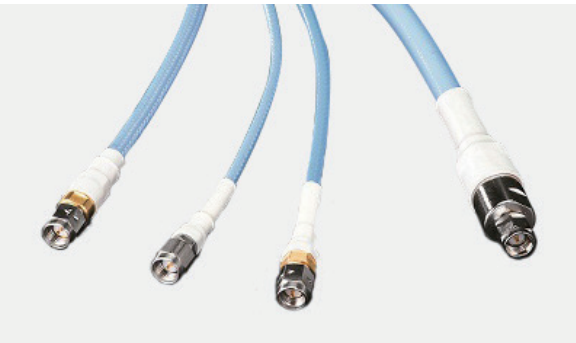
Amphenol
MILITARY & AEROSPACE



Space Systems Product Guide

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MIL-SPEC CIRCULAR

MIL-DTL-38999 Series III

Amphenol MIL-DTL-38999 Series III / EN3645 thread coupling connectors offer the highest performance capabilities for both general duty and severe environment applications. Different versions are available: "TV" metal versions (aluminum, stainless steel or marine bronze) as well as "CTV" composite versions, which offer a lightweight, corrosion resistant connector with the same high performance features as its metal counterpart.

MIL-SPEC DERIVATIVES

HD38999 Connectors

The HD38999 family of connectors has 30% more contact density than the highest density Mil spec D38999 connectors of its size. For those users who need in increase the amount of contacts in their application, the HD38999 series allows them to do so without increasing the size of their connector.

Iguana

The Iguana Series is fully intermateable and interchangeable with MIL-DTL-38999 Series III and provides an IP68 sealed interface offering an effective barrier against ingress of moisture and dust even while in its unmated condition. These connectors are optimized for PCB mounting operations with features including low-profile designs limiting the penetration into the equipment, molded stand-offs to aid soldering, inspection and cleaning and ground pins offering a low impedance shell to ground connection to increase the EMI performance at the equipment interface.

MIL-SPEC DERIVATIVES

HTC Titanium

The HTC Series is designed to meet the requirements of MIL-DTL-83723, EN2997 and Rolls-Royce ESC standards and are usually manufactured from Stainless Steel. Amphenol now manufacture the connectors from Titanium offering comparable performance to Stainless Steel, but with a 30% weight-savings, offering significant benefits in aero-engine applications where weight is critical. Compliant with the new Rolls-Royce ESC20 and ESC21 specifications, the connector features integral backshell cable termination and are widely used on current major engine programs.

Breakaway Fail Safe Connectors

Amphenol Tri-Start Breakaway Fail Safe Connectors provide unequaled performance in environments requiring instant disengagement. Designed to provide quick disconnect of a connector plug and receptacle with an axial pull on the lanyard. The "Breakaway" Fail Safe connector family offers a wide range of electrical and mechanical features.

PP39 / SC39

Cylindrical Push-Pull connectors with same dimensions and inserts as Mil-DTL-38999 connectors. Mechanical and Electrical performances meet or exceed the ones of Mil-DTL-38999 Series III connectors, class W or F. 9 Shell sizes, up to 128 contacts, including power patterns, Coax, Twinax, Triax, Differential Twinax, Quadrax and Optical termini. Available in lanyard release configuration as well. SC39 Snatch Releases versions also available from shell size 9 to 15.

MICRO-MINIATURE

2M Micro38999 Series

The 2M Series is a superior and versatile connector designed and tested to mil-spec standards, comparable to MIL-DTL-38999. The 2M Series is designed for interconnect applications requiring high performance and reduced size and weight. This smaller, high density, lightweight connector far exceeds the competition in quality and performance levels. 2M is intermateable with Glenair's Mighty Mouse.

Bantam Micro Bayonet Connectors

High mating cycles along with excellent shell-to-shell electrical bonding for EMI are the benchmark of rugged connectors. Amphenol has filled the gap between the most ruggedized military grade connectors and the consumer grade connectors with Bantam. This connector utilizes a robust triple bayonet coupling mechanism along with an internal EMI ground spring to provide excellent shell-to-shell conductivity. Various mounting options are available including in-line and 2-hole flange mount configurations. Bantam meets the RoHS and EWIS requirements for the aerospace cabin environment.

Terrapin

Amphenol Terrapin is a miniature series of circular push-pull connectors. Within a rugged shell design Terrapin offers superior EMC performance and is sealed to IP68. Featuring an optional locking mechanism, multiple shell sizes with up to 37 contacts and suitability for overmoulding, Terrapin is the preferred choice for miniature connectors for harsh environment applications. Delivered as a one-piece assembly the Terrapin connectors are quicker and cheaper to terminate than many alternative products on the market

FILTERED & SEALED CIRCULAR

Mil-Spec Circular Filter Connectors

Amphenol's EMI/EMP Protection Connectors offer the versatility of standard connectors with EMI/EMP protection for sensitive circuits. Internal housing of the EMI/EMP devices eliminates costly and bulky exterior discrete protection devices. Virtually all major MIL-Spec circulars can be incorporated with filter devices.

Hermetic Connectors

In applications where the reliability and performance of electrical connectors are critical, such as gas tight barriers or high-pressure differentials, hermetic connectors are essential to maintain system integrity. Amphenol Martec offers hermetic connectors tailored specifically to your requirements, providing seals able to withstand pressures of up to 60,000psi (4,100Bar), temperatures up to 1,000°C (1832°F) and for use in aggressive and hostile environments. They can be optimized to match existing or specialist mounting requirements, often providing alternative solutions to conventional connectors.

Custom Hermetic Feedthrough

In applications where the reliability and performance of electrical feedthroughs are critical, such as gas tight barriers or high-pressure differentials, hermetic feedthroughs are essential to maintain system integrity. Amphenol Martec offers hermetic feedthroughs tailored specifically to your requirements, providing seals able to withstand pressures up to 60,000psi (4,100Bar), temperatures from cryogenic up to 1,000°C and for use in aggressive and hostile environments. Such seals can be manufactured using a range of materials such as Stainless Steel, Titanium, or Inconel.

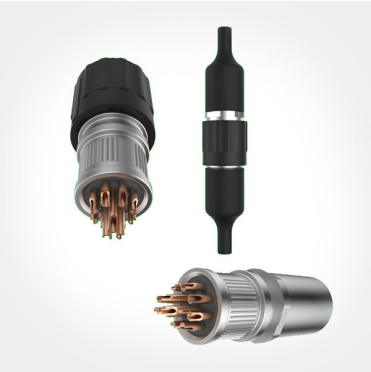
Hermetic/Epoxy Sealed D38999

Amphenol is offering superior electrical performance plus the rugged design of a glass sealed hermetic connector. Glass sealed hermetic connectors are available in a wide variety of Mil-Spec and custom configurations. Amphenol epoxy sealed connectors are a lightweight alternative to glass sealed hermetic connectors for use in avionics and other weight-sensitive applications where a high level of sealing is required. Epoxy sealed connectors are an optimal solution when increasingly stringent sealing requirements must be met in radio and vetronics applications.

OTHER CIRCULAR

Pegasus Series

The Pegasus Series is one of Amphenol's innovations in small, lightweight, rugged connectors. Designed for use in harsh environments, Pegasus builds on the successful Luminus Aerospace connector with the addition of EMI shielding. EMI shielding is provided by electroless copper and nickel plate, with a copper alloy spring finger gasket to ensure shell-to-shell conductivity. This combination of lightweight, small size, and EMI shielding makes Pegasus the ideal choice where protection against ambient noise transients, or suppression of emitted noise is required, and space and weight are at a premium.



Nano-Pegasus

Nano-Pegasus is a small, metal plated, plastic, easy to use connector designed specifically for sensing, command and control applications where a Micro (M83513 or Nano D-sub (M32139) would be used. Nano-Pegasus provides exceptional performance in tight spaces, packing eleven high grade contacts in a shell size 5 housing (0.325" outer diameter). High shock & vibration (300G), a wide operating temperature range (-65C to +175C), and IP67 sealing improve upon Micro & Nano-D performance, guaranteeing worry free operation under severe operating conditions.

Pegasus High Speed

PEGASUS HS brings an easy to use, light weight, low cost connection solution to applications that have typically relied on heavier, more complicated, and therefore more expensive, metal shell connectors. Supporting the AS39029/90, /91, /113, /114 Twinax and ARINC600, ARINC404, AS39029/119, /120 Quadrax rear release, rear removable, size 8 style contacts, PEGASUS HS provides exceptional performance in tight spaces, with a svelte shell size 8 (0.512") outer diameter.

Dualok

Dualok is an enhanced anti-decoupling mechanism that can be used on virtually any cylindrical plug connector and backshell. The Dualok Interconnect System greatly improves electrical performance in harsh environments while providing a size and weight savings when compared to standard connectors in the same class. Dualok technology is applied to the plug connector and backshell only and will mate with standard receptacles.

RECTANGULAR CONNECTORS

LRM Connectors

Amphenol's LRM Surface Mount Connectors meet the high density needs of today's integrated electronic modules. Amphenol goes beyond the usual board level product offering. That's what you expect from a worldwide interconnect product leader. With its flexibility in design, Amphenol LRM interconnects are capable of meeting the wide variety of user requirements for a board mount connector.

HDB3/HSB3 Connectors

This connector series incorporates a higher density contact pattern and lower mated height than Amphenol's standard low mating force rectangular connectors. HDB3 connectors utilize the same durable and reliable B3 brush contact in a tighter .070" X .060" staggered grid pattern.

ASR Connectors

The ASR Connector is a compact and easy-to-use interconnect where shielding, sealing, and space / weight-saving are prime requirements. ASR Connectors use MIL-C-39029 contacts, feature a snap-locking mechanism, and are available in both male and female versions, as well as with PCB or crimp contacts. Fully Reach / RoHS compliant and conform to ABD0031 and FAR 25853 (Fire, Smoke and Toxicity), the ASR Series is perfectly suited for in-seat systems, as well as cabin service systems and in-flight entertainment systems.

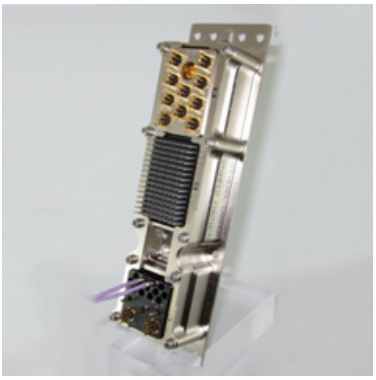
EN4165 / SIM Connectors

Designed and qualified to EN4165 European military aerospace standards, Amphenol's SIM Connector is a modular, multi-functional rectangular connector geared at the US Com-Air and Military markets. While similar to MIL-DTL-38999 in performance, the SIM Connector provides additional benefits with its small footprint and versatility. The SIM Connector is comprised of shells and modules, which together create an integrated solution for advanced signal and power requirements – all at a fraction of the space typically required for the same results.

RECTANGULAR CONNECTORS

SIM Mono-Module Connectors

The SIM Mono-Module Connectors (ARINC 809) is a single module, push-pull connector that is ideal for inflight entertainment systems, cabin service systems, and other interconnect system requirements.



Next Gen ARINC 600

Amphenol Canada's NextGen ARINC 600 addresses the Aircraft industries issues of weight and cost. By incorporating Stamped and Formed overmoulded wafer technology and selective plating the result is a significantly reduced cost and weight product that is qualified to meet all the requirements of ARINC 600.

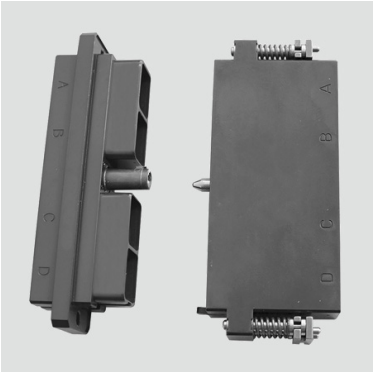
MMA Series

Amphenol Canada's MMA series connector offers customers an extremely versatile connector, offering the best features from other product lines including Arinc 600's power, RF, Fiber Optic and Quadrax contacts, low mating forces and shrouded size 22 pins. Sealing capabilites are comparable to MIL-DTL-83527 with a shell seal, face seal and grommet. Choose our 360° EMI spring option if shielding effectiveness is a concern.

HDAS

Rectangular PCB connector with screw-machined contacts and Star-clips sockets. Very cost-effective per design. Numerous custom-design geometries. Available in Thru-hole and press-fit termina- tions, from 50 to 303 contacts. Exceed the Mil-DTL-55302F requirements.

RECTANGULAR CONNECTORS



EN4165 / SIM Rack and Panel

EN4165 / SIM is a modular, multi-functional metallic rectangular connector. It consists of shells and modules, which together create an integrated solution, supporting advanced signal and power requirements at a fraction of the space. Its flexibility and simplicity during design and operation, makes SIM a competitive alternative for a wide range of rack and panel applications.

Simplus

SIMPlus is a modular, multifunctional rectangular connector. It consists of shells and modules, which together create an integrated solution, supporting advanced signal and power requirements at a fraction of the space. Its flexibility and simplicity during design and operation, makes SIMPlus a competitive alternative for a wide range of applications.

BOARD LEVEL CONNECTORS

R-VPX Ruggedized VITA 46

Amphenol's R-VPX is a ruggedized, high-speed, board-to-board interconnect system capable of data rates in excess of 10 Gbps, meeting and exceeding VITA 46 standards. This connector system gives users modularity and flexibility by utilizing PCB wafer construction with customized wafer-loading patterns.

BOARD LEVEL CONNECTORS

R-SATA Connectors

The Rugged R-SATA style connector is perfectly suited as the primary internal storage interconnect for desktop and mobile PCs, connecting the system to peripherals such as hard drives, solid state drives, optical drives, and removable magnetic media drives. The R-SATA supports SATA 3.0 protocol, delivering 6.25 Gb/s data rates & beyond. Amphenol's R-SATA connector utilizes a Micro-Hyperboloid contact with proven performance. The Micro-Hyperboloid contact system offers low insertion and extraction forces, high durability counts and is resistant to shock, vibration and fretting corrosion.

RACK AND PANEL CONNECTORS

Rectangular 38999 (R39)

The R39 provides high performance in the severe environment demands of military specifications. Its lower profile translates into a smaller space-saving footprint and the new rectangular orientation provides additional installation options. It's also available in a high density, 127-pin contact version providing a wider range of engineering applications. It delivers the same reliable, familiar benefits found in our 38999 connector: effortless installation; blind push pull mating; extreme durability; quick mate and; "scoop-proof" recessed pin design.

Brush Rack and Panel

This connector series utilizes Amphenol's durable and reliable B3 contact system in a rugged, non-floating Rack and Panel connector. Included in this series are digital and power/digital "hybrid" insert arrangements. The hybrid series utilizes Amphenol's high performance RADSOK® power contacts along with Amphenol's proven B3 contact.

RACK AND PANEL CONNECTORS

RNJ / RNJLP

- Rack & Panel solutions for harsh environment
- Very light weight vs. ARINC 404 or 600
- Derived from HE308/38999 series I (RNJ) and series III (RNJLP)
- Realignment capability on 3 axis
- 38999 level sealing with the specific membrane mounting

D-SUB CONNECTORS

Micro-D Connectors

Amphenol Micro-D provide small interconnect solutions, which will exceed the requirements of the US military standard M83513. What differentiates Amphenol from the competition is our overall connector design. Custom solutions can easily be engineered to ensure exact performance in any application. Amphenol is not limited to the traditional M83513 rectangular connectors but has also developed and produced circular connectors, strip line connectors, PC board connectors, and hybrid connectors utilizing power, signal, coaxial and fiber optics contacts.

M24308 D-Sub Connectors

Qualified to MIL-DTL-24308, Amphenol's D-Sub Connectors are subminiature rack & panel type connectors with polarized shells. They use pin & socket machined contacts that provide high reliability & density for the connectors. With its versatile designs including non-magnetic and low outgass, these high-performance connectors are used in a variety of applications including space where weight & dimensions are critical factors.

FILTERED AND SEALED RECTANGULAR

485 - Filtered ARINC Connectors

The Amphenol 485 Series is a range of filtered ARINC 404 and 600 rack and panel connectors designed to provide space and cost-effective solutions to EMC compliance issues in avionics products.

FD308 - Filtered D-Sub Connectors, Ruggedized

Amphenol's FD308 connectors are available in the full range of standard and high-density arrangements, either pin or socket. These connectors are supplied with fixed screw machine contacts and are available in Solder Cup, Straight or Right Angle PCB terminations.

HIGH SPEED CONNECTORS

D38999 Connectors with High-Speed Contacts

Amphenol provides circular connectors with PC Tail contacts for solder mounting on printed circuit boards. They are available in MIL-DTL-38999 Series I, II, and III, MIL-DTL-26482, and MIL-DTL-5015 Connectors. These connectors incorporate PCB contacts in sizes 16, 20, and 22D.

HIGH SPEED CONNECTORS

µCom 10Gb+ Series

µCom-10Gb+ Series (pronounced, Microcom) focuses on miniaturization and high speed. µCom-10Gb+ design of 4 twisted data pairs insulated throughout the entire connector results in a performance that exceeds IEEE 802.3an-2006 specifications for 10GBASE-T Ethernet & TIA/EIA-568-C.2 Cat6A standards. In conformance with MIL-DTL-810F environmental requirements, µCom-10Gb+ 15 mm shell size and 2000 mating cycle coupling provide users with one of the most rugged and micro-sized interconnect solutions on the market. µCom now available in size 11 38999 Series III shells.

MRC Connectors

This series is capable of running Gigabit Ethernet, USB 2.0/USB 3.0, HDMI and 10 Gigabit Ethernet when specified and designated to a specific configuration. MRC is a micro-miniature connector ideal for Commercial, Industrial and Military Communication Systems. The MRC flange mounting plugs are supplied with rigid contacts that are flat to the front surface of the connector. The MRC can be easily cleaned by simply wiping off debris whereas standard pin and socket style connectors tend to be more difficult to remove debris once it has been compacted in the contacts.

HIGH SPEED COPPER CONTACTS

Octonet Contacts

Superior Ethernet contact system for MIL-DTL-38999, Series III. Eight strategically spaced inner contacts form four 100 Ohm matched impedance differential pairs. Easy drop-in replacement to installed connectors; no need to redesign. Self-removing contact feature - no extra contact extraction tool needed (24 Gauge only). Octonet Contacts are ideal for Ethernet or AFDX networks with a reduced envelope. This contact range fits within standard size 8 cavity of MIL-DTL-D38999/EN3645, SIM/EN4165, ARINC.

HIGH SPEED COPPER CONTACTS

OCS Oval Contact System

The OCS (Oval Contact System) is the newest D38999 interconnect product offering from Amphenol High Speed Solutions, it provides many advantages for high speed data transmission.

Split-Pair Quadrax Contacts

Amphenol offers the high performance interconnect solution for CAT6A type cable. For use with: 10/100/1000/10G Base-T Ethernet; DVI; USB 2.0/3.0; PCI-Express 2.0; HDMI 1.3a; SATA 2.0.

Quadrax Contacts

High Speed Quadrax Contacts consist of an outer contact with four inner contacts spaced to form two 100 or 150 Ohm controlled impedance differential pair. Both contacts, when used in Amphenol MIL-DTL-38999 Series III and ARINC type connectors, provide an excellent option for harsh environment applications such as: Ethernet 100 Base-T-100 Ohm, Gigabit Ethernet 1000 Base-T-100 Ohm, Fibre Channel-150 Ohm, IEEE 1394B FireWire-110 Ohm. Used in MIL-DTL-38999/ EN3645, SIM/EN4165 and ARINC600 connectors.

Differential Twinax Contacts

Offers several advantages for high data transfer rates, low power consumption and excellent EMI compatibility. Amphenol Twinax contacts terminate to a variety of cables and are also available with PCB tails.

RF/MICROWAVE CONNECTORS & ACCESSORIES

Mil-Spec RF Connectors, Adapters and Components

SV has the most extensive RF connector MIL-SPEC offering. We have a long history of supporting DLA and promoting the standardization of RF connectors and components.

Secure Locking SMP/SMPM Series Cable Assemblies with Quarterback

SV Microwave's QuarterBack® connector line utilizes a quarter turn bayonet style coupling nut with a locking feature for standard SMP/SMPM interfaces. These connectors are ideal for high vibration and test applications that require a large number of mating cycles.

VITA 67

The floating SMPM coaxial contacts ensure excellent RF performance in any mating condition. These parts are also designed for side-by-side implementation with VITA 46 hardware and can be cabled to Ø.086 and smaller coaxial cable types. Rear panel interface enables quick disconnect & replacement of card, leading to a significant reduction in Mean-Time-To-Repair (MTTR when compared to front panel interfaces. Go to SV's Product Search finder on their website to find connectors readily available in distribution.

Advantage™ No Braid Trim Connectors

No-Braid-Trim-X series of connectors feature a termination process that does not require trimming of the braid shield thereby facilitating the cable termination procedure and reducing the time required to terminate the cable. Cable can be stripped using CST-type LMR® cable stripping tool. Combination hex/knurl coupling nut allows tightening by hand or with a wrench. Chamfered cable entry hole for ease of termination.

RF/MICROWAVE CONNECTORS & ACCESSORIES

IPB™ Weather Seal Boot Systems

The IPB™ weatherproof boot system works with the most popular RF coaxial cables and connecotor combinations. The soft silicone boot weatherproofing boots replaces difficult to use butyl and mastic tape weatherproofing methods. Compatible with the most popular cable and connector combinations as well as female bulkhead connector connections. Fully IP68 rated.

SilverLine® LPA Low PIM Adapters

SilverLine®-LPA low PIM adapters exhibit exceptional PIM performance in any cellular or wireless frequency range. Times Microwave uses the most robust designs for long product life regardless of the environment. All product is 100% tested and individually packaged prior to shipping.

SilverLine® XF (Extra Flex)

SilverLine®-XF was designed for testing delicate components such as exposed RF circuits with edge launch connectors. Thin, lightweight and flexible this coax makes handling PC boards easy yet does not compromise RF stability and isolation. Using Times' proprietary TF-4 dielectric SilverLine®-XF goes one step further, exhibiting linear phase change from 0°C to +30°C.

Wedge TNC

SV Microwave manufactures high performance Wedge TNC connectors that incorporate a unique tapered dielectric design. This distinctive design allows the mating connectors' dielectrics to physically overlap which effectively minimizes air gaps and generates a longer voltage path for improved voltage breakdown. The Wedge TNC allows for outstanding passive intermodulation (PIM) performance due to the tapered dielectric design feature and the tri-alloy plated brass connector body.

RF/MICROWAVE CONNECTORS & ACCESSORIES

M3933/30 Attenuators

SV Microwave is the ONLY DLA approved source for these 2.92mm attenuators (DC through 32 GHz). SV's line has the precision, quality and performance unmatched in the marketplace. Our dB values range from 0.5 to 30 dB with low VSWR and flat attenuation. Available in screened and non-screened versions.

Coaxial PCB Connectors

SV's complete line of coaxial PCB connectors meet the industry need for high-performing, easy-to-use compact designs. Current configurations include single-port and multiport 2.92mm, 2.4mm, SMA, SMP, SMPM and SMPS edge launch, board mount and thru-hole connectors. SV Microwave's SMPx PCB connector designs are ideal for high density applications, while allowing for axial and radial misalignment to compensate for tolerance stack up. Get custom PCB footprint designs to optimize connector to PCB transitions. New pre-tinned versions also available.

FIBER OPTIC CONNECTORS

ARINC 801

Amphenol FSI offers fiber optic high performance termini and connector systems within a wide range of cylindrical and rectangular interconnect packaging. Amphenol offers ARINC 801 compliant termini for use in both cylindrical and rectangular connectors in commercial and military applications.

FIBER OPTIC CONNECTORS

MT38999 Multi-Channel Connectors

Amphenol offers a multi-channel circular connector with high density MT fiber optics. High fiber density in a relatively small circular connector package with all the advantages of the MIL-DTL-38999, Series III connector.

LC Field D38999-Type Connectors

The patented RJStop® system allows use of a standard LC or LX5 patchcord in a metallic plug, which will protect it from shock, dust and fluids. There is no need for field termination. This metallic plug is connected into a receptacle, using a Tri-Start Thread coupling mechanism (MIL-DTL-38999 Series III type) with anti-decoupling device for high vibrations.

Fiber-to-Antenna (FTTA) Connector Solutions

Borne from the foundation of D38999 mil-spec harsh environment connectors, the FTTA interconnect solution combines standard fiber optic LC components and copper contacts in a rugged, affordable package. The FTTA series is highly configurable to support a wide range of industrial applications where fiber and copper connectivity are required in a single connector for rapid deployment and easy maintainability.

Board Level/Rectangular Fiber Optics

Amphenol is uniquely qualified to design and manufacture a wide range of rectangular connector products containing MIL-PRF-29504, HD20, MT Ferrule Fiber Optic Termini and ARINC 801 Termini.

FIBER OPTIC CONNECTORS

MFM Simplex

The Simplex MFM Fibre Optic range has been specifically designed to operate in Harsh Environments. The rugged, anti-vibration, corrosion resistant design ensures high environmental and optical performance in a variety of applications in the air, on land, and above / below sea.

TACBeam®

Expanded beam technology expands and collimates the optical signal through the connector interface path resulting in a diameter many times that of the original beam. The optical beam is then refocused into the core of the receiving fiber. The larger beam diameter improves insertion loss performance in the presence of dust and debris. Also, because the lenses do not physically contact, there is no wear on the termini, which allows the connector to be mated and de-mated thousands of times without affecting optical performance.

Space ST Connectors

Amphenol FSI offers a fiber optic MIL-STD-83522 style connector and strain relief boot compliant to NASAEEE-INST-002 material guidelines for space applications. FSI's Space ST connectors were tested to ASTME595 to evaluate the boot's out-gassing properties. The Space ST is a M83522 style variant, which features a higher spring force than commercial ST connectors, allowing it to meet the shock and vibration requirements of MIL-C-83522. Stainless steel construction provides excellent mechanical strength and superior corrosion resistance. A companion adapter is available to support bulk head applications.

FIBER OPTIC TERMINI

ARINC 801 Termini

ARINC 801 termini are designed for use in Amphenol ARINC 801 fiber optic connectors-manufactured to comply with ARINC 801. Termini are available with both PC and APC end-face finishes.

M28876 MPC Termini

The Amphenol Fiber Systems International (AFSI) design of the M29A1350 and M29B1350 APC termini are based on qualified M29504 /14 and /15 termini. These termini are designed exclusively for use in the APC28876 low back reflection, multi-channel count connector series. The connectors and termini, based on the military qualified M28876 connector, are designed for use in harsh environment applications.

MT Ferrule Termini

Designed for use in Amphenol MT38999 circular connectors and also for rectangular products: printed circuit board interconnects, LRM, VME64 and VITA46 interconnects.

Lux-Beam

Lux Beam is a single expanded beam termini compatible with multi-source connectors (38999, EN4165, EN3645). Featuring ball lens technology with an expanded beam superior to 50X in multimode, this solution is ideal for head-up display, tactical communication, avionics communication, equipment with hybrid connection in harsh environments.

JUNCTION MODULES/RELAY SOCKETS/TERMINAL BLOCKS

M81714/1750 Style Electronic Splices & Modules

Single and Dual Electronic splices and Electronic Junction Modules are designed to provide a quick and efficient solution to application design wiring requirements. Single and Dual Wire Splices conform to M81714/21, /23 and /24. TJSE Electronic Modules conform to M81714/26. SJE Electronic Modules conform to M81714/62. All can be supplied with a wide variety of diodes, resistors, capacitors, and fuses. Amphenol's electronic solutions allow customers to incorporate system modifications into a wire bundle, avoiding changes in panels or boards.

BACKSHELLS AND SYSTEM ATTACHMENTS

AlumaLight

Ideal for Commercial Aerospace applications, AlumaLight is the latest innovation in Amphenol's Backshell product family. With its unmatched combination of weight, performance, and price, AlumaLight exceeds the performance and functionality of Mil-standards and is more durable than composites with enhanced EMI performance. AlumaLight also comes in three different product families - Environmental, Strain Relief/EMI RFI, and Band Lock/EMI RFI.

Miniature Backshells

Amphenol Pcd's Miniature Backshell product line support both backshells and caps for Amphenol's 2M circular connector line. These high performance metal backshells have strain relief, EMI, and environmental capabilities.

BACKSHELLS AND SYSTEM ATTACHMENTS

Composite Backshells

Designed to support weight saving initiatives, as well as severe corrosion environments, Amphenol Pcd's Composite Backshells are Mil-approved to AS85049/91, /92, /93. They are suitable for lightweight applications, such as in commercial aerospace. These products complement Amphenol Pcd's field-proven, QP Backshell line.

Pre-Shield Adapters

Amphenol Pcd's Pre-Shield Adapter has a longer length of braid attached to it. This braid overlaps with the cable braid and effective shielding takes place due to its 360° contact. It is designed to accept a heat shrink boot, is easy to use and saves time during cable termination.

Strain Relief Clamps

Amphenol Pcd's Strain Relief Clamps not only tidy-up the cable after termination, but also provide good strain relief at the termination area. It is a cost-effective cable holding option when environmental protection is not a concern, and weight saving is a major consideration.

AirLB Standoffs & Brackets

Designed to help guide wire bundles through aircraft and vehicles, Amphenol Air LB's Standoffs were designed with strength, stability, and weight reduction in mind. These standoffs are made with black thermoplastic and conform to ABD031 flammability standard. There are two types of these standoffs - Type I has an operating temperature range of -67° to 266° and uses a screw mount; whereas Type II has an operating temperature range of -67° to 185° and uses a tie-down mount.

BACKSHELLS AND SYSTEM ATTACHMENTS

P-Clamps

Engineered for lean manufacturing, the high performance P-Clamps were developed to replace and outperform traditional P-Clamps and Saddle Clamps. Featuring an overmold silicone cushion with PEEK polymer, our clamps are completely non-conductive/non-corrosive, lightweight, and very durable.

CABLING AND CABLE HARNESSES

Over-Braided Cable Assemblies

Amphenol produces over-braided cable assemblies for the Military and Commercial Aerospace markets. Braiding material, which improves overall EMI performance, includes Stainless Steel, Tinned Copper, and Aluminum. Braiding materials such as Nylon and Nomex are used for cable jacketing and vary based on operating temperature.

High Speed Copper Cables

Amphenol provides a large array of cable assemblies with high-speed quadrax and differential twinax contacts, as well as coax and concentric twinax contacts. Amphenol offers customers the most up-to-date range of cable assemblies in the market. Amphenol can design and supply your cable needs for high speed contacts and connector, from a simple point-to-point cable to a multi-branch cable system.

CABLING AND CABLE HARNESSES

Fiber Optic Cable Assemblies

Amphenol's cable assembly expertise dates back to the first industry standard fiber optic connector, over 25 years ago. Our depth of understanding of connector and termini design, and the complete control of connector materials, make Amphenol Fiber Optic cable assemblies one of the best in the industry. Amphenol offers a comprehensive line of single-mode and multi-mode cable assemblies in a variety of cable configurations. From simplex jumpers to multi-fiber custom assemblies, Amphenol can design and supply all of your cable needs.

Multi-Channel Fiber Optic Cable Assemblies

Amphenol FSI builds custom cable assemblies for virtually any applications. Our stringent quality system, certified to MIL-STD-790, ensures the highest levels of workmanship and performance available today in each and every cable assembly built. There are virtually no connector standards that AFSI does not support. In addition to 100% optical performance testing, AFSI also provides value-added services such as thermal cycling, high-temperature aging, and other post-build environmental testing.

Ruggedized Ethernet and USB Cables

Amphenol offers high reliability Cat5e cable and RJF / USB cable assemblies designed both for harsh or industrial environments. Our exterior cable designs consists of a UV resistant, polyurethane, halogen free flame retardant (HFFR) jacket. Conductors are doubled shielded with a braid and foil (SFTP). Cat5e cables are designed to ISO/IEC11801 requirements. Our extensive offering of Ethernet, USB, FireWire, and ESATA connectors can be sold as cordsets with molded plugs and / or transversal receptacle sealing.

High Speed RF Cable Assemblies

SV Microwave offers a complete line of high frequency cable assemblies utilizing 2.92mm (SVK)/2.4mm and SMP/SMPM/SMPS connectors on Ø.047 and Ø.085 cable. SV's cable assemblies feature low solder wicking and our high flexibility allows for tight bends behind the cable ferrule. Our low loss is your gain.

CABLING AND CABLE HARNESSES

Bus Bars

Amphenol Air LB's bus bars provide a means of power distribution between power generator boxes, terminal blocks, and smaller terminal block interconnects. Bus bars are available in various standard sizes and shapes as well in custom designs. Bus bars present high mechanical resistance and are resistant to high temperatures.

High Power Space Qualified Cable Assemblies

SV Microwave has over 50 years experience in assembly, inspection, testing and qualification of space products. SV's space qualified cable assemblies offer high power / low PIM options. Additionally, our in-house Real Time X-Ray Machine allows for solder coverage verification throughout the assembly process. SV's wedge dielectric interfaces are also available to prevent multipaction. SV's trainers are J-STD-001 and IPC WHMA-A-620 Certified.

Space Flight Microwave Cable Products

Times Microwave Systems offers a complete product line of space qualified cable assemblies. The SPFLT series cable offers low loss, high power handling capability for the most demanding space flight environments. The Phase Track® series is the most phase stable product versus temperature change in a flexible cable. Our SiO2 series cable is designed for the most extreme temperature requirements. All of these cable types have high performance, impedance matched RF connectors available and use only the highest quality, low outgassing materials. These connectors are designed for high power and meet, or exceed requirements for multipactor and corona breakdown.

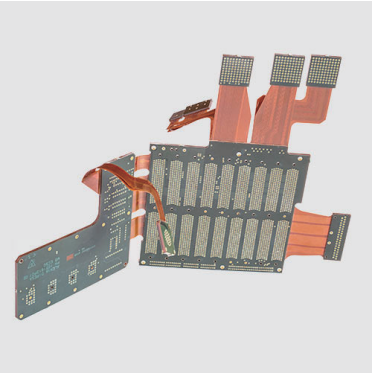
Clean Room Space

Amphenol has the capability of designing and manufacturing 2D and 3D cable harnesses with 5 cleanroom locations throughout the world.

PRINTED CIRCUIT BOARD / FLEX / RIGID FLEX

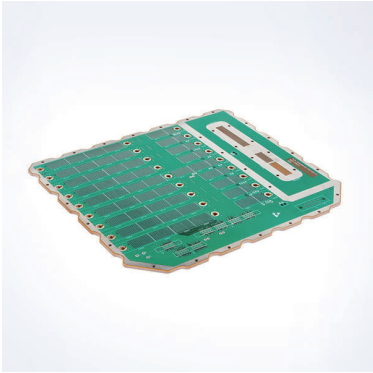
Type 2 Double-Sided Flex

Double-Sided, or Type 2 Flex, is a flex circuit based on two conductive layers of copper that are interconnected through Plated-Through-Holes (PTH's) or Vias creating electrically active circuitry on both conductive layers.



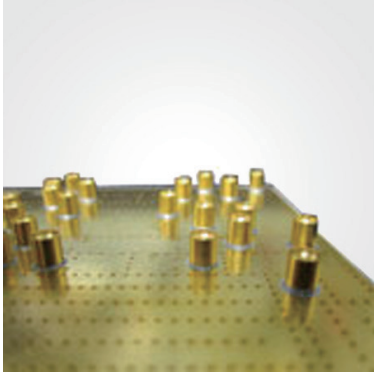
Type 4 Rigid Flex Book Binder

A circuits consisting of more than two copper conductor layers that are interconnected through Plated-Through-Holes (PTH's) or Via's creating electrically active circuitry on all conductor layers. The flexible layers are integral to the "rigidized" layers and both the PTH's or Vias are plated through the rigid and flex areas; the flex-layers are built with a controlled progression to enhance flexibility.



PCB Backplane

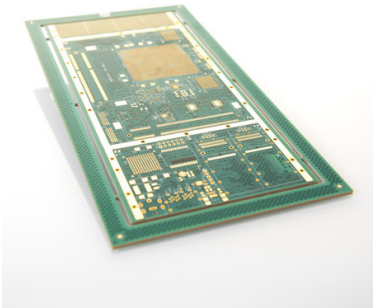
A Printed Circuit Board consisting of multiple layers that is used as a conduit to transfer data, information and power to components within an electronics chassis/sever that supports "box-build" applications, including high speed applications.



RF Printed Circuit Boards

A Printed Circuit Board consisting of one or more conductive layers used in High-Frequency Antenna and Radar marketplaces.

PRINTED CIRCUIT BOARD / FLEX / RIGID FLEX



Rigid PCBs

Categorized by single stage bond, from conventional & PTH through to multilayer including sequentially bonded, HDI & mixed materials. ESA approved.

Flex & Flex-Rigid

Flex-rigid circuit technology provides a method to integrate multiple PCB assemblies, eliminate wires, cables or connectors, replacing them with flexible substrate between rigid sections. Flexible circuits allow the board to conform to a desired shape (flex) during its application. Our products can be ound in a range of ultra-high reliability markets including aerospace, space and defense. We have developed extensive manufacturing experience, product knowledge and technical expertise through close collaboration with many leading OEMs. ESA approved.

MEDIA CONVERTERS & ETHERNET SWITCHES

Analog-to-Digital Media Converters

Amphenol Aerospace's High Speed Solutions offers a fully integrated standalone Analog-to-Digital Converter package. Our integrated Analog-to-Digital Converters support input through High Frequency 50Ω MMCX RF type interconnects in a rugged MIL-DTL-38999 ultra-small form factor package. The analog inputs are single-ended and coupled to the latest in TI's family of open architecture high speed ADC devices using a balun and AC coupling capacitor configuration to produce the broadband differential input required by the devices.

Copper-To-Fiber Digital Media Converters

Amphenol Aerospace High Speed Solutions offers copper-to-fiber and fiberto-copper media conversion with our hybrid integrated connectors. The family consists of protocol independent and Ethernet media conversion converters with more products being developed to meet our customers' application needs.

Ethernet Switches

Designed for harsh environments, our Rugged Ethernet Switches give you the assurance of a continuous and secure data transmission between all your communication equipment. Our Miniature Military Ethernet Switches are used on board the International Space Station.

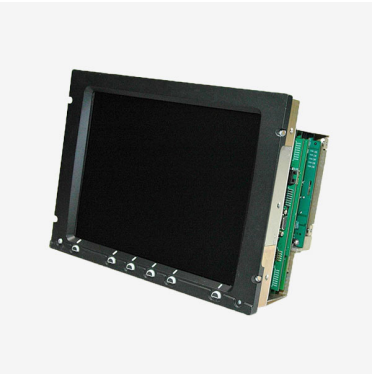
COMPLEX SYSTEMS AND ASSEMBLIES

Electronic Assemblies

At Amphenol Borisch Technologies we understand that high reliability electronics requires state-of-the art equipment, experienced and passionate people, and rigorous process validation. We work closely with our customers during the New Product Introduction (NPI) stage to ensure that products meet or exceeds all requirements and expectations right from the very start of the project.

Electro-Mechanical Integration

At Amphenol Borisch Technologies we understand that building complex assemblies requires a robust quality system, strong engineering support and world class operators. Amphenol will provide you with a dedicated Program Manager that has the resources and expertise to ensure you will receive excellent service.



Ruggedized Displays

Amphenol Borisch Technologies has developed, qualified and delivered rugged display products per specific requirements in a variety of high reliability, harsh environment applications. We offer customized rugged display solutions engineered to the unique set of requirements each application presents. Our Display Department specializes in the ruggedization of AMLCD and touch screen assemblies, utilizing index-matched optical bonding, for harsh environment applications.

Panel Assemblies

Panel assemblies for avionics, engine controls, and other systems are designed and manufactured in-house. Amphenol Griffith Enterprises can either build per specification or custom design for any application based on our engineering capabilities and certifications.

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