

Avionics Solutions

for Commercial Aerospace

More Bandwidth, More Space and
Weight Savings . . . From Components to
Integrated Solutions

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Performance on Board: End-to-End Connectivity

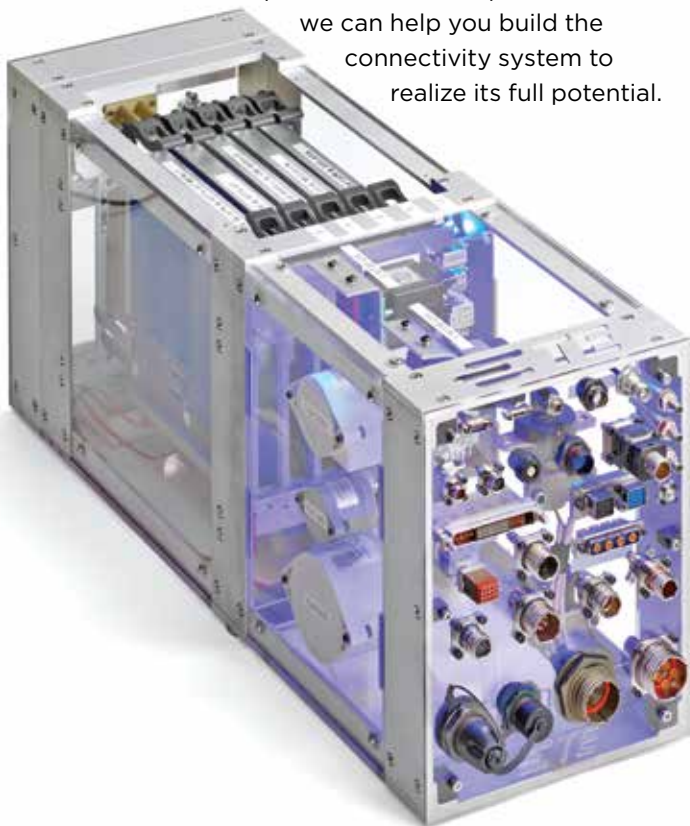
Whether you are looking for better packaging solutions inside the box, sturdy and lightweight enclosures, or high-performance I/O to connect your systems, count on TE Connectivity (TE) for a comprehensive range of solutions.

Today's sophisticated networked aircraft require avionics with the bandwidth to ensure monitoring and control of all flight systems—while offering the size and weight reductions needed to increase efficiency. We can help you keep pace with the higher densities and increased capabilities of electronic systems.

With integrated modular avionics and compact MiniMRP packaging offering new levels of networked sophistication and capabilities, we can help you build the connectivity system to realize its full potential.

At TE, we can help you design and build avionics systems with connectivity solutions that:

- Save weight with advanced materials
- Reduce space requirements with smaller, space-efficient components
- Increase bandwidth with high-speed connectivity
- Decrease complexity with integrated solutions
- Enhance signal integrity with EMI and filter products
- Achieve robust, reliable systems



TE Components . . . TE Technology . . . TE Know-how . . .

AMP | AGASTAT | CII | HARTMAN | KILOVAC | MICRODOT | NANONICS | POLAMCO | Raychem
SEACON | Rochester | DEUTSCH

Empower Engineers to Solve Problems, Moving the World Forward.



BACKPLANE AND BOARD-TO-BOARD CONNECTORS



Z-PACK 2 mm HM Connectors
Modular High-Speed Performance

- Modular units in 4, 5, 8, and 12-row configurations
- Open-pin-field connector supporting 2.5 Gb/s data rates

Industry-Standard Configurations

- Versions for VME64 Extensions and CompactPCI
- IEC 917-2-2 and IEC 61076-4-101



Fortis Zd Connectors
High Speed

- 12+ Gb/s data rates

Rugged

- Extreme mechanical and electrical performance

Versatile Application

- Modular, with plastic, shielded, and machined metal shells



Mezalok Mezzanine Connectors (VITA 61)
Compatible

- 114-position, compatible with XMC footprint
- 60-position, half-size versions

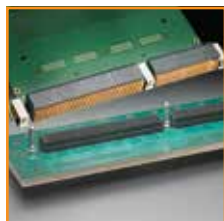
Reliable

- Mini-box contacts provide 4 points of contact
- LCP plastic housings for excellent thermal stability



1 mm Free Height Connectors
Space Saving

- High-density packaging on 1.0 mm centerline spacing
- Board stacking heights available from 8 to 15 mm
- Used in IEEE 1386 PMC applications



MULTIGIG RT Connectors
High Speed

- Data transfer rates up to 25+ Gb/s

High-Density Modular Design

- Modular design with backward interoperability

Ultra-Rugged

- Ruggedized multipoint contact system meets VITA vibration standards



Z-PACK HM-Zd Connectors
High Speed

- Designed for differential signals at rates up to 12 Gb/s
- 25.00 mm standard module
- 2, 3, or 4 contact pairs per column

Solderless Application

- Vertical and right-angle press-fit pin headers and receptacles



VITA 66 Optical Modules

- Allows LRUs and LRMs to be disconnected at the backplane
- Optical modules support MT, ARINC 801 and expanded beam contacts

HIGH-SPEED CABLE



Fiber-Optic Cable
Complete Selection

- Single mode and multimode
- Tight-buffered and loose-tube constructions
- Low-smoke, zero-halogen versions to support increased safety



High-Speed Copper Cable
Rugged Choices

- Material choices to match application requirements
- Shielded and unshielded
- Low-smoke, zero-halogen versions to support increased safety

High-Speed Protocols

- Configurations to support various Ethernet, Quadrx, IEEE 1394, USB, Fibre Channel, etc.



RACK-AND-PANEL CONNECTORS



- ARINC 600 Connectors**
Versatile I/O for LRUs and LRMs
- Signal, Quadrx, RF, power, and optical (ARINC 801 and mini expanded beam)
 - Blindmate
 - Rugged, high pin count



- Next-Generation ARINC Connectors**
Lower Cost
- Monoblock insert and stamped-and-formed contacts
 - Applied-cost savings with solderless, press-fit PCB contact
- Lower Weight**
- Up to 10% weight reduction per connector
 - ARINC Qualified
 - Meet ARINC 600 performance requirements



- GPR Connectors**
Compact I/O for LRUs and LRMs
- Use 2 to 3x less space than circular connectors
 - Flexible
 - Signal, Quadrx, RF, optical, power
 - Various blindmate and latching designs

I/O CONNECTORS



- Nanominiature Connectors**
Extreme Weight and Space Savings
- Rectangular, coax, and sealed circular configurations
- Robust**
- Excellent shock and vibration resistance
 - Wide temperature range (-200°C to +200°C)

HIGH-SPEED NETWORKING



- CeeLok FAS-T Connectors**
Compact 10 GbE Performance
- Compact size 8 shell for space and weight savings
 - Rugged
 - Excellent shock, vibration, temperature, and sealing performance
- Convenient**
- Field terminable, with integral backshell for low cost, low-weight strain relief, and EMI protection



- Quadrx Connectors, Contacts, and Cable**
High Density, High Speed
- Up to 10 Gb/s (over Cat 6a cable)
 - 2 differential pairs in a size 8 contact shell
- Compatible**
- Inserts for many popular aerospace connectors



- CeeLok FAS-X Connectors**
High Speed
- Supports 10G Ethernet and beyond
 - One or four 10G Ethernet channels in size 11 or 25 shells
- Compatible**
- AS39029 contacts
 - Fast field termination and repair, using standard tools
 - Available with aluminum or composite shells with a variety of finishes



- DEUTSCH Wildcat 38999 Connectors**
High Density
- Nearly double the density of equivalent 38999 Series III connectors
 - Four housing sizes, 11 to 64 contacts
- Reliability**
- Robust, triple-start threaded coupling
 - Extreme temperature, vibration, and corrosion resistance
 - Accepts standard 38999 backshells and accessories



I/O CONNECTORS



Micro-D Connectors

Space-Saving Performance

- Pre-wired per MIL-DTL-83513 or crimp contacts for customization
- Lightweight aluminum shells plated in nickel or cadmium



DEUTSCH Wildcat Micro Connectors

For Size- and Weight-Critical Applications

- 3, 5, or 9 contacts in two shell sizes
- Lightweight aluminum shells
- Bayonet and threaded coupling

Rugged

- Environmentally sealed with rear-removable contacts
- Cable EMI shield and boot termination
- Small, lightweight reliability



DEUTSCH DMC-M Series Multi-Module EN4165 Connectors

Compact Flexibility

- Interchangeable modules for signal and power
- Wide range of configurations, backshells, and accessories for signal and power
- Standard and shielded versions



DEUTSCH EN4165/ARINC 809 Connectors

Save Weight, Control EMI

- Wide range of modules for signal and power
- Excellent EMI performance
- Robust composite shell saves weight



D-Subminiature Connectors

Versatility for I/O and Production Breaks

- Ultra-light version—up to 20% lighter with improved EMI performance
- Standard and high-density configurations
- Hybrid versions for coax, Quadrx, and optical



DEUTSCH Aerospace-Grade 369 Series Connectors

Low-Cost, Space-Saving Design

- Based on ARINC 809/EN4165
- 3, 6, or 9 positions

Reliable

- Fully sealed cable and mating interface
- Aerospace-grade low-smoke and -toxicity materials

FIBER-OPTIC CONNECTORS



Optical Inserts

Full Range of Connector Solutions

- ARINC, GPR, DMC-M, EN4165, and 38999
- ARINC 801 Circular/Rectangular
- EN4165 Hybrid/Dual MT
- 38999 EB16
- MIL-PRF-29504
- Support for ceramic ferrules, expanded beam termini, and MT ferrules



PRO BEAM Expanded Beam Connectors

Robust

- Physically noncontacting mating of single-mode and multimode fibers

Versatile

- Three sizes: Senior, Junior, and Mini
- Size 16 termini also available



FIBER-OPTIC CONNECTORS



VITA 66.1 Connectors

Rugged

- Robust performance in backplane interconnects
- Locating posts for proper positioning

High Capacity

- One or two MT ferrules to accommodate up to 24 fibers



Optical Termini

Full High-Performance Range

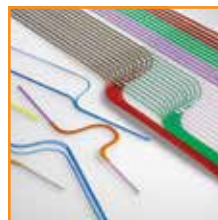
- 1.25- and 2.5-mm precision ceramic ferrules
- MT array ferrules
- Expanded beam
- MIL-PRF-29504



MC5 Series Physical Contact Connectors

Sustained High Performance

- Withstands a wide range of environmental conditions
- Compact 1.25-mm precision zirconia ceramic ferrules
- Extensive range with dimple termination process and tooling



Optical Flex Circuits

Versatile

- Symmetrical and asymmetrical designs
- Very low insertion loss over a broad temperature range
- Range of packaging options for environmental conditions

CUSTOM ASSEMBLIES



ParaByte Fiber Optic Transceivers

Standard Design

- Modules integrate 1 x 12 industry standard MT optical interface

Versatile

- Board mountable SMT with 10x10 BGA
- Pluggable mezzanine connector interface
- Blindmateable to VITA 66 compatible interface



Copper Flex PCB Assemblies

Reliable

- Superior signal integrity across high-speed applications
- Up to 10 Gb/s

Customizable

- Can be customized for any applications
- Double-sided, single-sided or multilayer options

RF AND HIGH-SPEED DIGITAL



RF Connectors, Cable, and Cable Assemblies

More Choice, More Performance

- Standard, subminiature, and microminiature interfaces and frequencies
- Flexible and semi-rigid cable
- Qualified to MIL-PRF-39012, MIL-DTL-83517, MIL-PRF-55339



Digital Cable Assemblies

More Speed, Less Weight

- Support for high-speed protocols
- Compact, lightweight designs
- Fully tested and documented by TE



HARNESSING



Raychem Sealed Harnesses
Lightweight and Tough
 • Small, lightweight, rugged, and environmentally sealed
Customized
 • Designs are customer specific
 • Performance matched to application requirements



Raychem Heat Shrinkable Tubing
Excellent Performance
 • Space-grade versions for low outgassing
 • With or without adhesive lining
 • Wide range of sizes, shrink ratios, and environmental resistance



Raychem Molded Parts
More Choice
 • Wide range of size, shapes and materials
 • Available to fit TE backshell adapters
Protects
 • Provides excellent strain relief at connector cable terminations



POLAMCO Backshells
Full Range
 • Unshielded, shielded, and rugged conduit systems
 • Rectangular and circular configurations
 • Straight, 45, or 90-degree options
Rugged
 • Versions to match most harsh environments



Raychem HexaShield EMI Adapters
High Performance
 • 360° shield termination system for shielded wires and cables
 • Excellent mechanical and environmental resistance
 • Efficient strain relief
Versatile and Flexible
 • Aluminum, stainless steel, and composite versions available
 • Simple installation and easy re-entry



Raychem High-Temperature Terminations
Versatile
 • Crimp and controlled-solder splices and shield terminations
High Temperature
 • Rated to 200°C or 260°C
 • Low temperature versions also available
Environmentally Sealed
 • Heat-shrinkable insulation sleeve for sealing and strain relief

RELAYS AND CONTACTORS



KILOVAC High-Voltage Relays
Capable
 • Voltage isolation to 70 kV
 • Current ratings to 110 amps
 • Service life to 10 million cycles
 • Frequencies to 32 MHz
Versatile
 • Various contact forms available
 • Flange, panel and PC board mounting styles
 • Optional coils, mountings and terminals



CII Low Signal Relays
High Performance
 • Miniature hermetically sealed relays
 • High-frequency models capable of switching up through 6 GHz
 • Excellent isolation, insertion loss, and VSWR
Flexible Packaging
 • Non-latching and latching designs
 • 1/5, 1/2 and full-size crystal can, TO-5 and .100 grid
 • Variety of mounting styles

CUSTOM INTEGRATED SOLUTIONS



Composite Enclosures
Rugged Weight Savings
 • Light weight—up to 50% lighter than aluminum
 • Rugged and corrosion resistant
Customizable
 • Conductive composites and plating options for grounding/EMI shielding
 • Highly customizable with integrated wire traces, antennas, and connectors

LET'S CONNECT

We make it easy to connect with our experts and are ready to provide all the support you need. Just call your local support number or visit www.te.com/industrial to chat with a Product Information Specialist.

Technical Support

te.com/support-center

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Consult TE for the latest dimensions and design specifications.

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