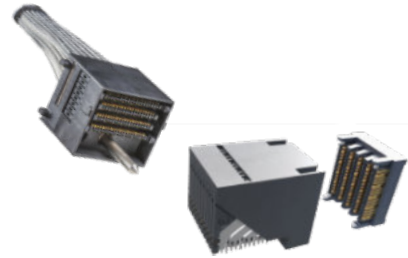
OverPass™ Cable System

INDUSTRY-LEADING DIRECT HIGH-SPEED INTERCONNECT
Amphenol's OverPass™ cable system offers a broad range of capabilities that allow our customers to efficiently transmit high speed signals from near an ASIC to anywhere in their system.

M-Series 56 Mezzanine Connectors

56GB/S HIGH SPEED MEZZANINE BGA CONNECTOR SYSTEM
Leveraging proven technologies, including an industry leading BGA design, offering superior self-aligning and self-leveling. With a next generation differential pair contact design for up to 56Gb/s NRZ and 112Gb/s PAM4 performance.

PwrBlade® ULTRA HD

- Up to 85A per contact
- 2.0mm high density signal pitch
- Ultra-low profile height of 9.6mm above board for optimized airflow

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® XP300/ XP200

- Current ratings up to 300A and 200A
- Mates with 3.0mm busbar
- ±2.0mm gatherability

High Speed

ExaMAX®

COST OPTIMIZED WITH SCALABLE PERFORMANCE TO 112G PAM4
Innovative design supports low insertion/ extraction forces with reduced crosstalk and low insertion loss. Flexible architecture supports direct orthogonal, traditional backplane, coplanar and cable requirements.

Lynx™

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR
Amphenol's Lynx™ is a 4-row product offering doubling the density in a 2-row footprint that is suitable for a wide variety of applications in datacom, enterprise server, industrial, medical and more.

Lynx™ QD

THE QUAD DIFFERENTIAL SOLUTION
Optimized for differential pair signaling, Lynx™ QD sets a new standard for density and flexibility that offers an innovative, high performance interconnect with PCIe® Gen 5 support. Lynx™ QD supports data rates of 56 Gb/s PAM4.

SFP28 25G Transceivers

LOW POWER CONSUMPTION, HIGH SPEED, HIGH RELIABILITY
Amphenol 25G SFP28 optical transceiver includes SR, LR Lite, LR, ER, etc, adopt LC interface and compatible with IEEE802.3by, Mainly applied in 25G Ethernet, CPRI10 and other environments.

QSFP28 100G Transceivers

LOW POWER CONSUMPTION, DUAL RATE SUPPORT, HIGH SPEED AND HIGH RELIABILITY
Amphenol 100G QSFP28 transceivers include SR4,CWDM4, LR4 and ER4 lite, adopt MPO or LC interface and compatible with IEEE802.3bm, SFF-8636 and other standards.

ExtremePort™ OSFP 112G Connectors & Cable Assemblies

SUPPORTS PER PORT DESIGNS FROM 200G, 400G AND 800G PAM4
8 lanes per cable – 28G, 56G & 112G per lane capability. Double the bandwidth per port vs. QSFP. Backwards plug compatible with QSFP28/56 optical transceivers. Available in all 4x form factors.
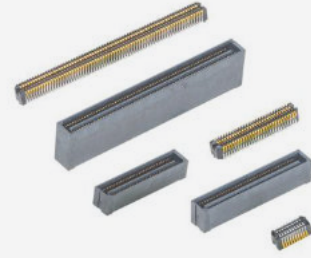
InfinX Mezzanine Connectors

OPTIMIZED FOR PERFORMANCE AND DIFFERENTIAL PAIR SIGNALING
The InfinX® high-speed mezzanine connector solution is designed to meet the needs of 25+Gb/s applications. Available in 4- and 6-Pair configurations, InfinX is your best choice for high speed board-to-board applications.

Chameleon®

ADAPT AND ADVANCE TO THE NEXT GENERATION
With performance speeds up to 25 Gbps+, Chameleon meets the demand for faster, smaller and more compact connector solutions. Chameleon delivers a new level of performance unlike any other platform connector on the market today.

Paladin HD®

DENSITY OPTIMIZED PERFORMANCE BEYOND 112G PAM4; ROADMAP TO 224G
Achieves 144 diff pairs within 1U Orthogonal slot. Consistent signal integrity performance over the entire mating range. Flexible architecture supports right angle female, direct orthogonal, and cables up to 12P.

DensiLink® OverPass™ Assemblies

112G DOUBLE ENDED HIGH PERFORMANCE CABLING INTERCONNECT
DensiLink® OverPass™ products remove high speed signaling from the PCB and create a double ended, high performance cabling interconnect. These cables support 56G and 112G signaling in hardware system designs.

OSFP Loopback 200G/400G

200G / 400G SYSTEM CONFIGURATION SOLUTION
Amphenol's OSFP (Octal SFP) Loopback Modules are part of our OSFP I/O system product family that includes copper cables, connectors and AOC's. These OSFP loopback cable assemblies are offered in four configurations.

QSFP DD Loopback 200G/400G

200G / 400G SYSTEM CONFIGURATION SOLUTION
Amphenol's QSFP DD (Double-Density) Loopback Modules are part of our comprehensive QSFP DD product family offering - cables, connectors and AOC's. These QSFP DD loopback cable assemblies are offered in four configurations.
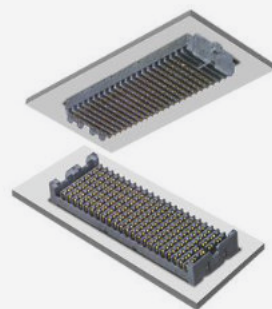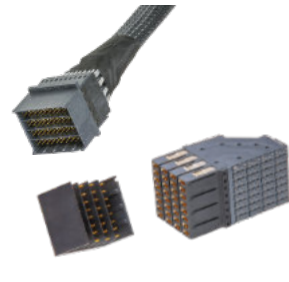
QSFP28 Active Optical Cable

HIGH PERFORMANCE, PLUG AND PLAY INTERCONNECT SOLUTIONS
Amphenol's 100G QSFP28 to QSFP28 Active Optical Cable assemblies are a reliable, cost and power efficient, integrated solution which is ideal for high density signal transmission.

Mini-SAS HD Active Optical Cable

RELIABLE HIGH PERFORMANCE INTERCONNECT SOLUTION FOR MSAS APPLICATIONS
Amphenol's Mini-SAS HD Active Optical Cable is fully compliant to SAS 2.1 and SAS 3.0 industry standards as well as the SFF-8636 interface standard. Used primarily for external Enterprise storage applications.

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 up to 8P.
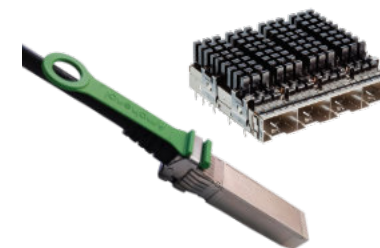
SFP Connectors & Cable Assemblies

SUPPORTS DESIGNS FROM 28G, 56G PAM4
Passive & active cables; 26AWG to 32AWG cable. Stacked, ganged and belly-to-belly board connector and cage configurations with heat sinks and light pipes.Available in all 4x form factors.

QSFP28/56/112G Connectors & Cable Assemblies

SUPPORTS PER PORT DESIGNS FROM 100G, 200G AND 400G PAM4
4 lanes per cable – 28G, 56G and 112G per lane capability. Passive & active cables; 26AWG to 32AWG cable. Stacked, ganged and belly-to- belly connector and cage configurations. Available in all 4x form factors.

TR Multicoax Connector

HIGHEST DENSITY HIGH SPEED COAX CONNECTOR
Delivers superior signal integrity from multiple high speed analog or digital channels using patented solderless, compression mount technology. With a choice of 20GHz, 40GHz, or 70GHz configurations, users can upgrade their connectors according to bandwidth requirements on their application.

APPLICATION SCOPE
e-Mobility

From Residential to Commercial energy storage systems, Amphenol provides a wide variety of interconnect solutions for energy storage systems.

Battery Management Systems

The battery is considered as the strategic component of any electric vehicle. All electric vehicles (EVs) are equipped with a Battery Management System (BMS) that intelligently controls the battery charge and protects it from operations beyond the safe limits.
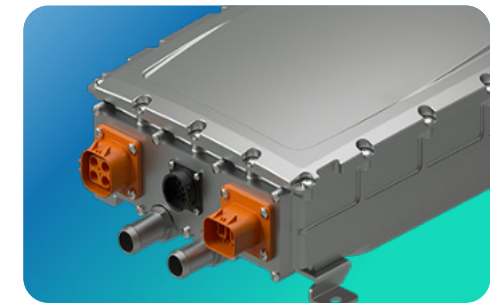
On-Board Charger

On-Board Chargers are an integral and built-in part of Electric Vehicles for interfacing with AC-based charging systems. The Alternating Current (AC) supplied by the charger passes through the cable to reach the OBC, which then converts it to DC to charge the EV battery under the supervision of the Battery Management System (BMS).

Power Inverter and Converter

The power inverter/converter unit within an electric vehicle converts the high voltage DC energy from the battery to a multiphase AC current that helps to drive the traction motor. The EV power management system also comes with a converter that does the reverse function at times of regenerative braking.

Cell Connection System

A Cell Connection System (CCS) is integrated into the top battery cover of the EV battery module to bring high-voltage connectivity as well as channel signals like temperature and pressure sensing information to the BMS.
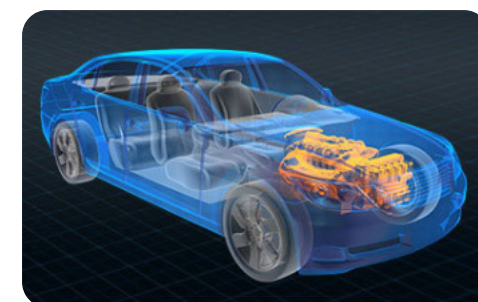
Vehicle Control Unit

Vehicle Control Units (VCU) are considered the powertrain management system within an electric vehicle. They help with various functionalities of a vehicle from torque coordination, to gearshift operations, voltage management, and charging control.
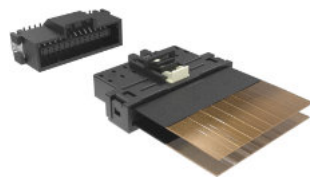
EV Charging

With a wide portfolio of power products supporting 15A-1000A ratings, low contact resistance, high thermal support and component modularity, Amphenol offers the most efficient solutions for the modern EV charging station.
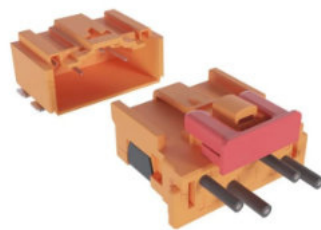
Ve-NET™ Multigigabit Differential Connector System

Automotive-grade Ethernet solution developed according to USCAR-2 & LV214, along with miniaturized and various sealed/non-sealed configurations; Featured high data rates up to 50Gbps per port and highly compact and robust to fulfill automotive applications such as camera systems, ADAS, and Autonomous Driving. Supports Automotive Ethernet, LVDS, APIX 3 PCIe and FPD4.

HSD (High Speed Data) Connector System

COMPLIANT WITH USCAR-2 SPECS
HSD connector system is a fully shielded interconnect system that can be used with shielded twisted quad cables. It has a high performance digital system for low-voltage differential signals which prevents interference from crosstalk and external sources.

NETBridge+™ Automotive Ethernet Connector System

USCAR-2 COMPLIANT AUTOMOTIVE ETHERNET CONNECTORS
NETBridge+™ Automotive Ethernet Connector System is designed for automotive applications and can transmit up to 100Mb/s and 1Gb/s according to IEEE 100BASE-T1 and 1000BASE-T1 and will be upgraded to 10Gb/s.

2.00mm FFC/FPC connectors with Autolock Mechanism

NON-ZIF FLEX CONNECTOR WITH AUTOLOCK
LV214 S1 qualified non-ZIF flex connector with an autolock mechanism and surface mount termination.

0.50mm and 1.00mm FFC/FPC ZIF Connectors

Right angle ZIF flex connectors with a front flip locking mechanism, surface mount termination, and double contact points. Features low profile height of 2.55mm.

0.50mm FFC/FPC Connectors with Autolock Mechanism - F308/F332 Series

RIGHT ANGLE NON-ZIF FLEX AUTOLOCK CONNECTORS
F308/F332 series is a 0.50mm pitch right angle Non-ZIF flex connector with an auto lock mechanism and surface mount termination. It features a height of 2.45mm and comes in 6 to 68 contacts.

FlexFast™ Flex to Board Connector Solution

Small size and low height flex to board connection solution. Compliant to USCAR2 and LV214 and designed for BMS, battery pack, Inverter+DCDC applications.

FlexLock™ FPC-to-Board Connectors

MORE FLEXIBLE SOLDERING AUTOMOTIVE GRADE CONNECTOR SYSTEM
USCAR-T2V2 and LV-214 S3 compliant with 2A per contact current carrying capacity and available in 10 to 30 position.

WireLock®

MORE RELIABILITY LOW MATING FORCE AUTOMOTIVE GRADE CONNECTOR SYSTEM
WireLock® is a 1.80mm pitch wire-to-board and flex-to-wire connector system. Its compact design addresses the growing need for space-saving automotive-grade connectors.

FloatCombo™ 0.50mm Floating Board-to-Board Connectors with Power Pin

HIGH SPEED HIGH CURRENT POWER PIN BOARD-TO-BOARD CONNECTORS
USCAR-2 T3V2 qualified 0.50mm pitch floating BTB connector featuring 4 independent power pins with 5A current per pin and high-speed transmission of up to 16Gb/s.

0.80mm Floating Board-to-Board Connectors - B406/B407/B410 Series

HIGH SPEED BOARD-TO-BOARD WITH FLOATING MECHANISM
Amphenol's B406/B407/B410 series are 0.80mm pitch floating board-to-board connectors which support stack heights up to 23mm and positions from 30 to 120.

BergStak® 0.40mm Self-Alignment Board-to-Board Connector

USCAR-2 COMPLIANT CONNECTORS WITH SELF-ALIGNING FEATURE
FCI Basics BergStak® 0.40mm self-alignment connectors come with a stack height of 3.50mm and 30 positions extendable up to 10 to 60 positions with 10 positions incremental.

Minitek MicroSpace™ High Voltage selective loaded Crimp-to-Wire Connector Platform

COMPACT, ROBUST AND VERSATILE CONNECTOR SYSTEM
Minitek MicroSpace™ High Voltage selective loaded Crimp-to-Wire connector platform's unique design enables LV214 Severity-2 and performs at 3.81mm, 6.35mm, and 8.89mm pitch with 400V, 800V and 1200V.

Minitek MicroSpaceXS™ Waterproof 1.27mm Crimp-to-Wire Connector Platform

COMPACT, ROBUST AND VERSATILE CONNECTOR SYSTEM
Crimp-to-Wire / Wire-to-Wire connector meets LV214 S2 and USCAR2-T2V2 specs, supports 4A/pin, and features TPA and CPA.

Minitek® Pwr 4.2 High Current Connector

ROBUST, VERSATILE AND HIGH CURRENT PERFORMANCE
Minitek® Pwr 4.2 High Current Connector (HCC) is designed for power applications with current rating up to 13A per contact and wire gauge range from 30 to 16AWG for Wire-to-Wire and Wire-to-Board applications.

ComboStak® and PowerStak® Board-to-Board Connectors

HYBRID AND MEDIUM POWER SOLUTION
ComboStak® and PowerStak® are compact, hybrid (signal and power) and power board-to-board connectors.
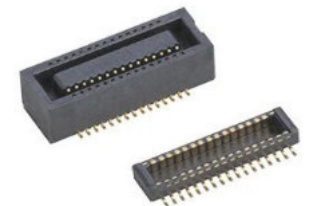
DuraEV™

PORTABLE AND FIXED BATTERY CHARGING AND DISCHARGING CONNECTORS
DuraEV™ is a standard connector solution offered with 2 power and 4/6 signal pins which employs a patented contact system that is capable of carrying a continuous current from 15A up to 70A with 10,000

E-MOBILITY

BarKlip® BK200 I/O for EV Charging

DIRECT PLUGGABLE CLIP THAT CONNECTS TO BUSBARS IN EV CHARGING STATIONS
Amphenol's BarKlip® BK200 I/O provides a convenient method of distributing up to 200A between busbars, cables and circuit boards. It features 14 fully independent cantilevered beams, providing a true compliant spring to adjust for variations in busbar alignment and surface finish.

BarKlip® XP Connectors for EV Charging

HIGH POWER AND LOW RESISTANCE BUSBAR CONNECTOR FOR EV CHARGING STATIONS.
Amphenol's BarKlip® XP connectors feature independent points of contacts that provide overall lower resistance and greater overall efficiency.

PwrBlade+® Connector

NEXT GENERATION AC/DC POWER DISTRIBUTION CONNECTOR SYSTEM
AC/DC power distribution connector with 58A/contact without exceeding a 30°C temperature rise in still air.
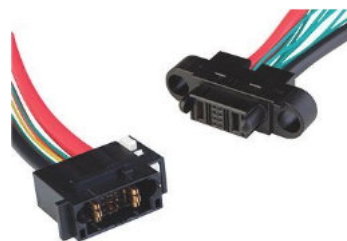
PwrBlade® Connector

The PwrBlade® power distribution connector system from Amphenol includes power and signal contacts to provide power distribution and power control in a single connector.

PwrBlade® Cable Assembly

The PwrBlade® cable connectors are designed to mate to PwrBlade® right-angle or vertical board-mounted headers. By expanding beyond board-to-board applications, designers can now connect power supplies and power distribution subassemblies in a wider range of applications.

PwrBlade+® Cable Connectors for EV Charging

PwrBlade+® cable connectors offer flexibility to meet a wide variety of customer needs. The connectors come in both Cable-To-Cable and Cable-To-Board solutions.

e-Mobility

Amphenol provides a broad array of compact, robust, leading-edge interconnect solutions.

Battery Management System | EV Charging | Power Inverter and Converter | Vehicle Control Unit | On-Board Charger | Cell Connection System

46 Applications & Markets

amphenol-cs.com 47

APPLICATION SCOPE

Energy Storage Systems

From Residential to Commercial energy storage systems, Amphenol provides a wide variety of interconnect solutions for energy storage systems.

AC-DC Inverters

The AC/DC Inverters or PCS (Power Conditioning Systems) work in conjunction with battery units for the smooth functioning of the Energy Storage System. Amphenol's enhanced power connectors and cable solutions are ideal for use in these systems.
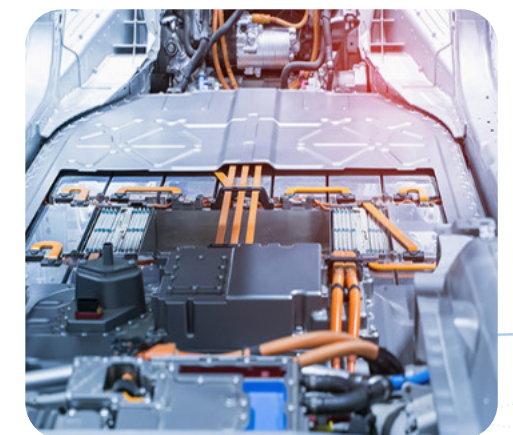

Battery Storage System

Amphenol offers compact, flexible high performing connectors that support Battery Storage systems within an Energy Storage System (ESS.)


Battery Management System

Battery Storage, the key component of an Energy Storage System (ESS), is often equipped with a Battery Management System (BMS). From medium power wire-to-board connectors to board-to-board and card edge connectors, Amphenol has an extensive array of compact, reliable solutions that support BMS operation inside an ESS.

ESS Controllers

An ESS Controller is used for efficient management of the battery modules in an Energy Storage System and manages charging, discharging of battery modules in addition to monitoring and controlling the environment temperature inside the ESS. It works alongside the BMS to collect and process data like voltage, current and fuse status. Through a CAN bus, these units maintain communication between battery racks and power conversion units of the ESS. Check out Amphenol's innovative connector solutions supporting ESS Controllers.
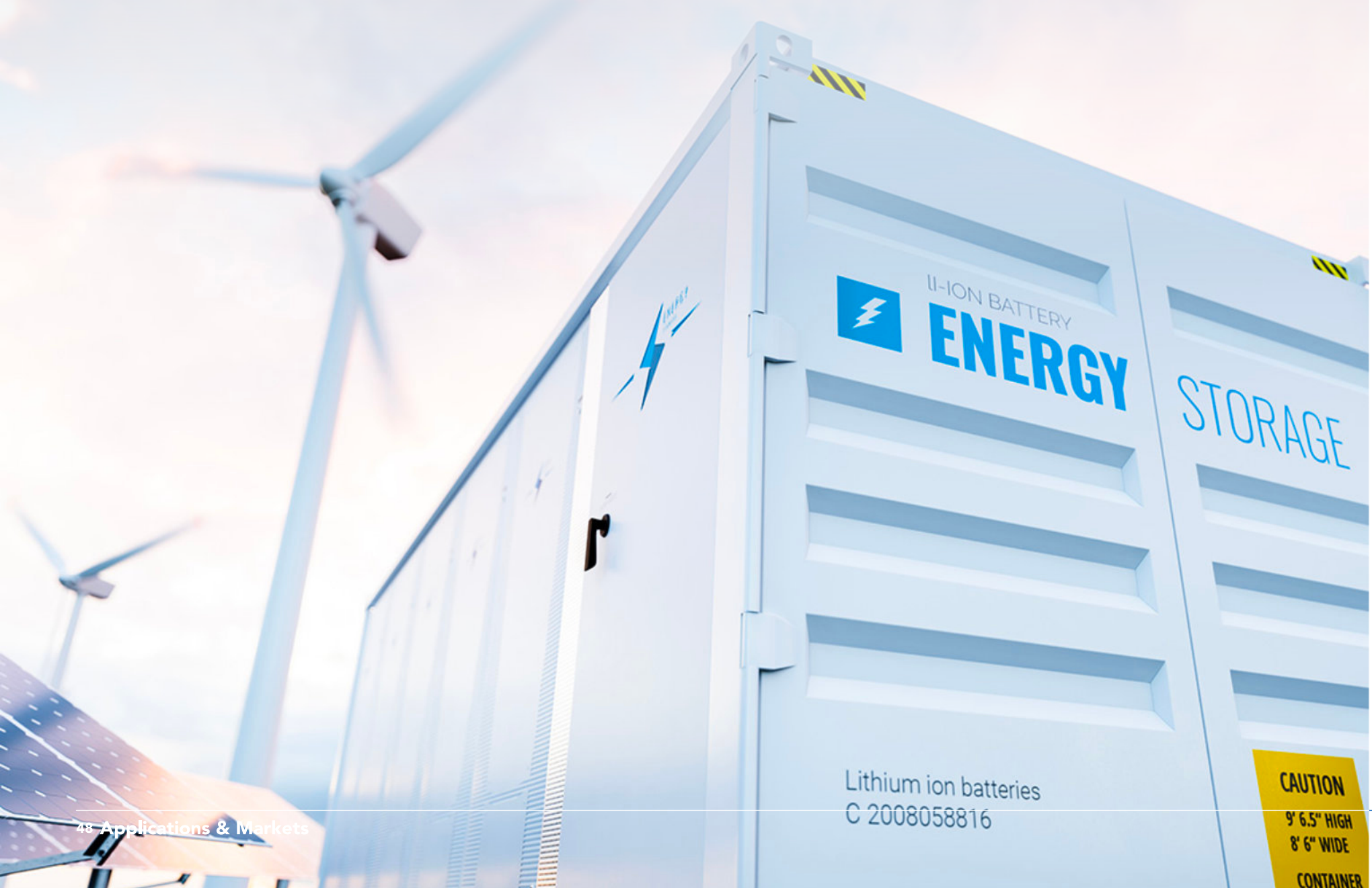
Minitek MicroSpaceXS™ Waterproof 1.27mm Crimp-to-Wire Connector Platform

COMPACT, ROBUST AND VERSATILE AUTOMOTIVE-GRADE CONNECTOR SYSTEM
1.27mm pitch connectors with a current rating up to 3A per contact, making it ideal for higher power applications.

WireLock®

MORE RELIABILITY LOW MATING FORCE AUTOMOTIVE GRADE CONNECTOR SYSTEM
WireLock® is a 1.80mm pitch wire-to-board and flex-to-wire connector system with a nominal current carrying capacity of 2A and supports cable wire gauges from 22AWG to 26AWG.

FlexLock™ FPC-to-Board Connectors

MORE FLEXIBLE SOLDERING AUTOMOTIVE GRADE CONNECTOR SYSTEM
FlexLock™ FPC-to-Board connectors come in a compact design and provide nominal current carrying capacity of 2A per contact to support higher power applications.
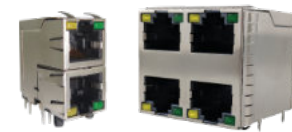
FloatCombo™ 0.50mm Floating Board-to-Board Connectors with Power Pin

HIGH SPEED HIGH CURRENT POWER PIN BOARD-TO-BOARD CONNECTORS
With 4 independent power pins supporting 5A current per pin in 0.50mm pitch, connectors are ideal for applications that need large current and space-saving. Provides a high-speed transmission performance of up to 16Gb/s.

Dubox® 2.54mm Crimp to Wire

The Dubox®, connector families offer an extensive range of through-hole and surface-mount part options, including single or double-row in either straight or right angle orientation from 2 to 50 positions, with a current rating of 3A (maximum) per individual contact.

Quickie® IDC Cable-to-Board Connector System

PRECISE AND DURABLE IDC CONNECTION WITH DUPLEX PLATING AND DUAL POLARIZATION
Dual polarization feature prevents connector mismating. Duplex plating saves cost and guarantees 100+ mating cycle performance.

ComboStak® and PowerStak® Board-to-Board Connectors

HYBRID AND MEDIUM POWER SOLUTION
ComboStak® and PowerStak® are compact, hybrid (signal and power) and power board-to-board connectors, providing up to 20A per power blade and up to 12Gb/s signal speed.

Minitek® Pwr 5.7 Connector System

5.70MM COMPREHENSIVE SOLUTION WITH CURRENT RATING UP TO 23A
Features scoop proof housing to prevent damage to terminals, and polarized mating geometry to prevent mis-mating.

Rugged USB 3.0

RUGGED USB CONNECTOR FOR HARSH ENVIRONMENT APPLICATION.
Provides a great IP67 water/dust proof performance. Interface is sealed in both the mated and un-mated conditions.
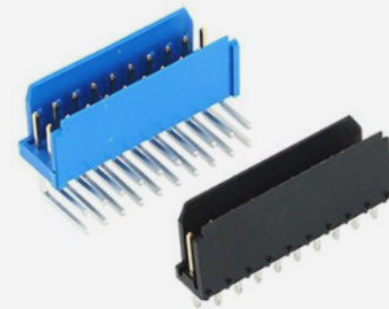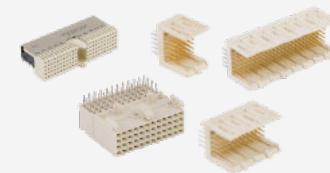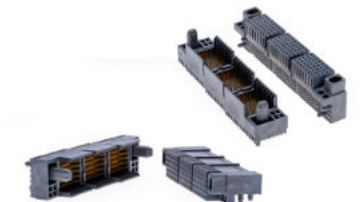
PwrBlade® Mini Cable-to-Board Connector

LOW PROFILE POWER & SIGNAL HYBRID CABLE CONNECTOR
PwrBlade® Mini Cable-to-Board strengthens the PwrBlade® cable portfolio even further. Mini cable-toboard serves as an I/O cable configuration to meet the ever-increasing demand for higher current density in low profile applications.

PwrBlade® Mini Board-to-Board Connector

LOW PROFILE POWER & SIGNAL HYBRID BOARD-TO-BOARD CONNECTOR
PwrBlade® Mini Board-to-Board connector enhances Amphenol's existing PwrBlade® product line with the smallest profile to date. PwrBlade® Mini has an 8.10mm height above board, making it the lowest height power and signal board-to-board connector in the PwrBlade® portfolio.

BarKlip® BK300 Connector

LOW RESISTANCE-HIGH POWER BUSBAR CONNECTOR
The BarKlip® BK300 connector features 14 independent conducting beams that maintain contact with the mating busbar. These power beams provide lower overall resistance by maintaining contact with the mating busbar through common misaligned conditions.

PwrBlade+® Connector

NEXT GENERATION AC/DC POWER DISTRIBUTION CONNECTOR SYSTEM
Rated up to 58A per power contact without exceeding a 30°C temperature rise in still air. Features an innovative high power contact design and housing that allows higher current carrying capability in a more compact package.

PwrBlade® MiniMezz Connector Series

LOWEST PROFILE HYBRID MEZZANINE CONNECTORS
Available in stack heights ranging from 8mm - 20mm with options for power & signal contacts. Modular tooling design to accommodate wide range of application requirements.

CoolPower® Slim Drawer

HIGH CURRENT CONNECTOR WITH COOLBAND CONTACT TECHNOLOGY
Delivers up to 60A per pin and provides an ultra-low end-of-life contact resistance of just 0.40mΩ.

RJ / Modular Jacks

· Cat5, Cat5e, Cat6, Cat6A

· Single port, ganged, stacked multi-port, LEDs, shielded

· Vertical, right angle

· PoE++ capability

· Industrial, commercial, medical, consumer, military applications

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

Millipacs® Plus

· Configurable meeting designers' choice of signal data rates from 3Gbps to 25Gbps and power up to 40A and with multiple guiding options

· Compliant to Hardmetric equipment practice and complimentary to 2mm Millipacs standard

· Options for Hotswapping, EMI shielding and high temperature

APPLICATION SCOPE
IoT

Check out Amphenol's wide range of high-speed, power efficient, rugged connectors supporting IoT technologies.

Smart Home Automation

With smart home automation, you can interact through your mobile device with any device or appliance in your home from anywhere. Control lighting and entertainment systems, manage security, surveillance, and more. Check out Amphenol's interconnect solutions today.

Building Automation

Building automation is a concept that targets centralized automatic control of all systems within a building from HVAC, lighting, security, elevators, AV communications, parking meters, and vending machines, to energy and water management, landscaping/ irrigation, and digital signage.

Smart City

Sensors, surveillance cameras, street and outdoor lighting, utility meters and various other smart devices connected to the Internet accumulate data, which is processed in data analyzing centers, and is further used to optimize the communication between citizens and utilities, leading to a smooth functioning of an efficient city.
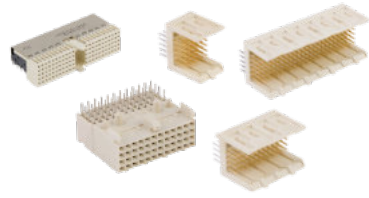
Smart Grid

The success of a Smart Grid lies in setting up efficient and reliable networks consisting of computers, sensors, and automation technologies. These are more secure, greener, and enable seamless integration of renewable technologies like wind and solar power.
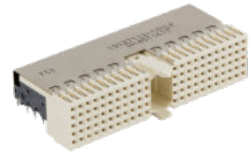
Industry 4.0

Amphenol, as a leader in technological advancements, is equipped with a range of connector and cable solutions to support various equipment-enabling Industry 4.0 applications. These interconnect components are tough, durable, and feature the most advanced sealing, ingress protections, and electromagnetic shielding demanded by the harsh factory environments.
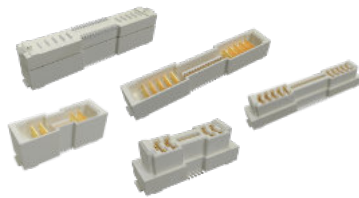
Industrial Backplane Connectors

- 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
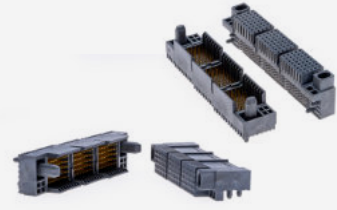- Features 2-beam twisted tulip contact which provides an equalized signal path
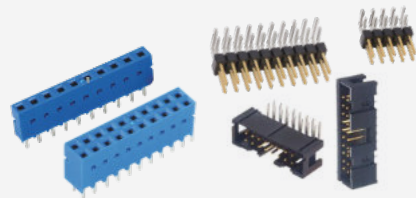
Millipacs® Plus

- Configurable meeting designers' choice of signal data rates from 3Gbps to 25Gbps and power up to 40A and with multiple guiding options
- Compliant to Hardmetric equipment practice and complimentary to 2mm Millipacs standard
- Options for Hotswapping, EMI shielding and high temperature

Minitek® Pwr Connector and Cable Assemblies

- Complete interconnect solutions for wire-to-wire and wire-to-board
- Available in pitch sizes of 3.00mm, 4.20mm and 5.70mm
- Current ratings from 5A to 28A

D-Sub Slimline

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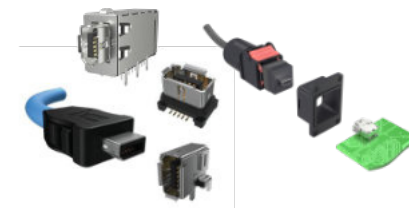
Lighting Connectors

- Lighting connectors & cables
- NEMA/ANSI C136.41
- Zhaga Book 18 and Book 20
- LED indoor, outdoor, street lighting applications

Ruggedized

- Ruggedized, IP67 sealed
- Connectors & cables
- RJ, USB, USB-C, D-Sub, HDMI
- MRD Circular latching
- FLH rectangular latching
- Industrial, commercial, lighting

High Temperature Backplane Connectors

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

Conan® 1.00mm

- Secure, reliable connector
- Audible "click" to ensure perfect mating
- Speed up to 8 Gb/s.

ComboLock® 1.00mm/3.00mm

- Compact, hybrid wire-to-board connector.
- Active Positive Latching
- 1.5A signal, 10A power

ix Industrial Ethernet

- Next gen ruggedized interface
- IEC 61076-3-124, Cat6A, PoE++
- IP20 & IP67 connectors & cables
- ix-Mag with integrated magnetics
- Factories, Robotics applications

Single Pair Ethernet

- Next gen ruggedized interface
- IEC 63171-6, PoDL
- IP20 & IP67 connectors & cables
- Industrial Ethernet to the sensor and actuator level

RJ / Modular Jacks

- Cat5, Cat5e, Cat6, Cat6A
- Single port, ganged, stacked multi-port, LEDs, shielded
- Vertical, right angle
- PoE++ capability
- Industrial, commercial, medical, consumer, military applications

ComboStak® 0.80mm / 2.00mm

- Hybrid and medium power solution
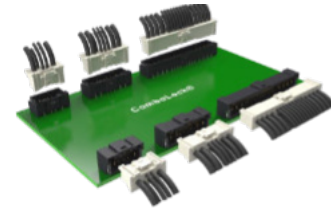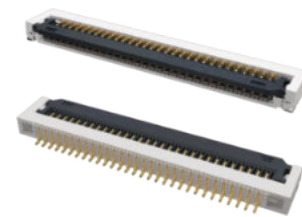- 0.8A signal, 20A power
- Signal speed up to 12Gb/s.

Modular Systems 2.54mm/ 2.00mm

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

FFC/FPC Connectors

- From 0.21mm to 2.0mm pitch with various heights ranging from 0.5mm to 6.25mm.
- Easy to operate and high vibration-proof performance
- Automotive grade versions compliant with USCAR2 and LV214 are available
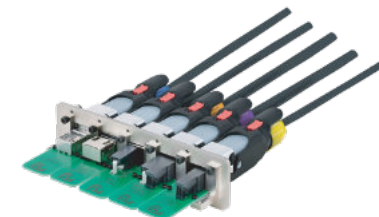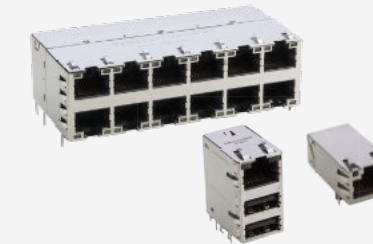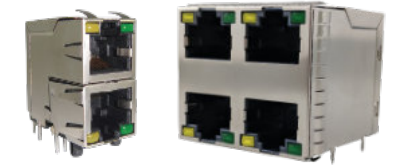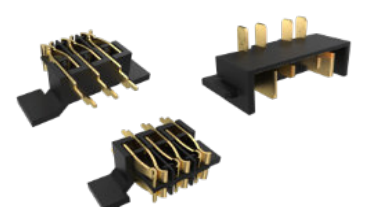- FFC cable can be supported as a whole solution

OCTIS™ Outdoor IO

- Robust I/O for high realiability and performance

RJMG

- 10/100T, 1GBT (10/100/1000-BT), 2.5G, 5G , 10G, Power Over Ethernet (PoE, 15W~150W) , integrated with surge protection.
- Commercial 0~70°C and industrial -40-85°C & -40~105°C .
- Meets IEEE802.3ab and supports various Ethernet PHY

Custom Battery Pack Connectors

- Robust battery pack charger connectors and terminal solutions for cordless power tools, lawnmowers, cordless vacuum cleaners, and personal care devices
- Available in various pin configurations and connector sizes with current ratings up to 45A.
- IP67 rated in both mated and unmated condition
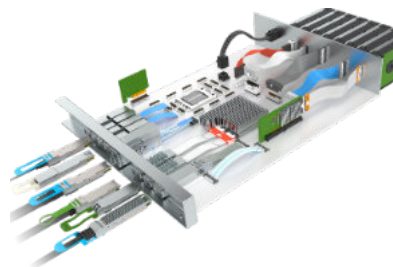
DisplayPort 2.1 Connectors

- DP2.1, UHBR20, 80Gbps/4 Lanes, 85ohm, for DP80 cable
- Backward compatible to DP1.4 footprint.
- Optional for flange and plastic post.

SD/Micro SD Express Series Connectors

- PCIe Gen3*1/ Gen4*1 lane
- Backward compatible to UHS-I/UHS-II in one socket (3-in-1 solution)
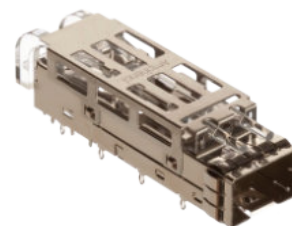- Push push/push pull structure

USB Type-C Connectors

- Performs to USB4 and Thunderbolt4 high-speed specifications, and backward compatible with USB3.2 Gen1 and Gen2
- Waterproof versions featuring unique O-ring technology (LIM) perform up to IPX8
- Supports up to 240W (5A/48V) power supply

PCIe® M.2 Gen 5 and Gen 4

- 67 contacts on 0.50mm pitch fully compliant with PCI-SIG PCIe® M.2 specification
- Dual Stacked, Shielded versions are available
- Right angle, vertical and various connector heights and keying options offered

Slim Cool Edge for High-Speed Hybrid Design

- 0.65mm pitch one-piece support high speed, sideband and power hybrid solution
- Supports high speed up to 32GT/s (or 56GT/s PAM4) capability
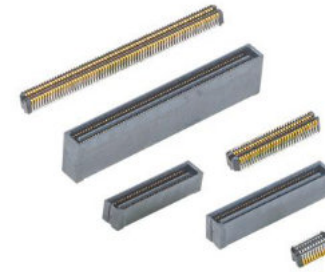- Supports up to 330pin maximum

PCIe® Gen4 and Gen5

- X1, X4, X8, X16, X24, X32 standard links
- 1.00mm pitch, vertical and right angle with options for ridge, locked latch, side latch, blade hold down, open wall
- Extensive range include options for surface mount, through-hole solder, press-fit and straddle mount terminations and keying options offered

High Speed

OverPass™ Cable System

INDUSTRY-LEADING DIRECT HIGH-SPEED INTERCONNECT
Amphenol's OverPass™ cable system offers a broad range of capabilities that allow our customers to efficiently transmit high speed signals from near an ASIC to anywhere in their system.
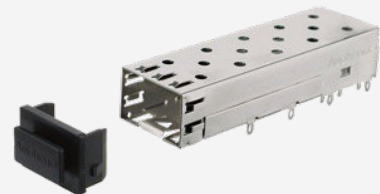
SFP Product Family

SUPPORTS APPLICATIONS FOR UP TO 6 Gbps PER CHANNEL.
The connector accepts multiple transceivers per INF-8074i and combines, transmits, and receives functions in a low cost, compact format.

ExpressPort® SFP+

Minimizes impedance discontinuities and reflections at high data rates and provides a 10 to 20 dB improvement in Near-End Crosstalk

High Speed

Lynx™

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR
Amphenol's Lynx™ is a 4-row product offering doubling the density in a 2-row footprint that is suitable for a wide variety of applications in datacom, enterprise server, industrial, medical and more.

Lynx™ QD

THE QUAD DIFFERENTIAL SOLUTION
Optimized for differential pair signaling, Lynx™ QD sets a new standard for density and flexibility that offers an innovative, high performance interconnect with PCIe® Gen 5 support. Lynx™ QD supports data rates of 56 Gb/s PAM4.

SFP28 25G Transceivers

LOW POWER CONSUMPTION, HIGH SPEED, HIGH RELIABILITY
Amphenol 25G SFP28 optical transceiver includes SR, LR Lite, LR, ER, etc. adopt LC interface and compatible with IEEE802.3by, Mainly applied in 25G Ethernet, CPRI10 and other environments.
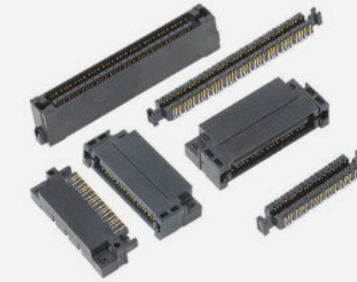
QSFP28 100G Transceivers

LOW POWER CONSUMPTION, DUAL RATE SUPPORT, HIGH SPEED AND HIGH RELIABILITY
Amphenol 100G QSFP28 transceivers include SR4,CWDM4, LR4 and ER4 lite, adopt MPO or LC interface and compatible with IEEE802.3bm, SFF-8636 and other standards.

SFP+ 10G Transceivers

LOW POWER CONSUMPTION, HIGH SPEED, HIGH RELIABILITY
Amphenol's SFP+ 10G optical transceivers include SR, LR, ER, ZR and support duplex, bidi, cwdm, and dwdm solutions. They adopt a LC interface and are compatible with IEEE802.3ae, SFF-8472, SFF-8431 and other standards.

ExtremePort™ QSFP DD 112G Connectors

COMPRISED OF A 76 POSITION 0.8mm PITCH CONNECTOR
Designed and built for use in high-speed serial applications. Each port supports up to 800Gb/s in aggregate over an 8 x 112Gb/s electrical interface. The cage and connector design provides backwards compatibility to QSFP56 modules.
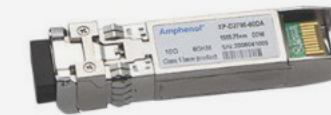
ExtremePort™ OSFP 112G Connectors

112GB/S PAM-4 WITH UP TO 800GB/S AGGREGATED BANDWIDTH
Amphenol's ExtremePort™ OSFP 112G interconnect system is comprised of a 60 position, 0.60mm pitch connector designed for high-speed serial applications.
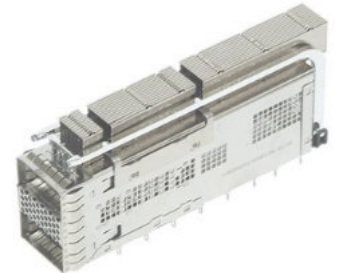
DensiLink® OverPass™ Assemblies

112G DOUBLE ENDED HIGH PERFORMANCE CABLING INTERCONNECT
DensiLink® OverPass™ products remove high speed signaling from the PCB and create a double ended, high performance

SK Series - Sockets

HIGH PERFORMANCE COMPRESSION MOUNT SOCKETS
Amphenol's patented compression mount contact technology utilizes industry-leading alloys to make cost effective and electrically robust socket solutions that offer high performance. With designs supporting pitches down to 0.4mm and speeds up to 40GHz.

APPLICATION SCOPE
Industry 4.0

Amphenol as a leader in technological advancements, is equipped with a range of connector and cable solutions to support various equipment enabling Industry 4.0.


Programmable Logic Controller

Amphenol provides innovative interconnect solutions that meet the challenges of implementing communication standards like Profinet, DeviceNet, and Modbus into PLC systems for efficient sensor and device control.

Uninterruptible Power Supply (UPS)

From high power drawer and busbar connectors to smart communication interfaces like RJ45 and USBs, Amphenol provides interconnect solutions that add to the reliability of UPS.
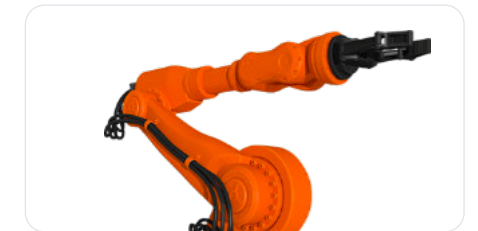
Robotic Arm

Amphenol offers a range of rugged, high current connectors with EMI shielding as well as high data rate industrial Ethernet connectors which ensures a safe and reliable operation of the Robotic Arm.


Servo Drive & Control Cabinet

Amphenol's advanced power connectors and data interconnect solutions establish enhanced connectivity and flawless communication in these systems.


Human Machine Interface & Computerized Numerical Control

Amphenol provides reliable connector solutions in these devices, ranging from memory and media connectors to data interconnects and FPC board connectors.
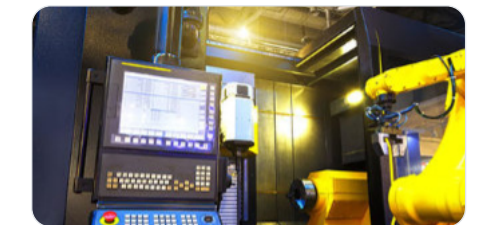
Robot-Control

Amphenol offers a varied range of high-performance and cost-effective PCB and I/O signal and power solutions that maximizes the efficiency of robotic controls.
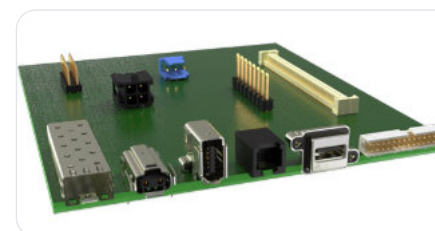
Industrial Ethernet Switch

Amphenol offers robust connector solutions that support industry grade dependability, network redundancy and includes support for Power over Ethernet (PoE) and Power over Data Line (PoDL) that enhance the connectivity of the switches.

Power Supplies

Amphenol offers high power, high current connectors that enhance the performance and durability of various power supply units from electronic devices that convert AC to DC, to benchtop equipment used for precision testing.

Test and Measurement

From advanced USB connectors to high-power interconnects, industrial Ethernet, and PCIe connectors, Amphenol offers high performing interconnect solutions for benchtop testing devices, handheld test equipment and test and measurement modules.

Industrial PC

Amphenol provides advanced and rugged industrial I/O and PCB connectors that go inside industrial PC compliant with IEC-61850-3 and IEEE 1613 standards.

Industrial Embedded Computing

Amphenol offers advanced, industrial I/O and PCB solutions that are built into Industrial Embedded Computers typically designed to work in harsh environments, are rugged enough to withstand wide temperature ranges and meet standards like IEC 68-2-27

Single board computing

Amphenol provides various connector solutions to augment the value of your SBC designs.
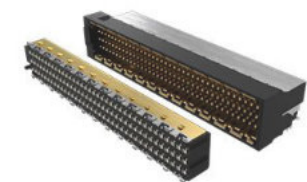
Single Pair Ethernet (SPE) IP67 Circular Push-Pull Connectors and Cables

NEXT GENERATION IEC63171-6 (M12 PUSH-PULL FORM FACTOR) COMPLIANT SEALED INDUSTRIAL ETHERNET CONNECTORS
SPE connectors for Industrial applications bring direct Ethernet connectivity to peripheral devices like sensors, actuators, and vision system cameras that operate at speeds up to 1Gb/s.
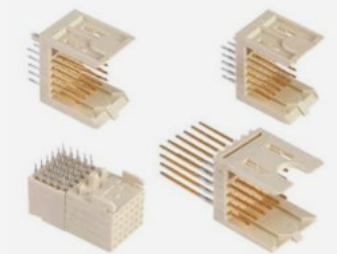

ix Industrial™ IP6X Rectangular Push-Pull Connectors and Cables, NDH Series

SEALED IX INDUSTRIAL™ LATCHING INTERFACE FOR RUGGED APPLICATIONS
The ix Industrial™ IP6X Rectangular Push-Pull connector and cable solution provides Cat6A Ethernet connectivity using the IEC 61076-3-124 mating interface.
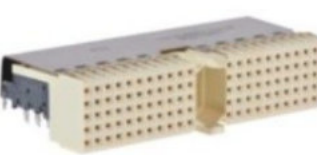

Rugged MRD Series Circular Locking Connectors

IP67 HARSH INDUSTRIAL CONNECTORS
MRD series connectors are available in 2, 3, 4, 5, 6, 7, 8 and 9 position form factors. Housing options include all plastic constructions as well as metal locking bodies for greater durability.

DIN 41612 High-Temperature Headers and Receptacles

HARSH ENVIRONMENT CONNECTOR ENHANCED FOR INDUSTRIAL APPLICATIONS
DIN 41612 High Temperature (HT) connectors meet the fire safety standards required in Industrial (Transportation, Power) market.

0.50mm Power Pin Floating Board-to-Board Connectors

HIGH SPEED HIGH CURRENT POWER PIN BOARD-TO-BOARD CONNECTORS
Power pin 0.50mm pitch floating board-to-board connector system is designed for applications with large current and require space saving features, supports high-speed data rate up to PCIe® Gen4 16Gb/s.

Minitek® Pwr Family Connector System

COMPACT, ROBUST AND VERSATILE
A complete solution including wire-to-wire and wire-to-board, in pitch sizes ranging from 3mm to 5.7mm with current ratings from 5A to 23A per contact.

D-Sub High Performance Board-Mount Connectors

PERIPHERAL I/O CONNECTORS WITH MACHINED CONTACTS UP TO 50 POSITIONS
Amphenol's FCI D-Sub High Performance Board-Mount Connectors are designed for severe environment applications industrial of telecommunications, aerospace, military (125˚C) class and for particularly severe applications, especially high temperature (+155˚C) class.

Minitek® MicroSpeed 1.00mm Board-to-Board Connector

EMI SHIELDED HIGH-SPEED BOARD TO BOARD CONNECTOR SYSTEM
Shielded connector family with superior EMC performance, Poka-yoke polarization supports blind mating and the dual beam contact system offers up to 25Gb/s.

ComboStak® Board-to-Board Connectors

COMPACT, HYBRID BOARD TO BOARD CONNECTORS
Signal and power in 1 connector saves space and avoids tolerance and alignment problems. Self alignment housing supports blind mating.

Minitek® 2.00mm - Board to Board

INDUSTRY PROVEN MODULAR CONNECTOR SYSTEM
Complete, modular connector system built around a reliable dual beam contact system. Offers all PCB interconnection types and saves up to 38% PCB space compared to 2.54mm systems.

CoolPower® SDM Connectors

HIGH CURRENT COOLBAND POWER CONTACTS FOR MAXIMUM PERFORMANCE
CoolPower® Slim Drawer Mini (SDM) Connectors offer a high level of mating configuration flexibility, current density, and a thin profile making it ideal for compact board-to-board power interconnects.

BarKlip® BK300 Connector

LOW RESISTANCE-HIGH POWER BUSBAR CONNECTOR
The BarKlip® BK300 connector features 14 independent conducting beams that maintain contact with the mating busbar.

BergStak® Secure Connector

HIGH SECURITY/HIGH DENSITY / HIGH SPEED BOARD TO BOARD CONNECTOR
One-time option with tamper free screw; terminals and shielding for high security needs. EMI shielding supports 10A power transmission, open pin field design for 32Gb/s.

Metral Backplane

Amphenol's FCI Metral® product family are designed in accordance with IEC 61076-4-104 and Telcordia GR-1217- CORE. One of the most popular connector series Metral® offers the broadest range of backplane connector solutions which includes right angle and vertical for both header and receptacle series.
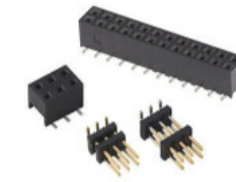
Millipacs Backplane Connectors

Amphenol's FCI Millipacs® is a 2.00 mm grid Interconnection system in hard metric configuration designed in accordance to IEC 917, IEC 61076-4-101, Telcordia GR-1217-CORE standards and fulfills Compact PCI bus architecture.

PCI Express® Gen 4 and Gen 5 Card Edge Connectors

EXTEND DIFFERENTIAL SIGNALING TO 16GT/S AND 32GT/S FOR NEXT-GENERATION SYSTEMS
Amphenol's expansive range of vertical and right-angle 1.00mm pitch PCIe® Gen 4 and Gen 5 connectors enable all generations of PCI Express® signaling and supports backward mating, and are footprint compatible with PCIe 3/2/1.

DDR5 SO-DIMM Connectors

HIGH SPEED HIGH DENSITY SO-DIMM SOCKETS
DDR5 SO-DIMM connectors deliver high-speed and bandwidth. Being half the size of regular DIMMs, they lower power consumption and promote better thermal management.

PCIe® M.2 Gen 5 Card Edge Connectors

HIGH DENSITY HIGH PERFORMANCE CONNECTOR
Amphenol's PCIe® M.2 Gen 5 Connectors provide 67 contacts on 0.50mm pitch. It occupies less board space, offers more connector height options and supports higher data rates compared to PCIe® Mini Card connector.

Modular Jack - Rugged

RUGGED RJ PANEL MOUNT CONNECTOR IP67 SEALING
Ruggedized RJ connectors with die cast housings and IP67 sealing for Harsh Environment applications, providing reliable performance in extreme conditions for the most demanding applications, and mate with standard RJ plugs.

Rugged USB Type C

RUGGED USB TYPE C CONNECTOR FOR HARSH ENVIRONMENT APPLICATION, GENERATION 2
Amphenol's MUSBR series USB Type C Connectors serve many markets and applications across the globe including Automotive, Communications, Consumer, Data, Industrial and Medical.
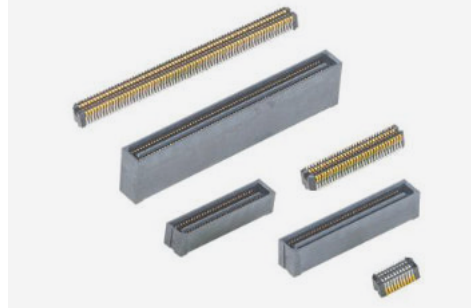
Magnetic Jack (RJMG) - 2xN

STACKED AND GANGED RJ45 SOLUTION SUPPORTING 100BASE-T, 1, 2.5, 5 AND 10GB/S
Ethernet PHY RJMG series offers a wide variety of fully RoHS compliant Magnetic Modular Jacks for RJ45. The right angle and through hole type is offered in 2xN (2x1, 2x2, 2x4, 2x6, and 2x8) port with tab-up and tab-down options.
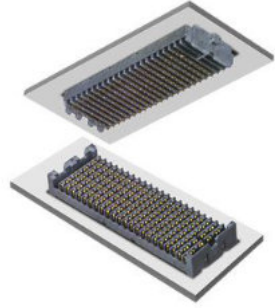
High Speed

Chameleon®

ADAPT AND ADVANCE TO THE NEXT GENERATION
With performance speeds up to 25 Gbps+, Chameleon meets the demand for faster, smaller and more compact connector solutions. Chameleon delivers a new level of performance unlike any other platform connector on the market today.

Lynx™

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR
Amphenol's Lynx™ is a 4-row product offering doubling the density in a 2-row footprint that is suitable for a wide variety of applications in datacom, enterprise server, industrial, medical and more.

Lynx™ QD

THE QUAD DIFFERENTIAL SOLUTION
Optimized for differential pair signaling, Lynx™ QD sets a new standard for density and flexibility that offers an innovative, high performance interconnect with PCIe® Gen 5 support. Lynx™ QD supports data rates of 56 Gb/s PAM4.

SK Series - Sockets

HIGH PERFORMANCE COMPRESSION MOUNT SOCKETS
Amphenol's patented compression mount contact technology utilizes industry leading alloys to make cost effective and electrically robust socket solutions that offer high performance. With designs supporting pitches down to 0.4mm and speeds up to 40GHz.
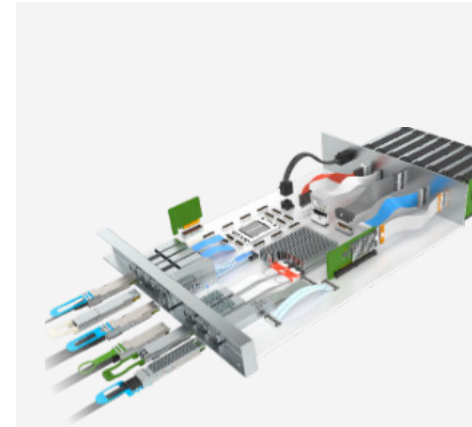
OverPass™ Cable System

INDUSTRY-LEADING DIRECT HIGH-SPEED INTERCONNECT
Amphenol's OverPass™ cable system offers a broad range of capabilities that allow our customers to efficiently transmit higvh speed signals from near an ASIC to anywhere in their system.

VHDM, VHDM-HSD

SCALABLE DESIGN SUPPORTING UP TO 25 Gb/s
Scale systems to next generation speeds without costly re-designs. Single ended and differential design; supports embedded capacitors. 5, 6, and 8 row available.

cStack™

CUSTOMIZABLE SOLDERLESS INTERPOSER-BASED ONE-PIECE STACKER
The Amphenol cStack™ high speed solder-less interconnect solution provides limitless flexibility for board-to-board mezzanine applications and board-to-board stackable and coplanar applications when terminated to a flex circuit.

InfinX Mezzanine Connectors

OPTIMIZED FOR PERFORMANCE AND DIFFERENTAIL PAIR SIGNALING
The InfinX® high-speed mezzanine connector solution is designed to meet the needs of 25+Gb/s applications. Available in 4- and 6-Pair configurations, InfinX is your best choice for high speed board-to-board applications.
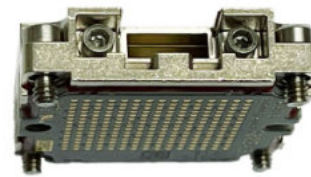
Leap® On-Board Transceiver

SMALL, FAST AND POWER EFFICIENT.
Amphenol's 300Gb/s Leap®High-Speed Optical Module is faster, smaller, and more cost and power efficient than most conventional datacenter interconnects.
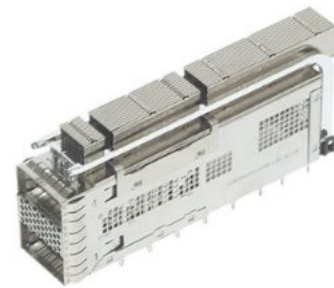
ExtremePort™ QSFP DD 112G Connectors

ENABLES 400G and 800G AGGREGATE INPUT PER PORT
A 76-position, 0.8mm pitch connector built for use in high-speed serial applications. One of the industry's leading multi-lane pluggable form factors used across Ethernet, Fibre Channel and InfiniBand.

ExtremePort™ OSFP 112G Connectors

112GB/S PAM-4 WITH UP TO 800GB/S AGGREGATED BANDWIDTH
Amphenol's ExtremePort™ OSFP 112G interconnect system is comprised of a 60 position, 0.60mm pitch connector designed for high-speed serial applications.

DensiLink® OverPass™ Assemblies

112G DOUBLE ENDED HIGH PERFORMANCE CABLING INTERCONNECT
DensiLink® OverPass™ products remove high speed signaling from the PCB and create a double ended, high performance cabling interconnect. These cables support 56G and 112G signaling in hardware system designs.

APPLICATION SCOPE
Lighting

Amphenol is a leader in the Commercial and Industrial markets with an expanding range of lighting interconnect products.

Street Lighting

As a member of the Zhaga Consortium, Amphenol offers standardized lighting connectors for photocells with dimming and sensor capabilities to equip remote-controlled IoT based street lighting.

Interior Lighting

Amphenol offers LED lighting solutions for interiors that are compliant to Zhaga standards.

Outdoor Lighting

Amphenol offers outdoor Ethernet solutions that are Power over Ethernet (PoE) capable with Cat5E performance, as well as IP67 outdoor locking connectors for harsh environments.

Controllers

Modern automobiles are rich with ADAS features like smart LED lighting for adaptive headlights, and superior interior lighting. Amphenol provides a range of advanced USCAR2 compliant connectors like Minitek Microspace™, which are compact and meet LV214 standards.

Lighting
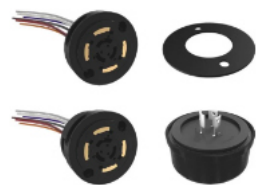
ANSI C136.41 FLA Series Receptacles & Caps

FLA Series C136.41 receptacles are available in 3, 5 and 7 position fixed and rotatable variants, providing power and dimming/control signal connections between the luminaire and a mated photocell in commercial street and utility lighting applications. Caps are available for use when a photocell is not mounted to the receptacle.

Zhaga Book 18 FLS Series Products

Zhaga Book 18 specifies the street light mounted luminaire receptacles, and the mating bases and domes used for the corresponding photocells and sensor modules needed for Smart City applications. The 4 contacts provide DALI protocol signal, Power and digital I/O connections between the receptacle and the mated sensor.

Zhaga Book 20 FLM Series DALI connectors

Zhaga Book 20 specifies the 2 position DALI-2 (Digital Addressable Lighting Interface) connector interface between interior LED lighting control modules and easily replaceable, interchangeable sensors used for presence detection, temperature and air quality sensing and other applications.

FLH Series Mini Sealed 2.50mm Pitch Connectors

FLH IP67 sealed, latching wire-to-wire and wire-to-board connectors are available in 3 and 6 position housings providing 2, 3, 4, and 6 contact options and up to 7A of current handling with 18AWG wire. Ideal for lighting and other applications in Harsh environments requiring a waterproof interface.

ANSI C136.41 FLB Series Bases & Domes

FBA Series C136.41 bases and domes form the foundational interconnect platform for manufacturers of photocells, sensors and communication modules used in commercial street lighting and utility applications.

FLK Series Knife Switch

KNIFE SWITCH PROVIDES A SAFETY DISCONNECT FOR STREET LIGHT LUMINAIRES
Knife Switch connectors are designed to automatically disconnect the internal wiring from the main supply inside the street lighting fixture when it is opened for servicing. This will help the technicians to safely repair, clean and maintain luminaire. Knife switches consist mating Plugs and Receptacles and are available in 3 position, single wire entry style.


FLT Series SMD Terminal Block

FLT TERMINAL BLOCKS PROVIDE DISCRETE WIRE CONNECTION TO A PCB
Amphenol's FLT Terminal Block is a surface mount device for discrete wire connection to a PCB for LED Modules and other applications. They provide easy, secure push-in connections compatible with a range of wire gauges.

Rugged MRD Series Circular Locking Connectors

MRD Series IP67 latching cable-to-cable and cable-to-panel circular connectors are available in 2 shell sizes with 2 to 9 positions, providing a tough mating interface for the harshest applications. All plastic, or plastic and metal housings feature metal thumb release latching for positive mating with an audible click for latching assurance.
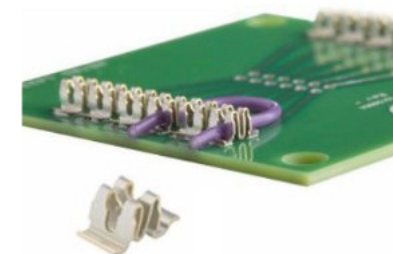

Griplet® Miniature IDC Connector

RELIABLE CONNECTION AND EASE OF INSTALLATION FOR WIRE-TO-BOARD TERMINATIONS
Amphenol's FCI Basics Griplet® Miniature IDC Connector offers a robust solution for miniature IDC wire-to-board connections. Its low profile and compact design makes Griplet® an ideal connector where space is tight and ease of installation is important.

0.50mm FFC/FPC Connectors with Autolock Mechanism - F308/F332 Series

RIGHT ANGLE NON-ZIF FLEX AUTOLOCK CONNECTORS
F308/F332 series is a 0.50mm pitch right angle Non-ZIF flex connector with an auto-lock mechanism and surface mount termination. It features a height of 2.45mm and comes in 6 to 68 contacts.

Lighting
High Speed
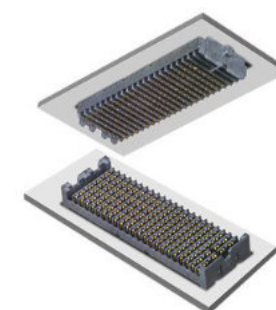
Chameleon®

ADAPT AND ADVANCE TO THE NEXT GENERATION
With performance speeds up to 25 Gbps+, Chameleon meets the demand for faster, smaller and more compact connector solutions. Chameleon delivers a new level of performance unlike any other platform connector on the market today.
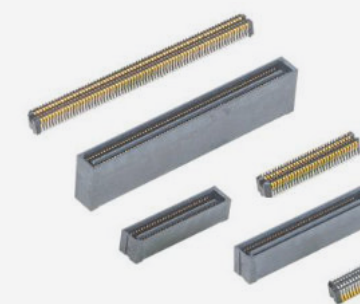
Minitek MicroSpaceXS™ 1.27mm Crimp-to-Wire Connector Platform

COMPACT, ROBUST AND VERSATILE CONNECTOR SYSTEM
Minitek MicroSpaceXS™ Crimp-to-Wire connector platform's unique design meets LV214 Severity-3 and USCAR-T2V2 specifications.

Lynx™

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR
Amphenol's Lynx™ is a 4-row product offering doubling the density in a 2-row footprint that is suitable for a wide variety of applications in datacom, enterprise server, industrial, medical and more.

Minitek MicroSpaceXS™ Waterproof 1.27mm Crimp-to-Wire Connector Platform

COMPACT, ROBUST AND VERSATILE CONNECTOR SYSTEM
Minitek MicroSpaceXS™ Waterproof Crimpto-Wire connector platform's unique design is compatible to LV214 Severity-3 and USCAR-T2V2 specifications.

Lynx™ QD

THE QUAD DIFFERENTIAL SOLUTION
Optimized for differential pair signaling, Lynx™ QD sets a new standard for density and flexibility that offers an innovative, high performance interconnect with PCIe® Gen 5 support. Lynx™ QD supports data rates of 56 Gb/s PAM4.

APPLICATION SCOPE

Server & Storage

Amphenol is a leader in providing industry proven solutions used across server and storage equipment, and next-generation enterprise applications.

Applications

Amphenol provides high-density, high-performance interconnect solutions for server and storage equipment used in multiple applications and markets.

AI Servers
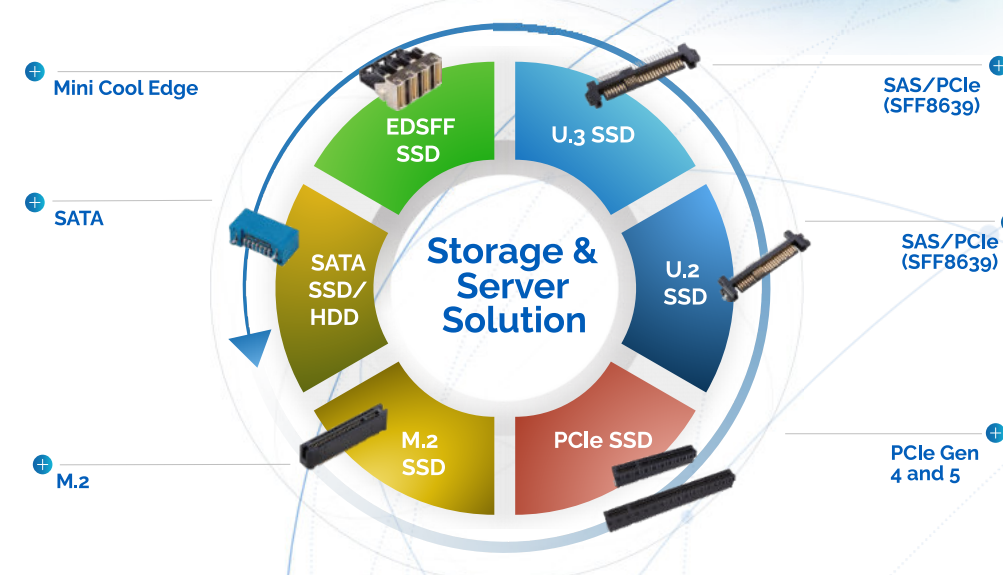
Server Storage

Networking / Telecommunications

Automotive

Consumer

Industry 4.0

Enterprise storage

Amphenol offers a wide range of high-performance enterprise SSD connector solutions for M.2, EDSFF, SAS, U.2, U.3, SATA and PCIe applications.

Mini Cool Edge

SATA

M.2

SAS/PCIe (SFF8639)

SAS/PCIe (SFF8639)

PCIe Gen 4 and 5

EDSFF SSD

U.3 SSD

SATA SSD/ HDD

Storage & Server Solution

U.2 SSD

M.2 SSD

PCIe SSD

Mini Cool Edge for GENZ/EDSFF/OCP

- 0.60mm pitch connector, supports high speed up to 112G PAM4
- Designed to meet SFF TA1002, Gen Z, EDSFF, OCP NIC 3.0 specifications
- Vertical, right angle, straddle mount and orthogonal options are available

Double Density Cool Edge for Ultra Compact Design

- 0.80mm pitch, power and signal hybrid connector
- Highly configurable wafer design for differential, single-ended and power options
- Supports high speed of up to 32GT/s(or 56GT/s PAM4) capability

Slim Cool Edge for High-Speed Hybrid Design

- 0.65mm pitch one-piece support high speed, sideband and power hybrid solution
- Supports high speed up to 32GT/s (or 56GT/s PAM4) capability
- Supports up to 330pin maximum

Compression, Board to Board Connectors and Interposer

- Provides a connection between either two PCB modules or one PCB and an electrical module
- Single-piece compression-type or two-piece board-to-board surface mount connectors

Mini Cool Edge IO

- Up to 64Gb/s PAM4, PCIe® Gen 4, PCIe® Gen 5, PCIe® Gen 6, over 1.0 meter transmission distance
- 0.60mm pitch connectors support both cable and card edge connections
- Options for 92Ω, 85Ω and 95Ω impedance and various pin number options – meeting PCIe®/NVMe/SAS/SFP(+)/QSFP specifications

Multi-Trak™

- Combines original PCIe® and Mini Cool Edge IO in one connector to provide both power (21A) and high/low-speed signal
- Up to 56Gb/s PAM4, PCIe® Gen 5, and target PCIe® Gen 6
- Options for 85Ω impedance and various pin number options – meeting PCIe®/NVMe/SAS/OCP DC-MHS/ SFF-TA-1033 specifications

Standard Cool Edge 0.8mm for Automotive and 5G Antenna

- Robust design with EMI shielding for Automotive Ethernet and Power applications
- Hybrid option for small cell active antenna BTB application
- One-piece small form factor to save space

PCIe® M.2 Gen 5 and Gen 4

- 67 contacts on 0.50mm pitch fully compliant with PCI-SIG PCIe® M.2 specification
- Dual Stacked, Shielded versions are available
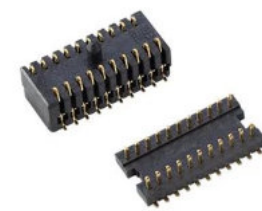- Right angle, vertical and various connector heights and keying options offered

PCIe® Gen4 and Gen5

- X1, X4, X8, X16, X24, X32 standard links
- 1.00mm pitch, vertical and right angle with options for ridge, locked latch, side latch, blade hold down, open wall
- Extensive range include options for surface mount, through-hole solder, press-fit and straddle mount terminations and keying options offered

ExtremePort™ Z-Link

- Compliant with Gen-Z and OCP NIC specifications. SFF-TA-1002/1020 solution
- High speed of up to 56Gb/s PAM4
- Supports both cable and card edge applications

ExtremePort™ Swift

- Ultra-low profile, 0.60mm pitch connector in 8X, 16X configurations. Mating height 8.38mm
- Designed for unshielded, internal I/O connectors
- With 85Ω impedance and meets PCIe® Gen 5 NRZ 32G specifications

USB Type-C Connectors

- Performs to USB4 and Thunderbolt4 high-speed specifications, and backward compatible with USB3.2 Gen1 and Gen2
- Waterproof versions featuring unique O-ring technology (LIM) perform up to IPX8
- Supports up to 240W (5A/48V) power supply

DDR5 SO-DIMM Connectors

- 262 positions connector in high-density design of 0.50mm pitch
- 4.00mm, 8.00mm, 5.20mm and 9.20mm height
- Right angle and vertical orientation with SMT mechanical hold-downs

DDR SMT Memory module Connectors

- Designed to meet JEDEC SO-016, SO-017, SO-019 and SO-023 specs
- U DIMM/R/LR Socket, Metal tab, Standard/Narrow/ latch available

PSAS, SAS and SATA Connectors

- SAS connectors (29-pins) support hot plugging and blind mating of HDDs/SSDs, 2 signal lanes support up to 24Gb data rate (SAS 4.0).
- PSAS connectors (68pins) support SAS HDD and NVME SSDs with 2 SAS lanes supporting up to 24G data rate and 4 PCIe lanes supporting up to 32G (PSAS 5.0) data rates.

RJMG

- 10/100T, 1GBT (10/100/1000-BT), 2.5G, 5G , 10G, Power Over Ethernet (PoE, 15W~150W) , integrated with surge protection.
- Commercial 0~70°C and industrial -40~85°C & -40~105°C .
- Meets IEEE802.3ab and supports various Ethernet PHY

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

Fan Connectors

- Blind-Mate Interface Wire to Board connectors from 1.25mm to 2.54mm pitch with max current rating 5.5A/pin. Designed for Server and Storage applications
- Card to Wire connectors in 2.44mm and 2.54mm pitch with current rating 4A/pin. Designed for Switch application

BarKlip® BK500 IO

- Distributes up to 500A per contact
- Simple configurable plug-and-play solutions
- Fully compliant with ORv3 Power Output Specifications

BarKlip® BK150 IO

- Distributes up to 150A per contact between busbars, cables, and circuit boards
- Simple configurable plug-and-play solutions
- Fully compliant with ORv3 IT Gear Power Input Solution Specifications

AC Input Connector and Cable Assemblies

- 7-Pin connector designed for Star, Delta, and single-phase connections
- Simple configurable plug-and-play solution designed to meet various current and voltage ratings
- Fully compliant with OCP ORv3 Power Shelf Universal Input Connect Specifications

BarKlip® XP300/ XP200

- Current ratings up to 300A and 200A
- Mates with 3.0mm busbar
- ±2.0mm gatherability

CoolPower® SDM

- Up to 35A per pin, high current Coolband contact technology
- Backplane, coplanar, and orthogonal configurations available
- 2 position or 4 position available

EnergyEdge™ X-treme

- 3000W at 12V
- Available in straddle mount, right angle, right angle coplanar, and vertical configurations
- 25% increase in current linear density

PwrBlade® MiniMezz

- Up to 50A per contact (high power) and 25A per contact (low power)
- Available stack heights range from 8mm to 20mm (tooled in 1mm increments)
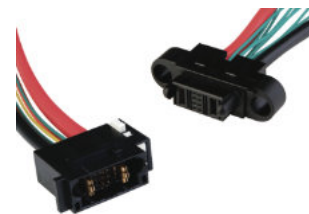- +/- 0.80mm gatherability for blind mate applications

PwrBlade® Mini Cable-to-Board Connector

- Rated up to 25A per power contact (50A/ column) without exceeding 30°C temperature rise in still air
- Modular tooling design
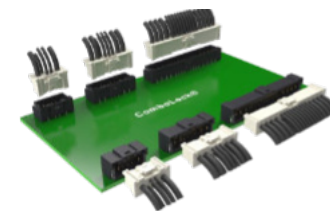- 12AWG for power contacts and 26AWG-22AWG available for signal contacts

PwrBlade® Mini Board-to-Board Connector

- Rated up to 45A per high power contact (4 adjacent contacts)
- Low profile 8.10mm height above board
- Modular tooling designs

PwrMAX® G2

- Highest density blind-mate Power and Signal connector series
- Up to 130A per contact and 18% size reduction
- Orthogonal, mezzanine, coplanar and right-angle configurations available for both PCB and busbar applications
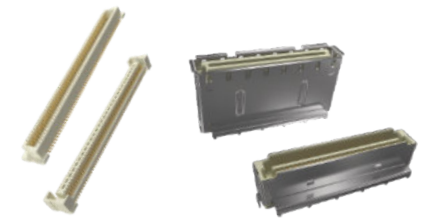
Minitek® PICPwr OCP Connector Solutions

- Newly launched 12V connector solution supports Open Compute Project Power Distribution and Management architecture requirements
- Operating power and voltage is 864W at 12VDC
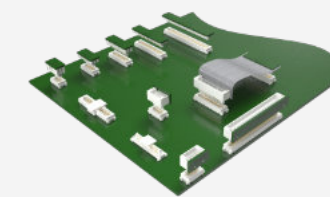
Minitek® Pwr Connector and Cable Assemblies

- Complete interconnect solutions for wire-to-wire and wire-to-board
- Available in pitch sizes of 3.00mm, 4.20mm and 5.70mm
- Current ratings from 5A to 28A

PwrMAX® I/O Cable Connector System

- Rated up to 50A/Contact (100A/column) without exceeding 30°C temperature rise in still air
- Latching options available
- Patented GCS® and GXT® plating

PwrBlade® ULTRA HD

- Up to 85A per contact
- 2.0mm high density signal pitch
- Ultra-low profile height of 9.6mm above board for optimized airflow

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

ComboLock® 1.00mm/3.00mm

- Compact, hybrid wire-to-board connector.
- Active Positive Latching
- 1.5A signal, 10A power

Conan® 1.00mm

- Secure, reliable connector
- Audible "click" to ensure perfect mating
- Speed up to 8 Gb/s.

BergStak® 0.80mm

- Ideal for use in high density applications
- Wide range of positions and stack heights
- Speed up to 16 Gb/s.

High Speed

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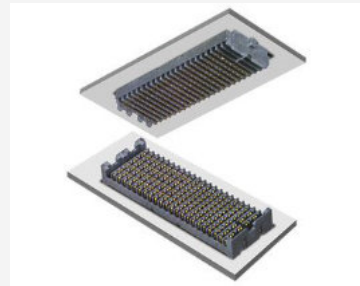
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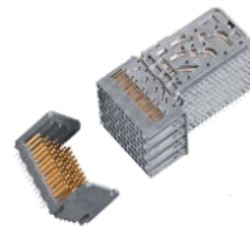
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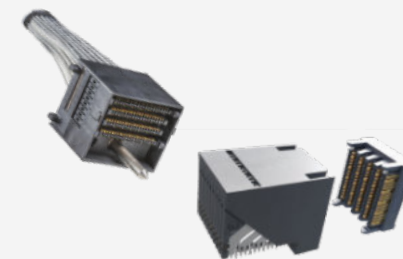
Mini-SAS HD Copper Cable Assemblies 6G/12G/24G

LEADING THE INDUSTRY WITH HD MINI-SAS.
Amphenol's Mini-SAS HD product is the present generation SAS storage interface addressing multi-channel bandwidth requirements of 6Gb/s, 12Gb/s, and 24Gb/s while meeting or exceeding SAS 2.1 SAS 3 and SAS 4 specifications.

QSFP28/56/112G Connectors & Cable Assemblies

SUPPORTS PER PORT DESIGNS FROM 100G, 200G AND 400G PAM4
4 lanes per cable – 28G, 56G and 112G per lane capability. Passive & active cables; 26AWG to 32AWG cable. Stacked, ganged and belly-to- belly connector and cage configurations. Available in all 4x form factors.

InfinX Mezzanine Connectors

OPTIMIZED FOR PERFORMANCE AND DIFFERENTAIL PAIR SIGNALING
The InfinX® high-speed mezzanine connector solution is designed to meet the needs of 25+Gb/s applications. Available in 4- and 6- Pair configurations, InfinX is your best choice for high speed board-to-board applications.

Mini-SAS HD Active Optical Cable

RELIABLE HIGH PERFORMANCE INTERCONNECT SOLUTION FOR MSAS APPLICATIONS
Amphenol's Mini-SAS HD Active Optical Cable is fully compliant to SAS 2.1 and SAS 3.0 industry standards as well as the SFF-8636 interface standard. Used primarily for external Enterprise storage applications.

CXP2 Active Optical Cable

HIGH DENSITY, EXCELLENT PERFORMANCE AND RELIABILITY
Amphenol's 300G CXP2 to CXP2 Active Optical Cable is a natural choice for optical cabling in data center / high performance computing hardware applications, providing a cost effective plug and play cabling solution.

QSFP DD Copper Cable Assemblies 200G/400G/800G

NEXT-GENERATION QSFP DD CABLES
These double-density copper cables now enable 400G and 800G in application lengths from 0.5 meter up to and including 3 meters. Cable sizes: 25 AWG - 32 AWG. Available in all 4x form factors.

TR Multicoax Connector

HIGHEST DENSITY HIGH SPEED COAX CONNECTOR
TR Multicoax delivers superior signal integrity from multiple high speed analog or digital channels. With a choice of 20GHz, 40GHz, or 70GHz configurations, users can upgrade their connectors according to bandwidth requirements on their application.
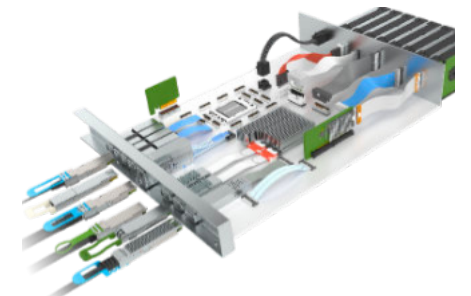
OverPass™ Cable System

INDUSTRY-LEADING DIRECT HIGH-SPEED INTERCONNECT
Amphenol's OverPass™ cable system offers a broad range of capabilities that allow our customers to efficiently transmit high speed signals from near an ASIC to anywhere in their system.

32G FC Transceivers

FIBRE CHANNEL LINKS UP TO 28.05 GB/S OVER MULTIMODE FIBER
The 32G FC transceivers are designed to be used in Fibre Channel links up to 28.05 Gb/s data rate over multimode fiber. They are compliant with FC-PI-6a, SFF-8472 Rev 12.2c, and compatible with SFF-8432b.

64G FC Transceivers

SUPPORTS 57.8GB/S DATA RATE & LOW POWER
The module is compatible with 64G FC-PI-7. Features low power - 1.5W with outstanding BER and sensitivity. Electrically hot-pluggable.

Mini-SAS HD

LOW-PROFILE MINI-SAS HIGH DENSITY RECEPTACLE
The next generation SAS system; the SAS 2.1 standard meets SAS-3 next generation speed and density requirements that provides faster data transmission and more bandwidth for end users.

XCede® HD

SUPPORTS DESIGNS FROM 8G - 56G PAM4
The de-facto standard for high performance backplane designs with industry leading density. Supports Embedded Capacitors.

ExaMAX®

COST OPTIMIZED WITH SCALABLE PERFORMANCE TO 112G PAM4
Innovative design supports low insertion/extraction forces with reduced crosstalk and low insertion loss. Flexible architecture supports direct orthogonal, traditional backplane, coplanar and cable requirements.
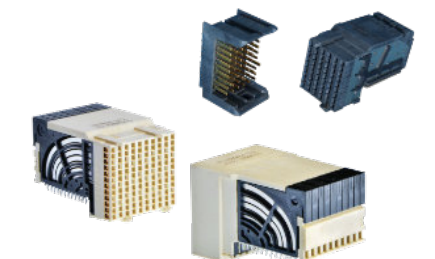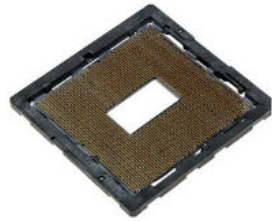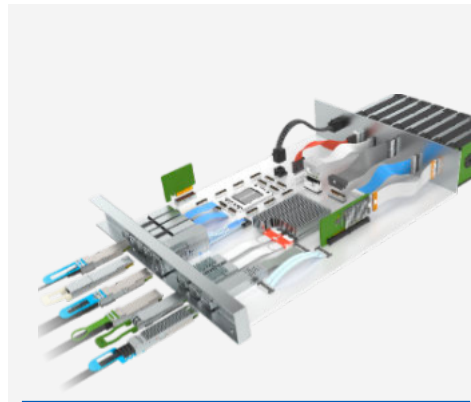
AirMax®

COST OPTIMIZED WITH SCALABLE PERFORMANCE UP TO 56G PAM4
Traditional backplane offering including standard and inverse gender. Standard is 3-, 4- and 5-Pair.
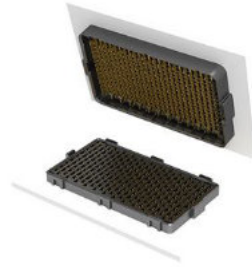
High Speed

cLGA® Land Grid Array Socket System

HIGH PERFORMANCE, LOW COST CHIP-TO-BOARD APPLICATION
Designed to bring conventional connector material construction to high performance, low cost chip-to-board applications. Used in applications ranging from handheld computer products to supercomputer systems.

OverPass™ Cable System

INDUSTRY-LEADING DIRECT HIGH-SPEED INTERCONNECT
Amphenol's OverPass™ cable system offers a broad range of capabilities that allow our customers to efficiently transmit high speed signals from near an ASIC to anywhere in their system.

M-Series 56 Mezzanine Connectors

56GB/S HIGH SPEED MEZZANINE BGA CONNECTOR SYSTEM
Leveraging proven technologies, including an industry leading BGA design, offering superior self-aligning and self-leveling. With a next generation differential pair contact design for up to 56Gb/s NRZ and 112Gb/s PAM4 performance.
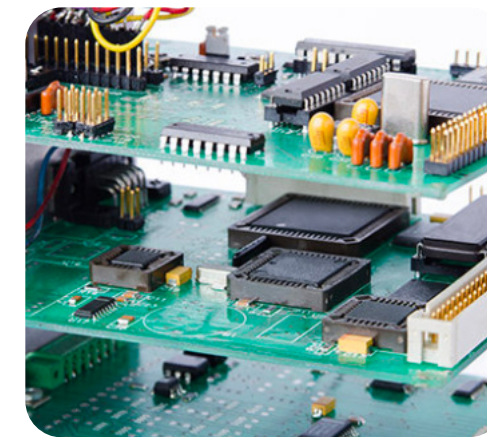
APPLICATION SCOPE

Test & Measurement

From benchtop test equipment to mobile, handheld, and miniaturized versions with increased precision; Amphenol offers robust, high performance connector solutions that help measure these critical parameters.

Handheld Test Devices

Today digital multimeters provide higher density testing, lower test times and higher accuracy that add to convenience and cost reduction. From handheld devices such as Voltmeters, Ohmmeters, Ammeters, and Multimeters, to test equipment for the electrical, mechanical, and environmental testing of DUTs in various fields, including medical, and commercial. Amphenol has an array of next generation interconnect solutions ideal for sleek, handheld test equipment.

Test and Measurement Modules

With increased test speed and reduced latency, test modules are especially beneficial for data-intensive and augmented test applications. From advanced USB connectors, to industrial Ethernet and PCIe connectors, Amphenol offers high performing interconnect solutions for test and measurement modules.
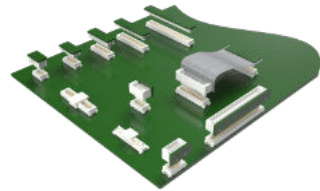

Benchtop Test Equipment

From oscilloscopes for testing consumer devices like smartphones, cameras, AV systems, PC peripherals, and related ICs, to Spectrum Analyzers used for all kinds of radio- frequency (RF) circuits to measure characteristics like the frequency response, noise and distortion - Amphenol provides high performing I/O, board-to-board and modular jacks along with industrial Ethernet solutions and high-power interconnects for various benchtop testing devices. Learn more at amphenol-cs.com.
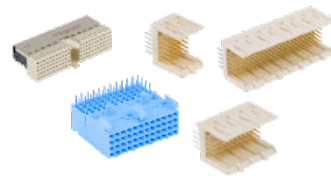
Test & Measurement

TEST & MEASUREMENT

ComboStak® 0.80mm / 2.00mm

- Hybrid and medium power solution
- 0.8A signal, 20A power
- Signal speed up to 12Gb/s.

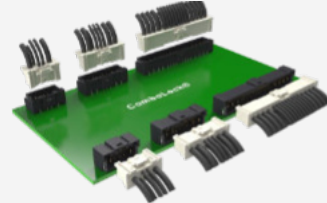## ComboLock® 1.00mm/3.00mm

- Compact, hybrid wire-to-board connector.
- Active Positive Latching
- 1.5A signal, 10A power

Modular Systems 2.54mm/ 2.00mm

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

High mating cycle connectors for Test and Measurement Equipment

- Supports 100k cycle mating/unmating – Ideal solution for test and measurement equipment.
- Non-soldering type allows replacement of connector without damaging the main PCB after 100,000 cycles
- Supports DDR5 data rate

DDR5 SO-DIMM Connectors

- 262 positions connector in high-density design of 0.50mm pitch
- 4.00mm, 8.00mm, 5.20mm and 9.20mm height
- Right angle and vertical orientation with SMT mechanical hold-downs

Compression, Board to Board Connectors and Interposer

- Provides a connection between either two PCB modules or one PCB and an electrical module
- Single-piece compression-type or two-piece board-to-board surface mount connectors

Conan® 1.00mm

- Secure, reliable connector
- Audible "click" to ensure perfect mating
- Speed up to 8 Gb/s.

BergStak® 0.80mm

- Ideal for use in high density applications
- Wide range of positions and stack heights
- Speed up to 16 Gb/s.

High Temperature Backplane Connectors

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

PCIe® M.2 Gen 5 and Gen 4

- 67 contacts on 0.50mm pitch fully compliant with PCI-SIG PCIe® M.2 specification
- Dual Stacked, Shielded versions are available
- Right angle, vertical and various connector heights and keying options offered

PCIe® Gen4 and Gen5

- X1, X4, X8, X16, X24, X32 standard links
- 1.00mm pitch, vertical and right angle with options for ridge, locked latch, side latch, blade hold down, open wall
- Extensive range include options for surface mount, through-hole solder, press-fit and straddle mount terminations and keying options offered

DisplayPort 2.1 Connectors

- DP2.1, UHBR20, 80Gbps/4 Lanes, 85ohm, for DP80 cable
- Backward compatible to DP1.4 footprint.
- Optional for flange and plastic post.
-

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
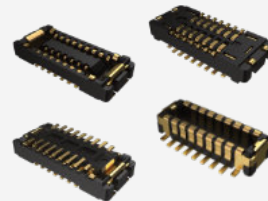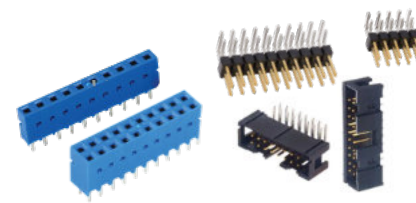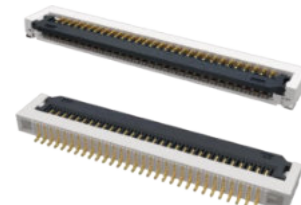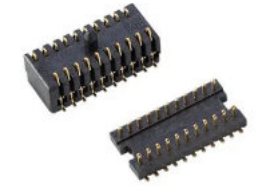- Features 2-beam twisted tulip contact which provides an equalized signal path

Micro Board-to-Board

- Low profile and fine pitch for high density applications
- High current rating (Up to 5A)
- Chamfer connector design prevents mismatching

FFC/FPC Connectors

- From 0.21mm to 2.0mm pitch with various heights ranging from 0.5mm to 6.25mm.
- Easy to operate and high vibration-proof performance
- Automotive grade versions compliant with USCAR2 and LV214 are available
- FFC cable can be supported as a whole solution

USB Type-C Connectors

- Performs to USB4 and Thunderbolt4 high-speed specifications, and backward compatible with USB3.2 Gen1 and Gen2
- Waterproof versions featuring unique O-ring technology (LIM) perform up to IPX8
- Supports up to 240W (5A/48V) power supply
-

Ruggedized

- Ruggedized, IP67 sealed
- Connectors & cables
- RJ, USB, USB-C, D-Sub, HDMI
- MRD Circular latching
- FLH rectangular latching
- Industrial, commercial, lighting

D-Sub Slimline

- Ultra slim body with contact alignment in a single row for sigificant saving in boad space and with mating compatibility
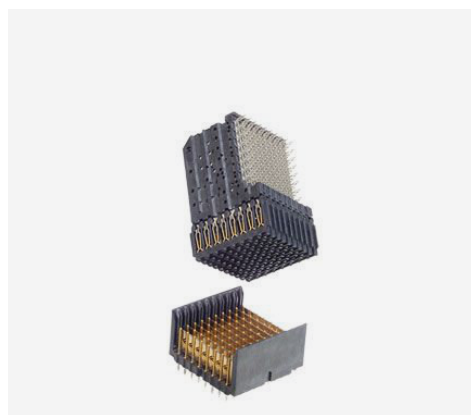
High Speed

XCede® Backplane Connector

ENABLING FUTURE DATA RATES.
While maintaining the same mating interfaces, this connector design provides designers with readily available 85Ω and 100Ω solutions to meet a wide variety of application needs, including Ethernet and PCI.
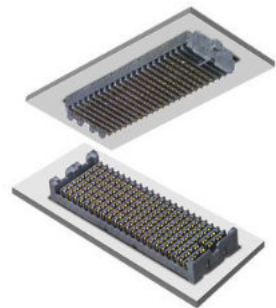

Chameleon®

ADAPT AND ADVANCE TO THE NEXT GENERATION
With performance speeds up to 25 Gbps+, Chameleon meets the demand for faster, smaller and more compact connector solutions. Chameleon delivers a new level of performance unlike any other platform connector on the market today.

VHDM®

OPTIMIZED FOR SINGLE-ENDED APPLICATIONS
Amphenol's VHDM® connector's modular format and breadth of components provides unmatched design flexibility. VHDM's support differential signaling within the same connector.
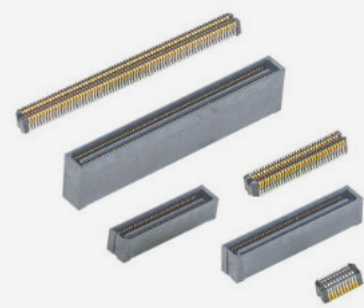
Lynx™

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR
Amphenol's Lynx™ is a 4-row product offering doubling the density in a 2-row footprint that is suitable for a wide variety of applications in datacom, enterprise server, industrial, medical and more.

ExaMAX® 56Gb/s High-Speed Backplane Connector 85Ohm

SUPPORTS INTEL QPI/UPI AND OTHER INDUSTRY STANDARD SPECIFICATIONS
The ExaMAX® 85Ohms backplane connector system is designed for higher bandwidth applications from 25Gb/s to 56Gb/s. Delivers superior signal integrity performance.


cStack™

CUSTOMIZABLE SOLDERLESS INTERPOSER-BASED ONE-PIECE STACKER
The Amphenol cStack™ high speed solderless interconnect solution provides limitless flexibility for board-to-board mezzanine applications and board-to-board stackable and coplanar applications when terminated to a flex circuit.

APPLICATION SCOPE

Artificial Intelligence & Machine Learning

Amphenol enables connectivity solutions with density, high performance and engineering expertise
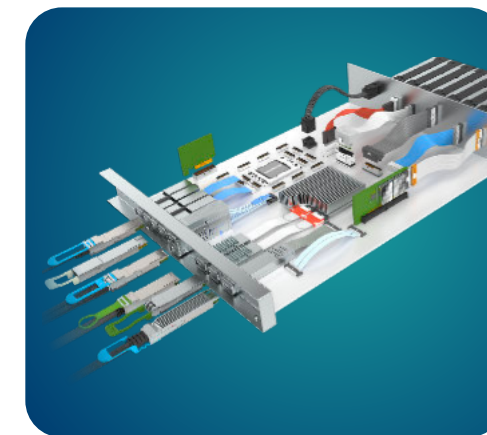
Integrated Signal Integrity Solutions

Amphenol provides reliable integrated signal integrity solutions across High-Speed IO, Backplane, and Mezzanine Connectors and Cables to meet the expansive goals of AI/ML. Adhering to PCIe and DDR standards, high performance storage and memory connectors along with high-speed magnetic modular jacks and wire to board power connectors, are available for all your AI/ML applications.

OverPass Cable System

Amphenol's OverPass™ cable system offers a broad range of capabilities that allow our customers to efficiently transmit high speed signals from near an ASIC to anywhere in their system. Reduce overall link signal loss and eliminate the need for expensive signal re-timers.

112G High Speed Solutions

Amphenol understands how to provide connector solutions to enable the higher speeds of today. We have the tools and expertise to help our customers get there, electrically and mechanically – and every type of connector needed for 112G integration.

Amphenol has 112Gb/s connector solutions for every application that requires a connector. Paladin® and ExaMAX® are used for mezzanine and traditional, cabled, and orthogonal backplane. Amphenol SFP, SFP DD, QSFP, QSFP DD, and OSFP connectors and cable are available for 112Gb/s applications. We also have solutions for more niche applications. For example, Mini Cool Edge and Swift support 112Gb/s channels with card edge interconnectivity.

Double Density Cool Edge for Ultra Compact Design

- 0.80mm pitch, power and signal hybrid connector
- Highly configurable wafer design for differential, single-ended and power options
- Supports high speed of up to 32GT/s(or 56GT/s PAM4) capability

Mini Cool Edge for GENZ/EDSFF/OCP

- 0.60mm pitch connector, supports high speed up to 112G PAM4
- Designed to meet SFF TA1002, Gen Z, EDSFF, OCP NIC 3.0 specifications
- Vertical, right angle, straddle mount and orthogonal options are available

PCIe® Gen4 and Gen5

- X1, X4, X8, X16, X24, X32 standard links
- 1.00mm pitch, vertical and right angle with options for ridge, locked latch, side latch, blade hold down, open wall
- Extensive range include options for surface mount, through-hole solder, press-fit and straddle mount terminations and keying options offered

Mini Cool Edge IO

- Up to 64Gb/s PAM4, PCIe® Gen 4, PCIe® Gen 5, PCIe® Gen 6, over 1.0 meter transmission distance
- 0.60mm pitch connectors support both cable and card edge connections
- Options for 92Ω, 85Ω and 95Ω impedance and various pin number options - meeting PCIe®/NVMe/SAS/SFP(+)/QSFP specifications

Multi-Trak™

- Combines original PCIe® and Mini Cool Edge IO in one connector to provide both power (21A) and high/low-speed signal
- Up to 56Gb/s PAM4, PCIe® Gen 5, and target PCIe® Gen 6
- Options for 85Ω impedance and various pin number options - meeting PCIe®/NVMe/SAS/OCP DC-MHS/ SFF-TA-1033 specifications

ExtremePort™ Swift

- Ultra-low profile, 0.60mm pitch connector in 8X, 16X configurations, Mating height 8.38mm
- Designed for unshielded, internal I/O connectors
- With 85Ω impedance and meets PCIe® Gen 5 NRZ 32G specifications

PCIe® Flip CEM, Slim CEM, Direct Cable Solution

- Flip CEM with "JJ" contact or "LL" contact provides better support for card edge to save keep out area for routing as compared to standard PCIe CEM contact of "JL".
- Standard PCIe CEM footprint is 8.2mm, Slim CEM is 7.45mm, Flip CEM is 5.9mm
- Direct Cable CEM features high-speed signal pins that directly attach to cable ends to save PCB loss
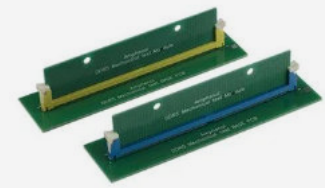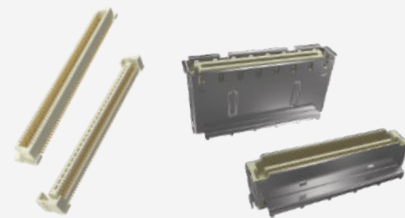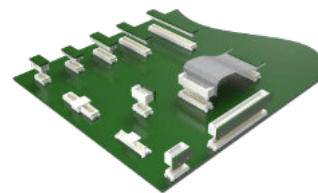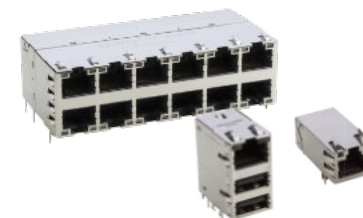
DDR SMT Memory module Connectors

- Designed to meet JEDEC SO-016, SO-017, SO-019 and SO-023 specs
- U DIMM/R/LR Socket, Metal tab, Standard/Narrow/ latch available

PSAS, SAS and SATA Connectors

- SAS connectors (29-pins) support hot plugging and blind mating of HDDs/SSDs. 2 signal lanes support up to 24Gb data rate (SAS 4.0).
- PSAS connectors (68pins) support SAS HDD and NVME SSDs with 2 SAS lanes supporting up to 24G data rate and 4 PCIe lanes supporting up to 32G (PSAS 5.0) data rates.

ExtremePort™ Z-Link

- Compliant with Gen-Z and OCP NIC specifications, SFF-TA-1002/1020 solution
- High speed of up to 56Gb/s PAM4
- Supports both cable and card edge applications

Fan Connectors

- Blind-Mate Interface Wire to Board connectors from 1.25mm to 2.54mm pitch with max current rating 5.5A/pin. Designed for Server and Storage applications
- Card to Wire connectors in 2.44mm and 2.54mm pitch with current rating 4A/pin. Designed for Switch application

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

BergStak® Secure 1.00mm

- High security, high density
- EMI Shielding
- Speed up to 32Gb/s.

BergStak® 0.80mm

- Ideal for use in high density applications
- Wide range of positions and stack heights
- Speed up to 16 Gb/s.

Conan® 1.00mm

- Secure, reliable connector
- Audible "click" to ensure perfect mating
- Speed up to 8 Gb/s.

RJMG

- 10/100T, 1GBT (10/100/1000-BT), 2.5G, 5G, 10G, Power Over Ethernet (PoE, 15W~150W) , integrated with surge protection.
- Commercial   0~70°C and industrial - 40~85°C & -40~105°C .
- Meets IEEE802.3ab and supports various Ethernet PHY

Minitek® PICPwr OCP Connector Solutions

- Newly launched 12V connector solution supports Open Compute Project Power Distribution and Management architecture requirements
- Operating power and voltage is 864W at 12VDC

Minitek® Pwr CEM-5 PCIe® Connector System

- Newly launched CEM 5.0 PCI Express® 12VHPWR auxiliary hybrid connector and cable assembly solution
- Supports 600W GPU cards
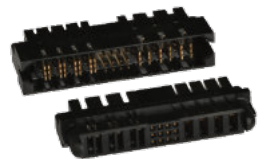- Rated current up to 9.5A per contact and features fully isolated terminals

BarKlip® BK500 IO

- Distributes up to 500A per contact
- Simple configurable plug-and-play solutions
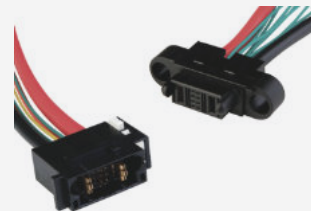- Fully compliant with ORv3 Power Output Specifications

BarKlip® BK150 IO

- Distributes up to 150A per contact between busbars, cables, and circuit boards
- Simple configurable plug-and-play solutions
- Fully compliant with ORv3 IT Gear Power Input Solution Specifications
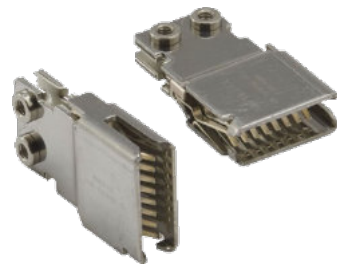

AC Input Connector and Cable Assemblies

- 7-Pin connector designed for Star, Delta, and single-phase connections
- Simple configurable plug-and-play solution designed to meet various current and voltage ratings
- Fully compliant with OCP ORv3 Power Shelf Universal Input Connect Specifications

CoolPower® SDM

- Up to 35A per pin, high current Coolband contact technology
- Backplane, coplanar, and orthogonal configurations available
- 2 position or 4 position available

EnergyEdge™ X-treme

- 3000W at 12V
- Available in straddle mount, right angle, right angle coplanar, and vertical configurations
- 25% increase in current linear density

PwrMAX® G2

- Highest density blind-mate Power and Signal connector series
- Up to 130A per contact and 18% size reduction
- Orthogonal, mezzanine, coplanar and right-angle configurations available for both PCB and busbar applications
-

PwrBlade® Mini Cable-to-Board Connector

- Rated up to 25A per power contact (50A/column) without exceeding 30°C temperature rise in still air
- Modular tooling design
- 12AWG for power contacts and 26AWG-22AWG available for signal contacts

PwrBlade® Mini Board-to-Board Connector

- Rated up to 45A per high power contact (4 adjacent contacts)
- Low profile 8.10mm height above board
- Modular tooling designs

PwrMAX® I/O Cable Connector System

- Rated up to 50A/Contact (100A/column) without exceeding 30°C temperature rise in still air
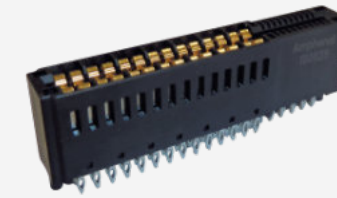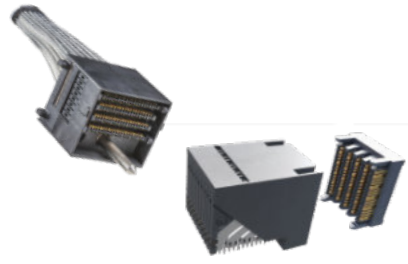- Latching options available
- Patented GCS® and GXT® plating

PwrBlade® ULTRA HD

- Up to 85A per contact
- 2.0mm high density signal pitch
- Ultra-low profile height of 9.6mm above board for optimized airflow

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® XP300/ XP200

- Current ratings up to 300A and 200A
- Mates with 3.0mm busbar
- ±2.0mm gatherability

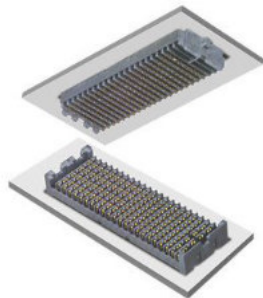# AI / Machine Learning
High Speed

ExaMAX®

COST OPTIMIZED WITH SCALABLE PERFORMANCE TO 112G PAM4
Innovative design supports low insertion/extraction forces 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 up to 8P.

Lynx™ QD

THE QUAD DIFFERENTIAL SOLUTION
Optimized for differential pair signaling, Lynx™ QD sets a new standard for density and flexibility that offers an innovative, high performance interconnect with PCIe® Gen 5 support. Lynx™ QD supports data rates of 56 Gb/s PAM4.

ExtremePort™ OSFP 112G Connectors

112GB/S PAM-4 WITH UP TO 800GB/S AGGREGATED BANDWIDTH
Amphenol's ExtremePort™ OSFP 112G interconnect system is comprised of a 60 position, 0.60mm pitch connector designed for high-speed serial applications.

DensiLink® OverPass™ Assemblies

112G DOUBLE ENDED HIGH PERFORMANCE CABLING INTERCONNECT
DensiLink® OverPass™ products remove high speed signaling from the PCB and create a double ended, high performance cabling interconnect. These cables support 56G and 112G signaling in hardware system designs.

OSFP Copper Cable Assemblies 200G/400G/800G

OCTAL SMALL FORM FACTOR PLUGGABLE CABLE ASSEMBLIES
Compatible with 25G/lane channel NRZ up to 112G/lane channel PAM4 signaling protocols that allow the cables to deliver aggregate bandwidths of 200G, 400G, and 800G per cable assembly.

XCede® HD

SUPPORTS DESIGNS FROM 8G - 56G PAM4
The de-facto standard for high performance backplane designs with industry leading density. Supports Embedded Capacitors.

Paladin HD®

DENSITY OPTIMIZED PERFORMANCE BEYOND 112G PAM4; ROADMAP TO 224G
Achieves 144 diff pairs within 1U Orthogonal slot. Consistent signal integrity performance over the entire mating range. Flexible architecture supports right angle female, direct orthogonal, and cables up to 12P.

Lynx™

HIGH SPEED AND DOUBLE DENSITY LOW-PROFILE BOARD-TO-BOARD CONNECTOR
Amphenol's Lynx™ is a 4-row product offering doubling the density in a 2-row footprint that is suitable for a wide variety of applications in datacom, enterprise server, industrial, medical and more.

OSFP Loopback 200G/400G

200G / 400G SYSTEM CONFIGURATION SOLUTION
Amphenol's OSFP (Octal SFP) Loopback Modules are part of our OSFP I/O system product family that includes copper cables, connectors and AOC's. These OSFP loopback cable assemblies are offered in four configurations.

QSFP DD Copper Cable Assemblies 200G/400G/800G

DOUBLE DENSITY PASSIVE COPPER CABLE ASSEMBLIES
The next-gen QSFP DD cables now enable 400G and 800G in application lengths from 0.5 meter up to and including 3 meters. Available in all 4x form factors.

QSFP DD Loopback 200G/400G

200G / 400G SYSTEM CONFIGURATION SOLUTION.
Amphenol's QSFP DD (Double-Density) Loopback Modules are part of our comprehensive QSFP DD product family offering - cables, connectors and AOC's. These QSFP DD loopback cable assemblies are offered in four configurations.
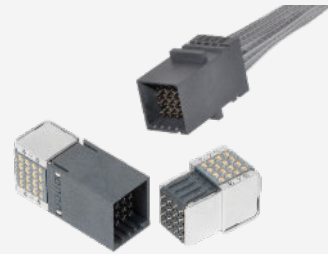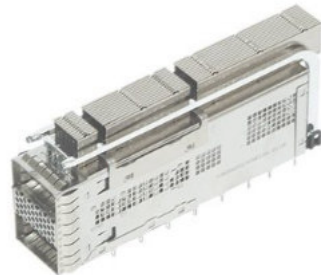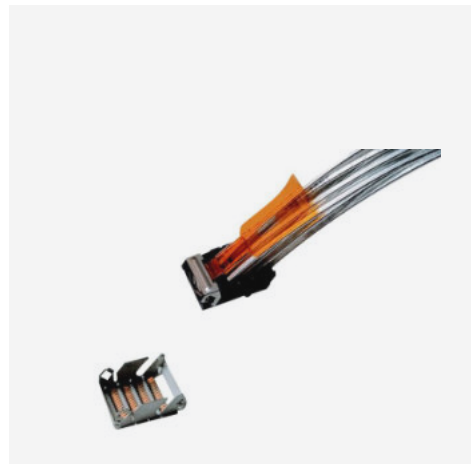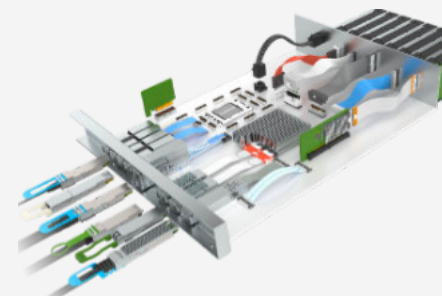
Chameleon®

COMPRISED OF A 76 POSITION 0.8mm PITCH CONNECTOR
Designed and built for use in high-speed serial applications. Each port supports up to 800Gb/s in aggregate over an 8 x 112Gb/s electrical interface. The cage and connector design provides backwards compatibility to QSFP56 modules.

M-Series 56 Mezzanine Connectors

56GB/S HIGH SPEED MEZZANINE BGA CONNECTOR SYSTEM
Leveraging proven technologies, including an industry leading BGA design, offering superior self-aligning and self-leveling. With a next generation differential pair contact design for up to 56Gb/s NRZ and 112Gb/s PAM4 performance.

ExtremePort™ QSFP DD 112G Connectors

COMPRISED OF A 76 POSITION 0.8mm PITCH CONNECTOR
Designed and built for use in high-speed serial applications. Each port supports up to 800Gb/s in aggregate over an 8 x 112Gb/s electrical interface. The cage and connector design provides backwards compatibility to QSFP56 modules.

SK Series - Sockets

HIGH PERFORMANCE COMPRESSION MOUNT SOCKETS
Amphenol's patented compression mount contact technology utilizes industry leading alloys to make cost effective and electrically robust socket solutions that offer high performance. With designs supporting pitches down to 0.4mm and speeds up to 40GHz.

OverPass™ Cable System

INDUSTRY-LEADING DIRECT HIGH-SPEED INTERCONNECT
Amphenol's OverPass™ cable system offers a broad range of capabilities that allow our customers to efficiently transmit higvh speed signals from near an ASIC to anywhere in their system.
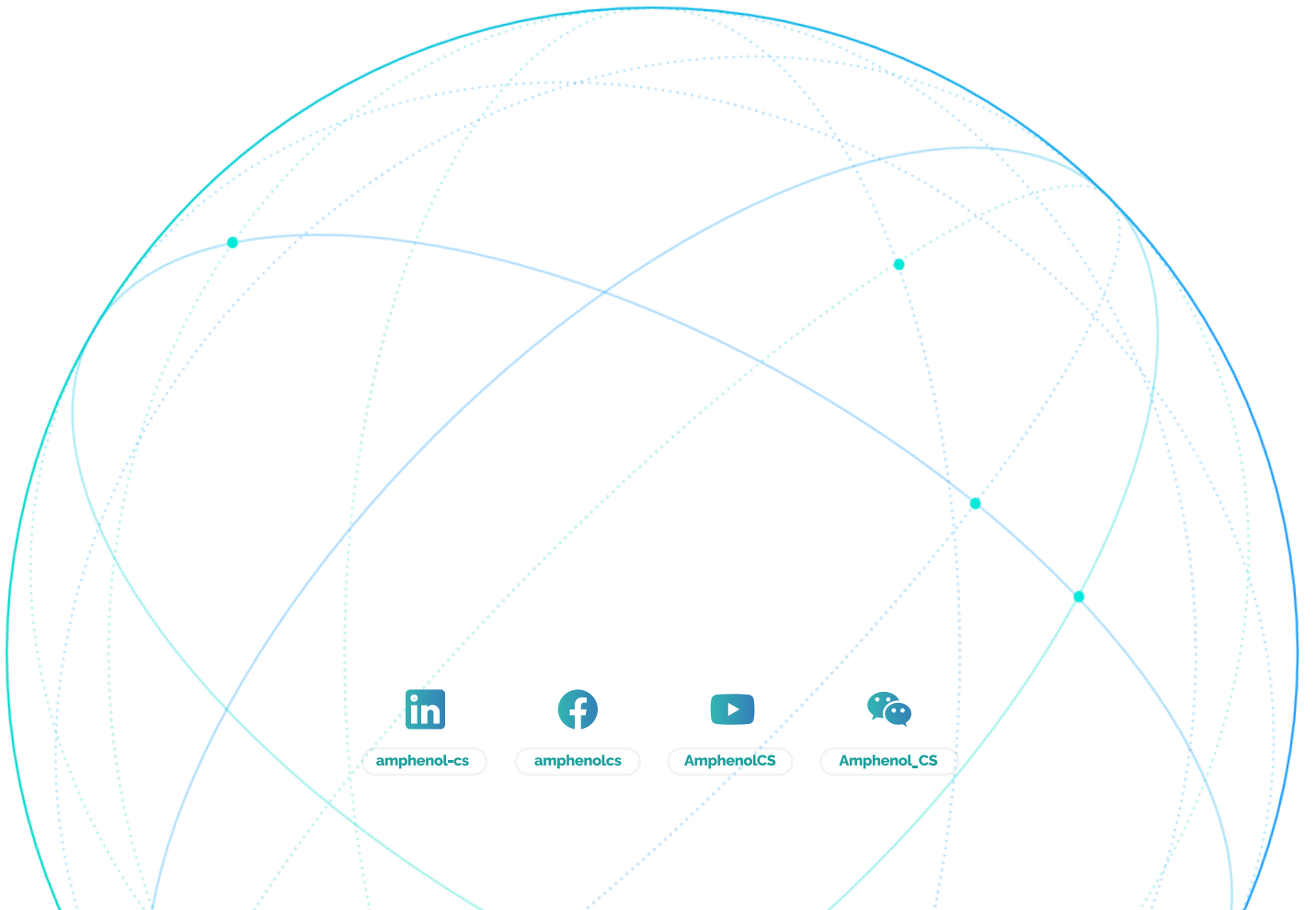
Mini-SAS HD Active Optical Cable

RELIABLE HIGH PERFORMANCE INTERCONNECT SOLUTION FOR MSAS APPLICATIONS
Amphenol's Mini-SAS HD Active Optical Cable is fully compliant to SAS 2.1 and SAS 3.0 industry standards as well as the SFF-8636 interface standard. Used primarily for external Enterprise storage applications.

Amphenol
COMMUNICATIONS SOLUTIONS

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