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

Get your product to market faster with a smarter, better solution.
INTEGRATED SOLUTIONS

Composite Enclosures

Ruggad Weight Savings
- Light weight — up to 50% lighter than aluminum
- Extremely rugged and corrosion resistant

Customizable
- Conductive composites and plating options for grounding/EMI shielding
- Highly customizable with integrated wire traces, antennas, and connectors

Antennas

Low-Profile, Form-Fitting Conformal Designs
- Multiband and wideband antennas and arrays
- Rugged embedded antennas in engineered composite enclosures

Cost Effective
- Customized designs with integrated RF and DC traces, cables, and connectors

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 2-R Connectors (VITA 41 VXS/VITA 46 VPX)

High Speed
- Data rates up to 10 Gb/s

High-Density Modular Design
- Up to 56 high-speed lines per cm of board space
- Configurable for differential, single-ended, RF, optical, and power

Ultra-Rugged
- Meets VITA 72

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
**RACK-AND-PANEL CONNECTORS**

**ARINC 404 and 600 Connectors**

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

**GPR Connectors**

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

**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

**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)

**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

**Quadrix 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

**HIGH-SPEED NETWORKING**

**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 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

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 EN4165/ARINC 809 Connectors
Save Weight, Control EMI
• Based on ARINC 809/EN4165
• 3, 6, or 9 positions

DEUTSCH DMC-M Series Connectors
Compact Flexibility
• interchangeable modules for signal and power
• Wide range of configurations, backshells, and accessories for signal and power
• Standard and shielded versions

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, Quadraax, and optical

FIBER-OPTIC CONNECTORS

Optical Inserts
Full Range of Connector Solutions
• ARINC, GPR, DMC-M, EN4165, and 38999
• 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

**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

**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

**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, QuadraX, IEEE 1394, USB, Fibre Channel, etc.
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