



Solutions for Electronic Warfare Systems



Rugged, Reliable Performance for EW

Reduce SWaP

Increase bandwidth

Speed design with open architecture solutions

Electronic warfare systems – like Next Generation Jammer, Integrated Topside, CIRCM and JCREW – demand rugged, cutting-edge technology that keeps pace with the ever more complex and powerful capabilities. TE Connectivity delivers comprehensive solutions.

To be the master of the electromagnetic spectrum, it is crucial to have all of the advantages of copper, fiber optic and wireless technologies at your command.

Our advanced portfolio provides the depth and breadth for complete end-to-end connectivity solutions. We are satisfying the need for faster digital communications with high-speed board-level interconnects and blazingly fast digital cable assemblies. We are developing composite enclosures, efficient power subassemblies, and integrated antenna technologies that save space and weight. We are meeting the demanding needs of battlespaces with ruggedized copper and fiber interconnect and cable assemblies. And we are protecting systems with lightweight shielding and EMI-immune datapaths.

TE is focusing its technology to minimize size, weight and power consumption, to increase bandwidth and to enable open architecture systems. When your system demands the best in technology solutions, we deliver.

Spanning the Range of Electronic Warfare

- Force protection
- Signals intelligence
- Electronics intelligence
- Communications intelligence
- Countermeasures
- Electromagnetic spectrum management
- C4ISR
 - Computing
 - Communications
 - Command
 - Control
 - Intelligence
 - Surveillance
 - Reconnaissance

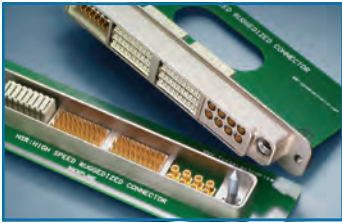
The products featured here are a sampling of the wide range of products we offer for electronic warfare applications. Visit www.te.com/ADM to learn about additional products.



Board-Level Interconnects

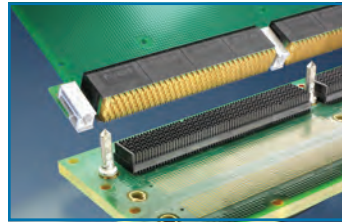
High Speed, High Density, High Reliability

BACKPLANE CONNECTORS



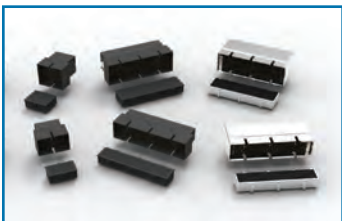
HSR (High-Speed Ruggedized) Connectors

- Common insert/shell geometry enables multiple configurations
- High performance up to 10 Gb/s
- High-power contact: 15 A/contact
- Rugged metal shell with integral guidance hardware
- ESD shielding available



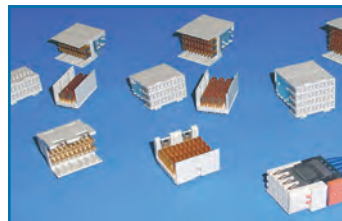
MULTIGIG RT2 Connectors (VITA 41 VXS/VITA 46 VPX)

- Pinless backplane connector supports data rates up to 10 Gb/s
- Up to 56 high-speed lines per cm of board space, in 25.4 mm slot-pitch
- Modular design
- Configurable for differential, single-ended, RF, optical, and power
- Blind mate



Fortis Zd Connectors

- 12+ Gb/s data rates
- Extreme mechanical and electrical performance
- Modular design
- Plastic, shielded, machined metal shells for application versatility
- Protected pin field on backplane for reliability and durability



Z-PACK HM-Zd Connectors (ATCA)

- Designed specifically for high-speed differential applications
- Modular connector system with a standard module size of 25.00 mm
- Vertical and right-angle press fit pin headers
- Right-angle and vertical press-fit receptacles
- 2, 3 or 4 contact pairs per column

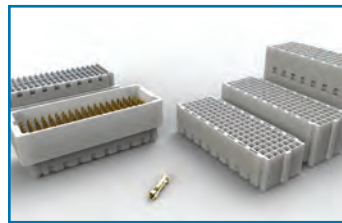
www.thefutureunleashed.com

STACKING CONNECTORS



1 mm Free Height Connectors

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

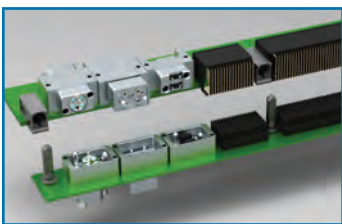


Mezalok Mezzanine Connectors (VITA 61)

- 114-position footprint compatible to XMC footprint
- 60-position half-size versions
- Mini-box contact system provides 4 points of contact
- LCP plastic housings offer superior thermal stability
- Rugged surface-mount mezzanine connector

www.elementaladvantage.com

OPTICAL AND RF CONNECTORS



Fiber-Optic Modules (VITA 66)

- ARINC 801, expanded beam, or MT termini
- MT: extreme density with up to 48 fibers/module
- ARINC 801: excellent single-mode performance
- Expanded beam: noncontacting interface for frequent matings/unmatings



RF Modules (VITA 67)

- 4 or 8 SMPM contacts
- Blind mate
- High channel-to-channel isolation
- Float-mounted jack maintains positive RF ground

POWER CONNECTORS AND HARDWARE



MULTI-BEAM XLE Power Connectors (VITA 62)

- 75 A 6-beam power contact: more than 200 A/linear inch
- 25 A low-power contact occupies 50% less pcb space than previous generation
- Vented housing allows for better heat dissipation
- Hot-plug capable



Guide Hardware

- Extensive line of precision hardware
- Mating alignment
- Keying
- ESD protection

Input/Output Connectors

More Options in Copper and Fiber

HIGH-SPEED CONNECTORS



www.thefutureunleashed.com

CeeLok FAS-T Connectors

- Small, field terminable, 10 Gigabit Ethernet, rugged I/O connector
- Compact Size 8 shell saves weight and space
- Ruggedized for excellent shock, vibration, temperature, and sealing performance
- Integral backshell provides low cost, low-weight strain relief, and EMI protection



Quadrax Connectors, Contacts, and Cable

- Small-form-factor I/O connectors for up to 10 Gb/s over Cat 6A cable
- Quadrax multi-signal contact system with 2 differential pairs in a size 8 contact shell
- Inserts for ARINC 404/600, GPR, 38999, BACC65/EPXB, Sub-D, and custom shells

ULTRAMINIATURE CONNECTORS



Nanominiature Connectors

- Reliable, durable, and lightweight
- Excellent shock and vibration resistance
- Wide temperature range (-200°C to +200°C)
- Rectangular, coax, and sealed circular configurations



Microminiature Connectors

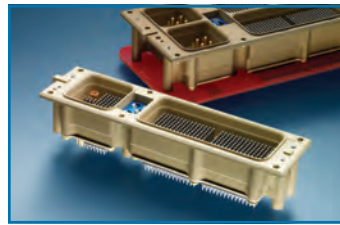
- Reliable, durable, and lightweight
- Excellent shock, vibration, and temperature performance
- Meets MIL-DTL-83513Micro-D, high-density rectangular, and circular configurations

RECTANGULAR CONNECTORS



GPR (General Purpose Rectangular) Connectors

- I/O for LRUs and LRMs
- Production break for stanchion disconnect
- Various blindmate and latching designs
- Signal, Quadrax, RF, optical, power
- Uses 2 to 3x less space than circular connectors



ARINC 404 and 600 Rack and Panel Connectors

- I/O for LRUs and LRMs
- Blindmate
- Rugged, high pin count
- Signal, Quadrax, RF, power, and optical (ARINC 801 and mini expanded beam)
- Press-fit, solder, and crimp contacts

RF AND OPTICAL



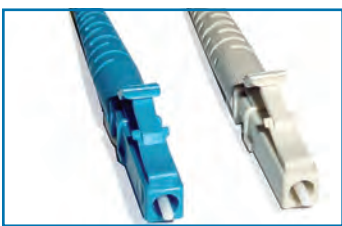
ARINC 801 Fiber-Optic Termini

- Easy to clean
- Industry standard 1.25 mm ceramic ferrule
- Compatible with 1.5 to 2.2 mm tight jacket and loose tube cable construction
- Single mode or multimode
- Excellent performance



PRO BEAM Expanded Beam Connectors

- Field deployable interconnects
- Modular design for use with multimode or single-mode fiber
- Rugged hermaphroditic construction
- Physically non-contacting mating conditions
- Three sizes: Senior, Junior, and Mini



Tight Jacket LC Connectors

- Multimode and single mode
- Simplex or duplex
- Tested using MIL-PRF-85045/16 2.0 mm cable
- Non-pull-proof design: jacket and buffer move together to reduce chances of micro-bends and fiber breakage

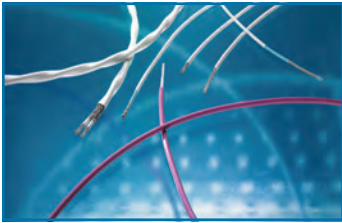


RF Connectors and Cables

- Wide range of standard, subminiature, and microminiature interfaces and frequencies
- Connectors, cables, and cable assemblies
- Always EU RoHS/ELV compliant
- Qualified to MIL-PRF-39012, MIL-DTL-83517, MIL-PRF-55339

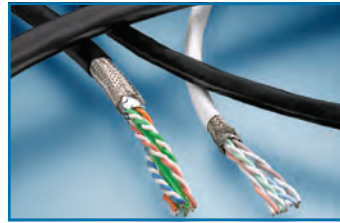
Harnessing High-Performance from Design to Finish, End to End

WIRE AND CABLE



Hook-Up Wire

- Wide range of standard- and thin-wall insulations in single- and dual-wall constructions
- SPEC 55 wire: Cross-linked modified ETFE, rated -65°C to 200°C
- SPEC 44 wire: MIL-W-81044, rated -65°C to 150°C
- ZEROHAL wire: low smoke, halogen free, and highly flame retardant, rated -55°C to 125°C



High-Speed Copper Cables

- Ruggedized constructions
- Ethernet
- CANbus
- USB
- Quadrax
- DVI
- Firewire
- CHEMINAX coaxial and twinaxial cables



MIL-STD-1553B Data Bus

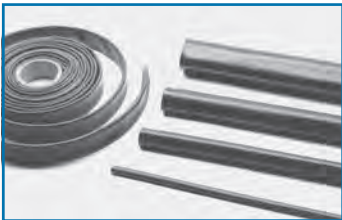
- Complete system
- Couplers
- Cables
- Connectors and contacts
- Bus and stub terminators



Devices

- Wide range of products for shield-to-ground terminations and high-performance splicing
- SolderSleeve terminations
- SolderShield splices
- Cold-applied splices
- MiniSeal splices

TUBING AND MOLDED PARTS



Heat-Shrink Tubing

- Radiation cross-linked fluo-polymers, fluoroelastomers, and elastomers
- Available in many sizes, constructions, lengths, and colors
- Dependable insulation, mechanical protection, and strain relief
- Single-wall, dual-wall, heavy-duty and special-purpose versions



Micromolded Parts

- Small size
- Supplied in expanded form
- Adhesive lined options
- Strain relief
- Available in a range of different cross-linked polymeric materials



NBCCS Heat-Shrink Tubing and Molded Parts

- Survivable after live agent exposure to HD, VX and TGD
- Complete harnessing solution
- Tested to TOP 8-2-510, NBC Contamination Survivability
- Tested to SCX-15112 and SCX-15111 for fluid resistance at elevated temperatures
- Three performance levels with temperature ranges up to -65° to +200°C



Repair Products

- Heat-shrink tapes, wraps, sleeves, and tubing
- Sealed splices and terminals
- Cold-applied splices
- Sealing bushings
- Toolless connectors

BACKSHELLS AND ACCESSORIES



Backshells

- Wide range of configurations for circular and rectangular connectors
- Easy to use
- Shield terminations for excellent EMC
- Strain relief and shielding
- Unique spin lock variable-angle backshells
- HexaShield backshells for high-performance shield terminations



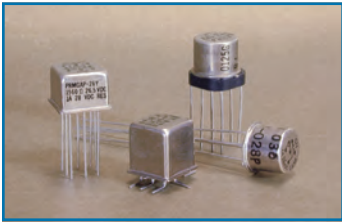
Connector Accessories

- Grounding and shielding
- Backshells
- Dust caps
- Grommets and seals
- Heat-shrink tubing and molded parts

Power Management

Efficient, Spacing-Saving Performance

RELAYS



CII Board-Level Relays

- Miniature hermetically sealed
- Non-latching, single-coil latching and dual-coil latching designs
- Through-hole and gull-wing surface mount terminals
- High frequency models capable of switching up through 6 GHz
- Excellent isolation, insertion loss and VSWR
- MIL-PRF-28776 and -39016 qualified products available



CII Mid-Range Relays

- 5-50 A relays in compact or standard size cases
- Balanced force design with permanent magnet drive
- Terminal styles include socket pins, solder pins, and hook solder terminals
- Numerous mounting options
- Hermetically sealed, welded construction
- MIL-PRF-6106 and -83536 qualified products available



KILOVAC High Voltage Relays

- Voltage isolation to 70 kV
- Current carrying capability to 110 A
- Handles RF frequencies to 32 MHz
- Various contact forms available
- Flange, panel and PC board mounting styles
- Optional coils, mountings and terminals



KILOVAC Lightweight 0 to 1800 VDC Contactors

- Make and break current ratings from 5 to 300 A
- For switching from 28 to 1800 Vdc
- Small, lightweight, hermetically sealed units have gas or vacuum dielectric
- Contacts available in Form A, Form B, Form C, and latching arrangements



Hartman Lightweight 28 VDC Contactors

- Main contact ratings to 1000 A
- Available with a variety of auxiliary contact arrangements
- SPST and SPDT main contact forms
- Standard, reverse current and automatic dropout types
- Hermetically or gasket sealed models in conventional or bus bar mounting



Hartman AC Contactors

- Main contact ratings to 800 A; arrangements to 4PDT
- Available with a variety of auxiliary contact arrangements
- Side stable, latching and center off models
- Hermetically or gasket sealed
- Wide range of compact, lighter weight models

POWER DISTRIBUTION UNITS



Customized Lightweight Power Distribution Units

- For primary and secondary power distribution
- Modular systems consist of various plug-in and bus bar line-replaceable modules (LRMs) installed on a panel mounting system or backplane
- LRMs may be contactors, circuit breakers, sensing units, ELCUs, etc.
- Backplanes, designed as a fault-free zone with no moving parts, are intended as a permanent installation on the mother vehicle
- Optional current/voltage sensing, fuses, circuit breakers, power monitors, etc.
- Weight-saving and space-saving designs reduce OEM labor requirements and ease maintenance
- Optional integration of generator control units and logic control units

Integrated Assemblies and Advanced Technology

Adding Value and Putting Innovation to Work



Harness Assemblies

- Sealed harnesses
- NBCC compliant harnesses
- RF and optical



RF Cable Assemblies

- Custom designed, application specific
- Flexible and semirigid cables
- Frequencies to 60 GHz



Value-Added Assemblies

- Cable assemblies
- Power distribution modules
- Sensor modules
- Composite enclosures
- Embedded antennas



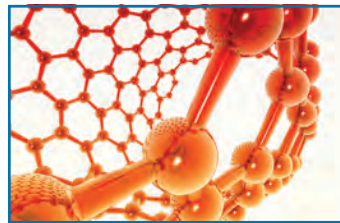
Embedded Antennas

- Multiple antennas on polymer and PCB substrates
- GSM, GPS, Wi-Fi and custom
- Integrated RF cable/connectors
- 3-D antenna with controlled beam pattern and broadband performance
- Damage-resistant designs with low observable profile



Polymer and Composite Enclosures

- Designed to replace metal enclosures
- Offers weight savings up to 50%
- Corrosion resistant
- Conductive composites and plated options for grounding/EMI shielding.
- Available with integrated wire traces, antennas, and connectors



Carbon Nanotube Technology

- Metal-like strength and electrical conductivity
- Long carbon fibers: Improves strength and hardness.
- Lightweight shielding
- Lightweight wire and cable



Sensors

- Rotary and linear position sensors
- High accuracy
- Low weight and low power
- Contactless for high reliability
- Fully common mode for high EMI and static-electric conditions
- Wide environmental specification for the harshest conditions including external flight control systems



Custom Solenoids

- Push, pull or combination motion
- Broad operating temperature range
- Multiple termination and mounting options
- High altitude, shock, acceleration and vibration reliable

FOR MORE INFORMATION

Technical Support

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