Industrial Automation

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

amphenol-cs.com

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.
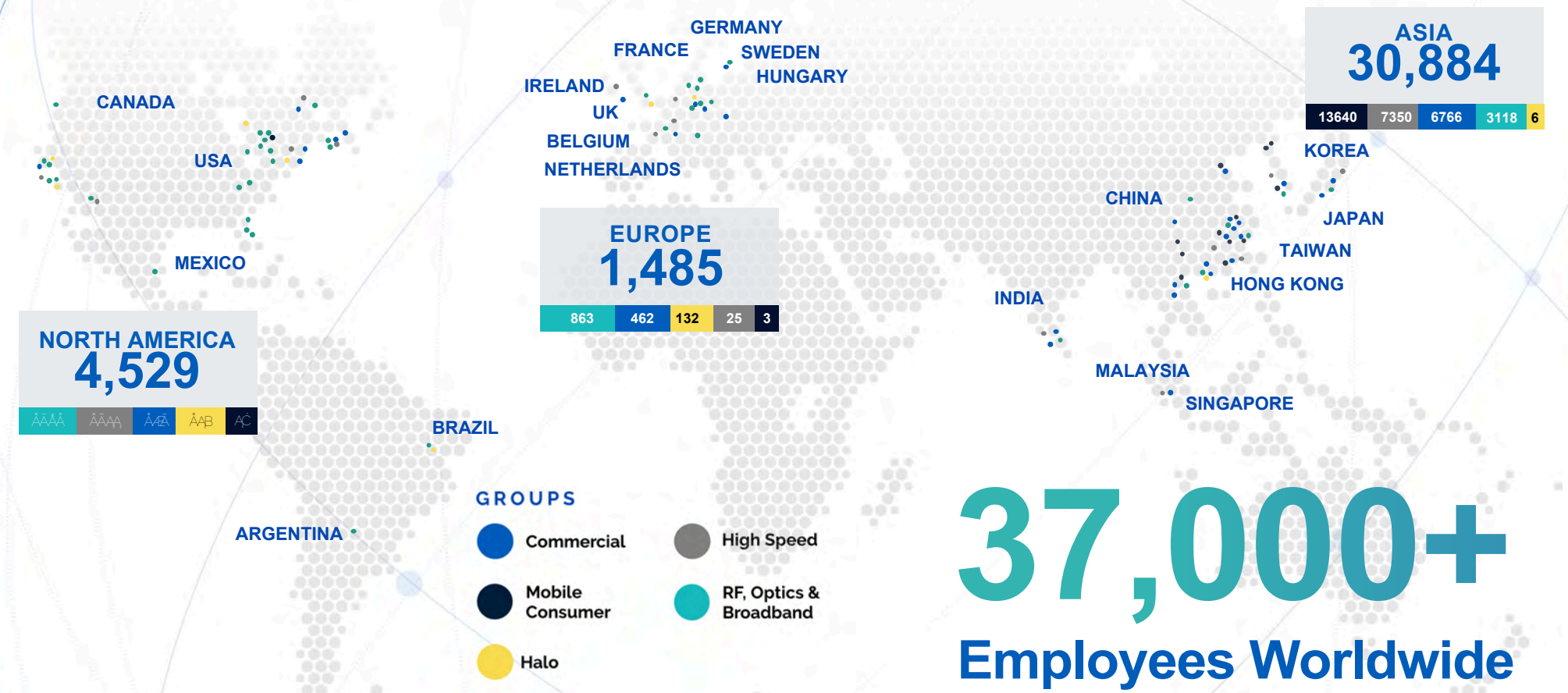
Amphenol Corporation is one of the world's largest designers and manufacturers of electrical, electronic and fiber optic connectors and interconnect systems, antennas, sensors and sensor-based products and coaxial and high-speed specialty cable.

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.

CANADA

USA

MEXICO

BRAZIL

ARGENTINA

NORTH AMERICA
4,529

ÅÅÅ	ÅÅÅ	ÅÅÅ	ÅÅB	AC

GERMANY
FRANCE
SWEDEN
HUNGARY
IRELAND
UK
BELGIUM
NETHERLANDS

EUROPE
1,485

863	462	132	25	3

ASIA
30,884

13640	7350	6766	3118	6

KOREA
CHINA
JAPAN
TAIWAN
HONG KONG
INDIA
MALAYSIA
SINGAPORE

GROUPS

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

37,000+
Employees Worldwide

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.

Industrial Automation

Single Pair Ethernet

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

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

Ruggedized

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

Industrial RJ Plugs

- Ruggedized RJ plugs & cables
- IDC termination, field installable
- Metal latching, full metal construction
- Cat6A, fully shielded
- Multiple cable entry angle options
- Factory and other applications

D-Sub Connectors & Cables

- SMT Standard Connectors
- Slimline SMT Connectors
- High Current Connectors & Cables
- Accessories (Hoods, Backshells)
- Customized Connectors & Cables

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
- Cable Assemblies

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℃ and industrial -40~85℃ & -40~105℃ .
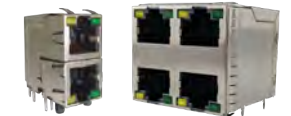- Meets IEEE802.3ab and supports various Ethernet PHY

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

DuraSWAP™ Swappable Battery Connectors

- IP67 rated swappable battery connector
- Provides continuous current of 100A and withstands 10,000 mating cycles
- Connector mates in four different orientations

IPC-M50 Connector

- Rated up to 50A per 6AWG contact (UL rated currents up to 120A)
- Rated up to 10,000 mating cycles
- UL tested and approved when cross-mated with competitive connectors

IPC-M350 Connector

- Rated up to 500A per 350MCM (185mm2) contact
- Rated up to 10,000 mating cycles
- UL tested and approved when cross-mated with competitive connectors

EnergyKlip™ EK160

- Rated up to 160A per contact
- IP67 seal available
- Robust latching system

MicroSpace™ / MicroSpaceXS™ 1.27mm

- Compact, robust and versatile.
- LV214 severity-2 / 3, USCAR-T2V2 compatible.
- 4A per contact, TPA, CPA features.

ComboLock® 1.00mm /3.00mm

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

WireLock® 1.80mm

- Robust, low mating force.
- USCAR-T2V2, LV-214 S3 compliant.
- 2A per contact, TPA, CPA features

EnergyKlip™ EK350

- Rated up to 350A per contact
- IP67 seal
- Robust latching system
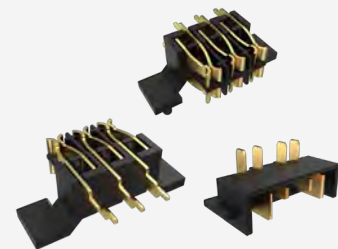
Battery Pack Connectors for Cordless Power Tools

- Robust battery pack charger connector for cordless power tools, lawnmowers, cordless vacuum cleaner, and personal care devices
- Ratings up to 45A per contact
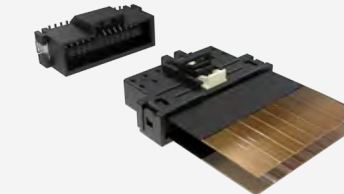- IP67 rated both mated and un-mated

PwrBlade® MiniMezz

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

FlexLock™ 3.20mm / 2.54mm

- FPC system for easy assembly
- USCAR-T2V2, LV-214 S3 compliant.
- 2A per contact, TPA, CPA features.

FlexFast™ Flex to Board Connector Solution

- Small size and low height flex to board connection solution.
- 0.45mm/0.75mm/0.9mm/1.5mm/1.8mm pitch. Pin counts from 12~100pin
- Automotive grade compliant to USCAR2 and LV214
- Designed for BMS, battery pack, Inverter+DCDC applications

Minitek® MicroSpeed 1.00mm

- Industrial grade reliability.
- Superior EMI, EMC performance.
- Speed up to 25Gb/s.

PwrBlade® Mini Cable-to-Board

- Rated up to 25A per contact (50A per column)
- Built-in squeeze-to-release latches
- Latching CPA (connector position assurance) features

PwrBlade® Mini Board-to-Board

- Rated up to 45A per power contact
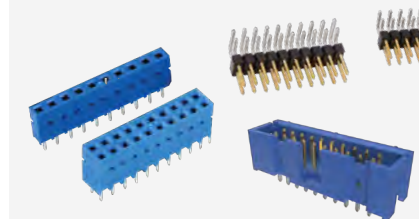- Lowest-profile PwrBlade® connector (8.10mm height above board)
- No PCB overhang

Minitek® Pwr Connector and Cable Assembly

- Wire-to-wire and wire-to-board solutions
- Current rating from 5A to 25A
- Available in pitch sizes of 3.00mm, 4.20mm, and 5.70mm

ComboStak® 0.80mm / 0.50mm

- Hybrid and medium Power solution.
- 0.8A / 0.5A signal, 20A / 25A power.
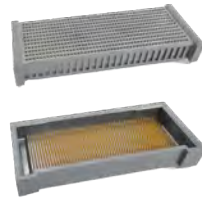- Signal speed up to 12Gb/s / 20Gb/s.

Modular Systems 2.54mm/2.00mm

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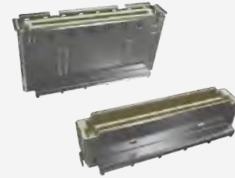- Board to Board, Wire/Cable to Board.

Conan® Lite 1.00mm

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

DensiStak™

- High density board to board.
- EMI Shielding, Blind-mating feature.
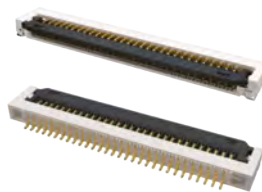- Speed up to 16Gb/s.

BergStak® 0.80mm

- High density applications.
- Wide range of positions and stack heights.
- Speed up to 16Gb/s.

COM-HPC

- 400pos 0.635mm COM-HPC supporting stack heights of 5mm and 10mm
- Up to PCIe® Gen 5 32Gbs per channel
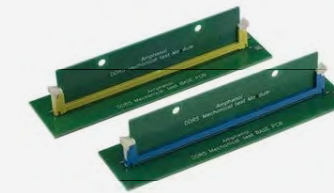- Gives CPU power support at 150W
- Supports up to 8 full DIMMs

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 SMT and SO-DIMM Memory Module Connectors

- 287-terminal and 288-terminal SMT connectors designed to meet JEDEC SO-023, and the new SO-023D specification. U DIMM/R/LR Socket, Metal tab, Standard/ Narrow/ latch available.
- SO-DIMM: 262-position connectors in high-density design of 0.50mm pitch. JEDEC SO-016, SO-017, SO-019 compliant Available in 4.00mm. 8.00mm, 5.20mm and 9.20mm height, right angle and vertical orientation with SMT mechanical hold-downs.

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.
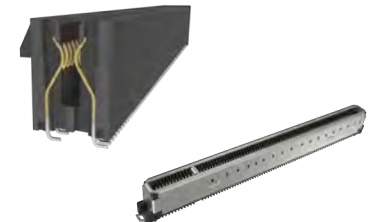
Compression, Board-to-Board Connectors and Interposer

- 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
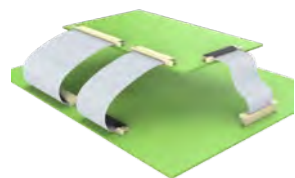
FloatCombo™ Floating Board-to-Board Connector System with Power Pin

- 0.50mm pitch connector with 4 independent power pins
- Supports 5A current per power pin and high-speed data rates up to 16Gb/s
- Various stacking heights from 8mm to 30mm with large floating allowance
- USCAR-2 T3V2 qualified

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
- Autolock option available

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

PCIe® Flip CEM, Slim CEM, Metal Cage CEM

- 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
- Metal cage CEM provides enhanced housing support

FFC Jumper

- Easy to operate
- Available in numerous circuit sizes (4 to 60)
- Both Type S (same-side) and Type O (opposite-side) available
- PET Insulation

Flexible Printed Circuit

- Design flexibility
- Wide range of pitch sizes, positions and stack heights
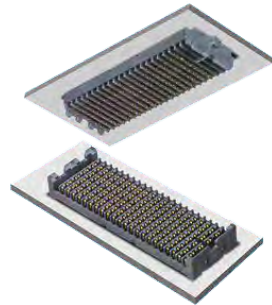- Speed up to 16Gb/s.

Spring Contacts

- Wide variety of heights ranging from 1.00mm to 20.0mm are offered as standard products
- Space saving design, suitable for compact devices
- Formed by one-step stamping, easy to be assembled

INDUSTRIAL AUTOMATION

High Speed

ExtremePort™ QSFP-DD 224G Connectors

ENABLES 400G, 800G & 1.6Tb AGGREGATE BANDWIDTH PER PORT
A 76 position, 0.8mm pitch connector built for use in high-speed serial applications. Each port supports up to 1.6Tb/s in aggregate over an 8 x 224Gb/s electrical interface. The cage and connector design provides backwards compatibility to all QSFP modules.

ExtremePort™ OSFP 224G Connectors

ENABLES 400G, 800G & 1.6T AGGREGATE BANDWIDTH PER PORT
Amphenol's ExtremePort™ OSFP 224G interconnect system is comprised of a 60 position, 0.6mm pitch connector built for use in high-speed serial applications. Allows for use of either 56G, 112G or 224G OSFP products in any port and supports passive & active copper and optical solutions

UltraPass™ OverPass™ Cable Assemblies

224G CONNECTION DIRECTLY FROM CHIP SITE TO EXTERNAL PORTS
UltraPass™ enables arrayed connector layouts for near-chip and on-package IO solutions, providing the highest differential pair count interconnect offering in the market. Up to 10X reduction in signal loss; addresses system thermal and mechanical needs.

Chameleon®

ADAPT AND ADVANCE TO THE NEXT GENERATION
With performance speeds up to 25 Gb/s+, 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.

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.

High Speed

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.
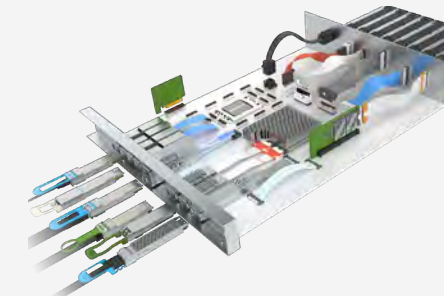
ExtremePort™ OSFP 112G Connectors

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.

UltraPass™ OverPass™ Cable Assemblies

224G CONNECTION DIRECTLY FROM CHIP SITE TO EXTERNAL PORTS
UltraPass™ enables arrayed connector layouts for near-chip and on-package IO solutions, providing the highest differential pair count interconnect offering in the market. Up to 10X reduction in signal loss; addresses system thermal and mechanical needs.

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.
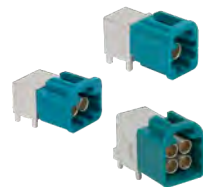
VHDM, VHDM-HSD

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.

RF

2.92 mm

The 2.92 mm interfaces offers low VSWR and excellent return and insertion loss, along with high power handing capabilities. This connector has the ability to mate with SMA, 3.5 mm and other K or 2.92 mm interconnects for additional versatility.

AMC

The AMC (Amphenol Micro Coaxial) connector series is a low profile (2.5 mm height off the board) option with extremely small board footprint (3 mm x 3 mm). These 50 ohm connectors offer reliable electrical performance up to 6 GHz with secure and easy snap-on mating.

AMC4

The AMC4 (Amphenol Micro Coaxial, 4th Generation) connector series is a low profile (0.6 mm height off the board) option with extremely small board footprint (2 mm x 2 mm). These 50 ohm connectors offer reliable electrical performance up to 6 GHz with secure and easy snap-on mating.

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 Gb/s. Ideal for compute modules, wire harnesses and camera applications. Custom sealed solutions available.

AUTOMATE Mini-FAKRA Cable Assemblies

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

BNC

BNC connectors are miniature, lightweight and reliable RF interconnect that feature a bayonet style coupling mechanism. This interface is available in a variety of 50 and 75 ohm PCB and cable-mount options to support a broad array of commercial and military-grade applications.

FAKRA Connectors

Color-coded and mechanically keyed for easy installation and to prevent mismatching, 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.

FAKRA to FAKRA Cable Assemblies

FAKRA to FAKRA assemblies are used to connect cameras, antennas, sensors and other devices to an ECU or compute module. 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 can be designed in any configuration utilizing a wide array of automotive cable type.

HD-BNC

Engineered to enhance electrical and mechanical performance, the HD-BNC connector series features the trusted bayonet coupling mechanism which provides tactile feedback and a positive lock for quick and guaranteed mating. Available in 50 ohm configurations that operate up to 6 GHz and 75 ohm options that provide excellent electrical performance up to an extended range of 12 GHz.

MCX

PCB and cable-mount 50 and 75 ohm options with quick connect/disconnect snap-on mating which reduces installation time. 50 ohm configurations support applications up to 6 GHz while 75 ohm 12G versions operate up to 12 GHz.

N-Type

Durable, weatherproof medium-size RF connector with configurations that support applications up to 18 GHz. This threaded interface provide excellent RF and mechanical performance in a broad range of products.

SMA

Versatile 50 ohm threaded connector series available in various PCB and cable-mount configurations provide lightweight, compact and vibration proof option. High-strength designs are ideal for harsh environments.

SMB

The SMB interface features a snap-on coupling mechanism and offers broadband performance with low reflection up to 4 GHz (extended performance up to 10 GHz). These RF interconnect are available in 50 ohm configurations designed with various materials including options for die cast components on non-critical areas to provide a low-cost solution.

TNC

Weatherproof threaded 50 ohm interface ensures connector will not de-couple in vibration-intense applications. Expansive product line includes designs for most industry-standard coaxial cable types. Durable construction for harsh environments.

Internal Antennas

FPC and PCB RF antennas designed for use inside of a connected device. These antennas are commonly terminated to wireless modules featuring AMC or compatible ultraminiautre connectors.

External Antennas

Mounted to the outside of a device by means of an RF connector, external antennas are engineered for indoor and outdoor use with robust designs available for harsher environments.

Amphenol

COMMUNICATIONS SOLUTIONS

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