

smiths interconnect
a **molex** company



Defence

Connectivity Solutions

CUTTING-EDGE
CONNECTIVITY

About Smiths Interconnect



We Offer



Smiths Interconnect, a Molex company, is a leading provider of high reliability connectivity products and solutions serving segments of aerospace and defence, medical, semiconductor test and industrial markets. It designs and manufactures technically differentiated electronic components, as well as microwave, optical and radio frequency products and sub-systems that connect, protect and control critical applications.

Smiths Interconnect is the supplier of choice for safe, efficient and highly reliable connectivity in various military and defence applications. Our proven industry expertise lies in designing and manufacturing integrated microwave assemblies, SATCOM, datalinks, optical transceivers, connector solutions and cable assemblies that achieve optimal system performance in demanding environmental conditions.

Our technology brands (EMC, Hypertac, IDI, Lorch, Plastronics, Reflex Photonics, RF Labs, Sabritec and HSI) are synonymous with exceptional performance in technologically advanced, high quality solutions required for a high degree of safety and durability. Our extensive product portfolio includes high reliability electrical connectors and cable assemblies, rugged embedded transceivers and a wide range of innovative RF and microwave solutions.



Defence & Aerospace



Communications



Industrial



Your partner
of choice for
cutting-edge
connectivity
solutions

80+

Years
Experience

Technology

Broad Range of Advanced
Interconnect Technologies

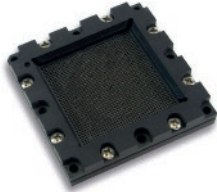
Flexibility

High Volume Product Platforms
& Complete Tailored Solutions

Service

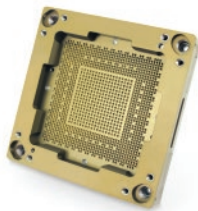
Global Reach with
Local Support

Technology Brands



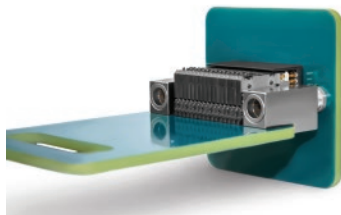
PLASTRONICS

A leading supplier of burn-in test socket solutions for all the latest packaged devices. With the most comprehensive QFN catalog in the world, in addition to a large portfolio of sockets for burn-in, HAST, failure analysis and other test requirements for Leaded, LGA and BGA devices.



IDI

World's most comprehensive offering of spring probe based solutions, including: contacts, connectors, interposers, semiconductor test sockets, and ATE interfaces. Proven off-the-shelf and custom products deliver the best solution for the customer's specific application.



HYPERTAC

Premium interconnect solutions for electrical and electronic applications requiring optimised quality, performance, and reliability. Hypertac connectors utilise the original high performance hyperboloid contact technology; ideal for harsh environments and safety critical applications.



HSI

Joint venture with Sichuan Huafeng Enterprise Group Co. Ltd, one of the major manufacturers of electronic components in China. Industry-leading connectivity solutions for commercial aerospace and railway markets in mainland China.



SABRITEC

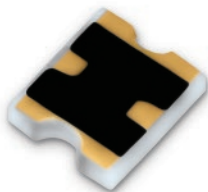
High speed quadax, twinax, fibre optic, filter, coax and triax connectors, contacts and cable assemblies. Custom multi-pin circular, D-Sub rack and panel connectors and MIL-Spec interface type products.

Connectors

Fibre Optics & RF Components

Semiconductor Test

- Connectors
- Fibre Optics & RF Components
- Semiconductor Test



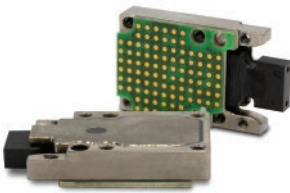
EMC

Board-level components incorporating advanced resistive and signal distribution technologies for a broad range of frequency spectrum applications. Extensive portfolio of RF devices used to attenuate, level, or terminate signals available in a variety of packages and footprints.



LORCH

Innovative solutions for the electronics and communications industries. Ranging from high performance wireless and RF products to micro-miniature, cavity, discrete, waveguide, tunable, ceramic, and printed filters and integrated assemblies.



REFLEX PHOTONICS

Embedded transceivers and transmit/receive modules for advanced interconnect-based solutions. Targeting high data rate interconnects where ruggedness and radiation resistance are required for defence, space, commercial aerospace and industrial applications.



RF LABS

High performance microwave cable assemblies and coaxial components supporting high performance operations, application-specific premium interconnects for high durability and harsh environments.

Synonymous with High Performance, Reliability and Safety.

Applications



Communications

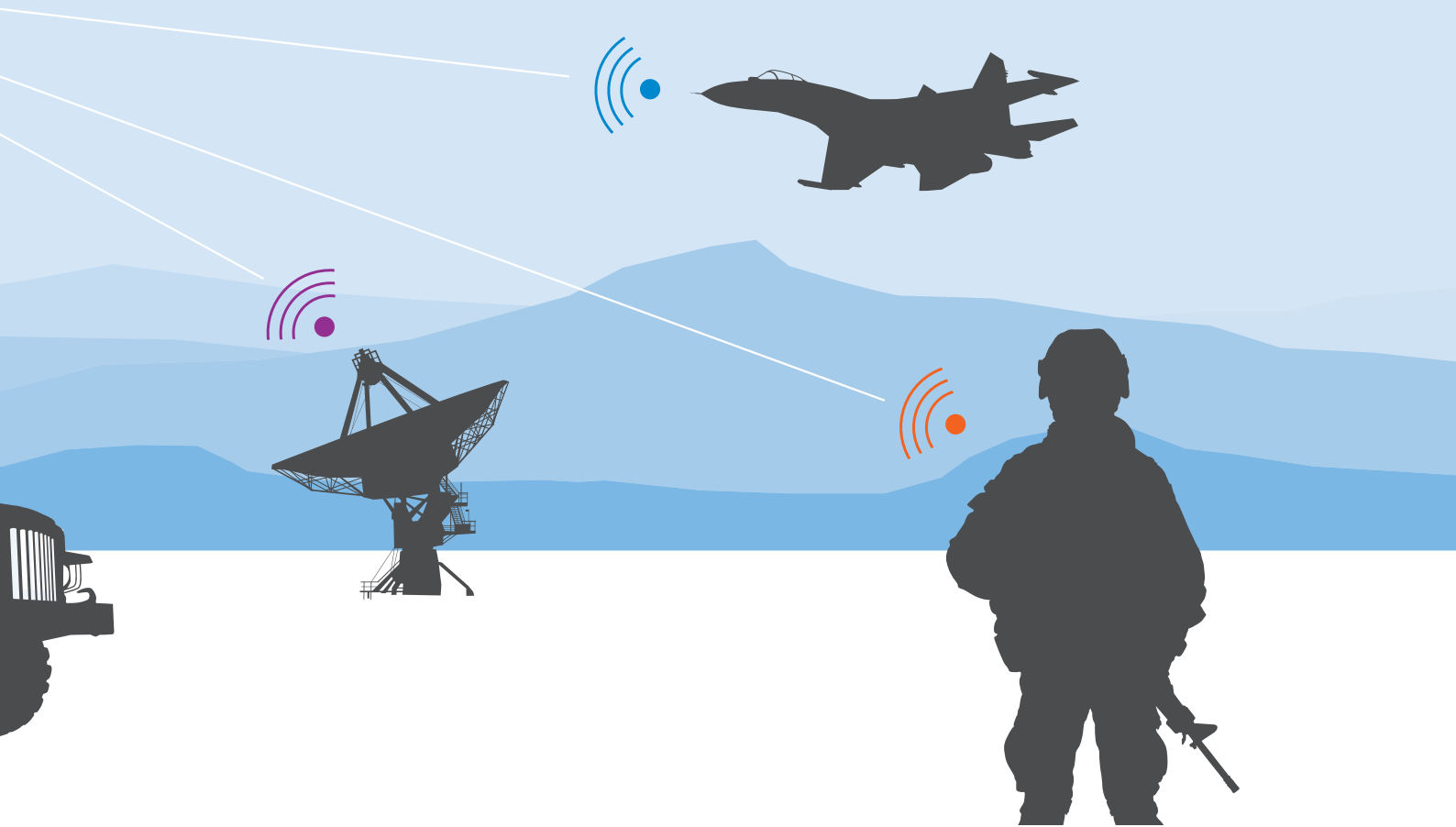
- Airborne, Vehicular and Naval
- Ground Based (Stationary & on the Move)
- Man-portable
- SATCOM
- Datalinks
- Missiles
- Timing & Networking

Electronic Warfare

- Electronic Countermeasure
- Electronic Protection
- Electronic Support Measures
- Simulation

Providing A Competitive Advantage

We offer a breadth of highly reliable, cutting-edge interconnect solutions proven in the harshest military environments. Our know-how and application expertise ensure the design, manufacture and supply of cost effective, high volume products and complete tailored solutions. We work closely with our customers to address their current needs and, as a technology leader, constantly enhance our capability to solve tomorrow's problems. Our technically differentiated solutions provide our customer with a competitive advantage when tackling the challenges of higher power, higher data rates, wider bandwidth, and greater connectivity all within a smaller footprint.



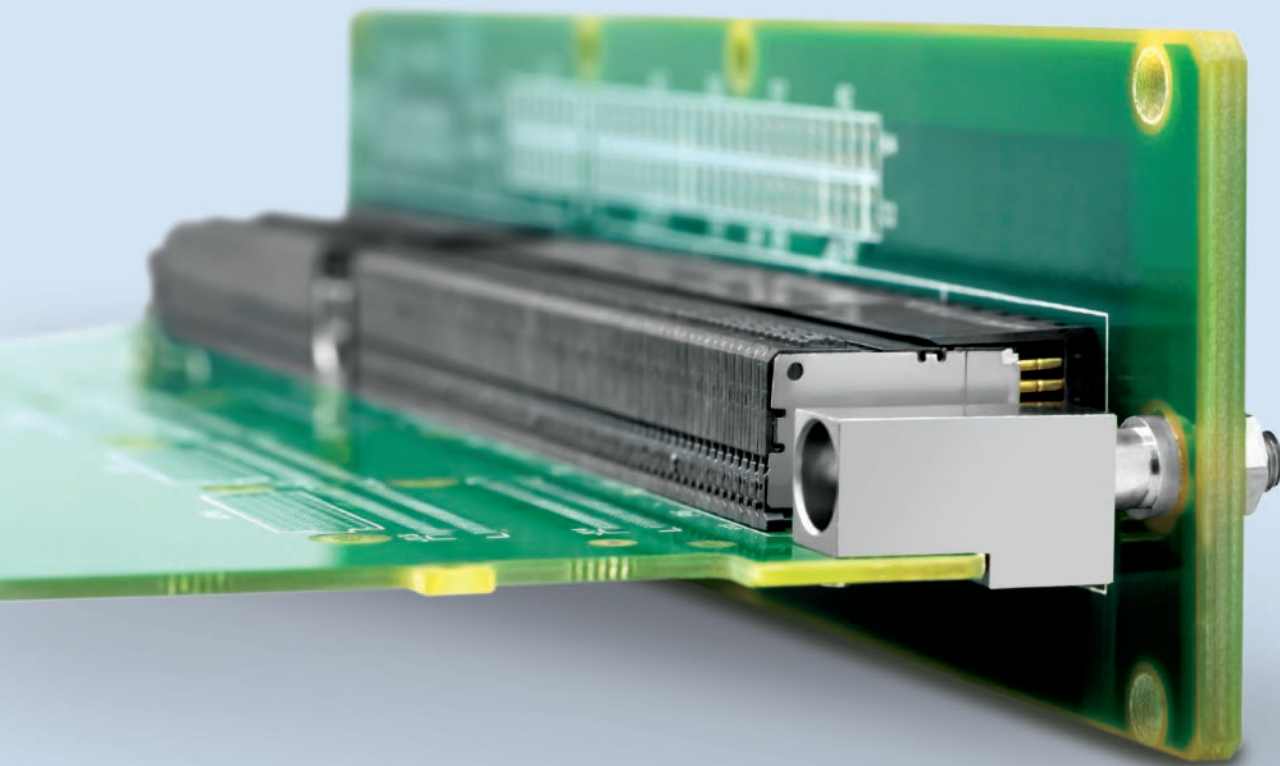
ISR

- Remote Sensing and Surveillance
- Data Analysis
- Data Recording
- Data Distribution and Management
- Positioning and Networking

Radar

- Surveillance Radar
- Precision Approach Radar
- Target Acquisition Radar
- Early Warning Systems
- Fire Control Radar
- Radar Altimeter

Connectors



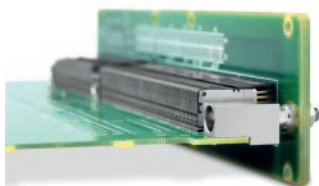
Reliability & Safety

Through our Hypertac, HSI, IDI, RF Labs and Sabritec technology brands, we supply application-specific, high-reliability electrical interconnect solutions from highly integrated assemblies to microminiature connectors and spring probe contacts. Our reliable contact technologies are the core of our advanced interconnect solutions: Hyperboloid, Spring Probe, High Speed, Fibre Optic, High Power and High Temperature.

**Providing
exceptional
performance
in critical
applications**

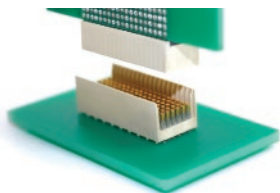
High Speed Vita Backplane

- Compatible with VITA 46/48, 63, and 78 standards
- Flexible modular design for standard 3U, 6U and custom configurations
- 100 Ω impedance for differential pair configurations
- Data rate performance up to 20 Gbps



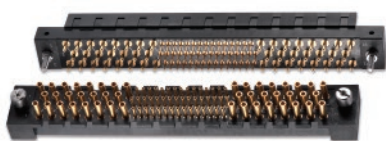
Rugged 2mm Backplane

- NASA GSFC qualified
- High-temp LCP insulator meeting outgassing requirements
- Reverse gender to commercial 2mm products
- Keying feature ensures proper mating
- Modular design for 3U/6U configurations
- Available in press fit version



Signal, Power & Coax PCBs

- Ranges from 17 to 594 contacts
- Signal, power, fibre optic & coax options with different terminations
- MIL-DTL-55302 compliant
- Front release, rear removable contacts



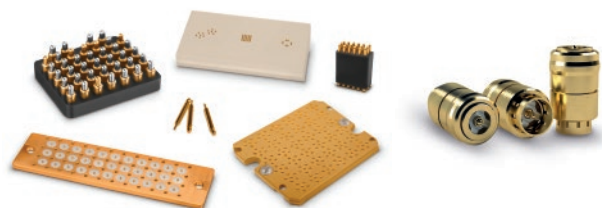
High Speed Copper

- Standard 100 & 150 Ω quadrax & twinax contacts
- Micro twinax and quadrax connectors
- Rugged D-Sub, ARINC and MIL-DTL-38999 standard quadrax and twinax
- Data rates up to 6.25 Gbps
- Reverse gender quadrax contacts



Spring Probe Interposers

- Low profile, high-compliance solderless solutions
- Mixed signal and functionality (Coaxial, Digital, DC) designed into a single connector
- High-speed up to 40 Ghz
- Alignment features enhancing flexibility



Rugged High-Density Modular

- Mixed signal, power, data, coaxial, fibre optic and pneumatic modules
- Provides up to 200 amp power
- Cable to chassis and rack & panel; plastic backshell with strain relief and half turn quick disconnect jackscrew
- Float mountable for blind mating
- Configurations compliant to EN45545 standards
- Large offering thanks to the modularity
- High reliability contact technology
- Several locking devices and hoods are proposed
- Floating version



Enhancing reliability in mission-critical applications



High Frequency

- Small lightweight connectors
- High frequency up to 110 GHz
- Single-piece spring probe coax for interposer solutions up to 40 GHz
- Micro-D coax connectors up to 40 GHz



Quick Release Miniature

- Lightweight, robust, quick release, miniature size
- Exceptional signal integrity
- Spring loaded contacts
- IP67 sealing, circular or rectangular options, with or without over-moulding and cabling
- Designed for extreme environmental conditions



Fibre Optic

- Butt-joint and expanded beam
- Floating design (<-0.5dB), low loss fibre options
- MIL-DTL-38999, ARINC 600 compatible
- PC or APC ferrule end face



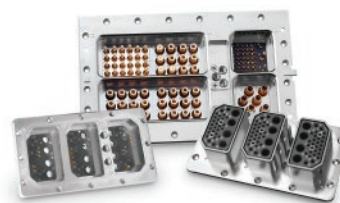
RF Coax/Triax

- Spring loaded for optimum contact mating force
- Low VSWR
- Size 8: 1.15:1 Typ Mated Pair, Size 12; 1.25:1
- Insertion Loss: 0.15dB to 26.5 GHz Typ (Size 8) and 0.2dB to 40 GHz Typ (Size 12)



EMI/EMP Filter

- MIL-DTL-38999, ARINC 600 compatible
- Intermateable and interchangeable with standard non-filter connectors
- Butt-joint and expanded beam
- TVS protection meeting the requirements of RTCA D160 section 22 up to level 5



High Power Circular

- Compact and small size for weight savings
- Quick locking device
- Current ratings from 300A to 500A
- 360° EMI/RFI shielding
- IP67 fully sealed
- Robust metal shells
- Finger proof IP2X

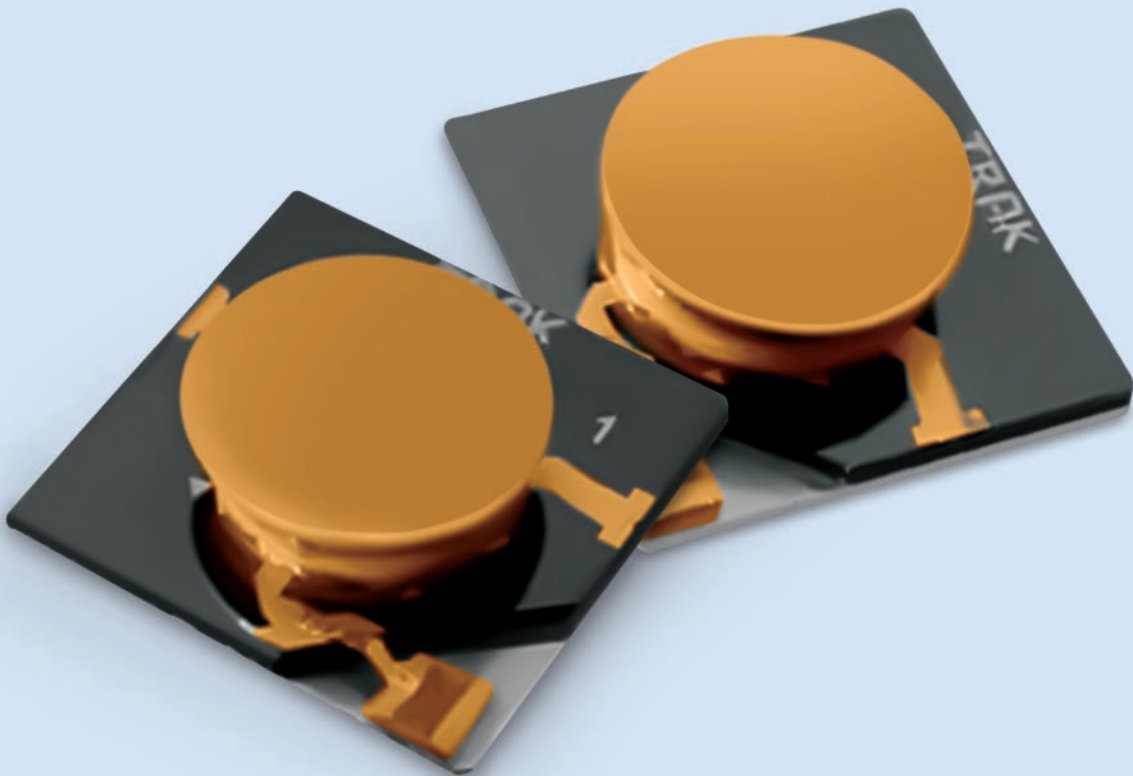


Fibre Optic ARINC 801

- Compatible with multi-mode and single-mode fibre
- Standard 1.25 mm ferrule and sleeve
- Cable termination identical to LC connector process
- Standard MIL-DTL-38999 and ARINC 600 Size 16



Fibre Optics & RF Components



Advanced Technologies and Solutions

Through our EMC, RF Labs, Lorch and Reflex Photonics brands we provide RF/Microwave components including: resistive & signal distribution components; cable assemblies; isolators and waveguide products; filters and integrated assemblies; embedded transceivers and transceiver modules for demanding high reliability environments.

**Extensive
portfolio in a
variety of
packages and
footprints**

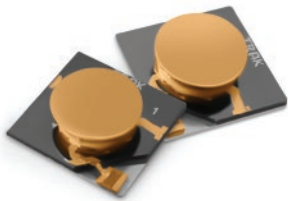
Coaxial Isolators

- Wide range of isolators, circulators, loads, terminations and attenuators
- Designed to operate from 300 MHz to 26 GHz
- Unique solid connectors (male/female connector barrel machined to be integrated in housing) with female and male orientations, in SMA and TNC styles
- All products are optimised for thermal and dynamic operational environments



Microstrip, Surface Mount & Stripline Isolators & Circulators

- Isolators and circulators
- Stripline devices operating in assigned bands from 0.4 to 18 GHz
- SMT devices in S, C & X-bands suitable for pick and place and re-flow soldering
- Microstrip offers a unique blend of broad band operation, low mass and low profile with devices available in assigned bands from 2.2 to 32 GHz



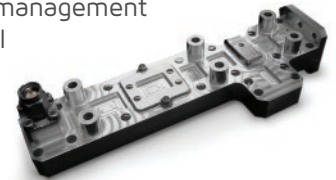
RF Components

- Innovative design and material maximise power-to-size ratio
- Low and high power designs from 0.1 to 800W
- Alumina, ALN, BeO and CVD substrates
- Wide range of resistance values
- High precision and reliability



Waveguides

- Isolators, circulators, combiners, couplers, loads, transitions, terminations, and multifunction assemblies
- High power waveguide circulators/isolators for protecting TWTs up to 32 GHz
- All products are optimised for thermal and dynamic operational environments
- High power devices are supplied as junction or differential phase shift types
- Where appropriate, devices are supplied with cooling/thermal management systems and additional functionalities as required



Attenuators

- Operating frequencies up to 50 GHz
- Superior broadband performance
- Space and military qualified
- Wide range of attenuation values
- Surface mount and wire bondable packages



Diamond RF Resistives

- Highest power to size ratio resistive components available
- Extremely low parasitic capacitance resulting in broadband performance
- Standard footprints available from 0402 (20 watts) up to 2010 (300 watts)
- Substantial size and weight reduction for space and high reliability applications
- Easy to implement packages; solderable & wirebondable chips or tabbed and flange options are available

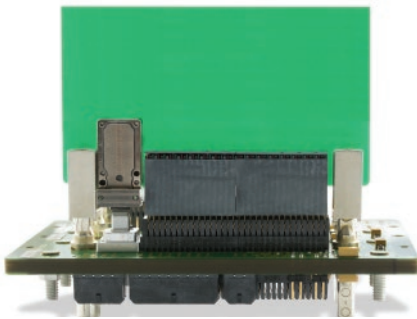


Advanced RF
solutions for a broad
range of frequency
applications



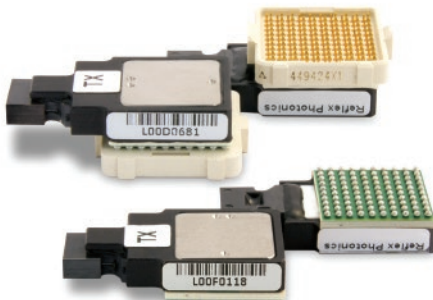
Optical VPX Interconnects

- Blind-mate backplane interconnects for embedded computing systems
- 10 Gbps and 28 Gbps optical modules in small-SWaP ruggedized packages
- Mechanical Transfer (MT) ferrule with linear array of 24 parallel multimode fibres
- Designed following VITA 66.5 standard
- Rugged solution, MIL-STD 883/202/810 qualified



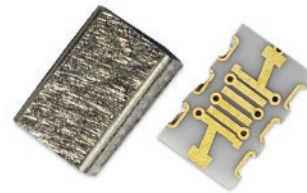
Rugged Mid-Board Optical Transceivers

- Proven: Used in many defence applications
- Small: Height as low as 5.5mm with interposer
- Rugged: MIL-STD 883 shock and vibration qualified
- Sealed: Moisture and thermal shock resistant
- Storage temperature: -57°C to 125°C
- Performance: Up to 28 Gbps/lane
- Operating temperature: From -40°C to 85°C
- Sensitivity: Up to -12dBm @ BER 10^{-12}
- Low power consumption: As low as 100 mW/lane
- Channel configurations: 4TRx, 12TRx (10G only), 12Rx, and 12Tx



RF Filters

- RF Filters, Multiplexers, Switched Filter Banks, and Integrated assemblies, from 100 KHz to 65 GHz
- Bandpass, lowpass, highpass, notch, diplexed & multiplex options
- Small footprint and light weight
- Surface mountable for pick and place applications with Planar X topology



Coaxial Flexible Cables

- Low loss dielectric material for lower attenuation
- Mode Free performance up to 40–110 GHz - for high frequency applications depending on connector & cable configuration
- Superior shielding effectiveness
- Direct solder sleeves to outer braids for superior reliability



RF Cable Assemblies

- Low-loss, high frequency cable assemblies available for dynamic and static applications
- Durable options for improved MTBF and reduced cost of ownership
- High power, low attenuation coaxial cable assemblies for longer assemblies in antenna use



Global Capabilities



Reliable Solutions

In-house capabilities encompassing design, development, manufacturing and testing to anticipate market needs, respond quickly and accurately to customers, and provide the most reliable connectivity solutions.

Market-leading Engineering and Technology Solutions

80+

Years Experience





Certifications, Standards & Compliance

- AS9100D
- ISO 9001
- ISO 14001
- ISO 45001
- NF F 61-030
- NF F 61-032
- NF F 16-101
- NF F 16-102
- NF-C 93421
- DIN 41612
- DIN 43652
- EN 50124
- EN 45545-2
- IEEE-1101.2-'92
- IEC 1076-4 101
- IEC 61373
- IEC 61984
- HE 501
- HE 704
- UTE C93-425
- UL94 VO
- RoHS compliance
- IRIS

Engineering

- 3D EM Modelling
- Advanced RF & System Modelling
- CAD/CAM & Solid Modelling
- Finite Element Analysis
 - Thermal Analysis
 - Shock & Vibration Analysis
- Reliability Analysis

Prototyping

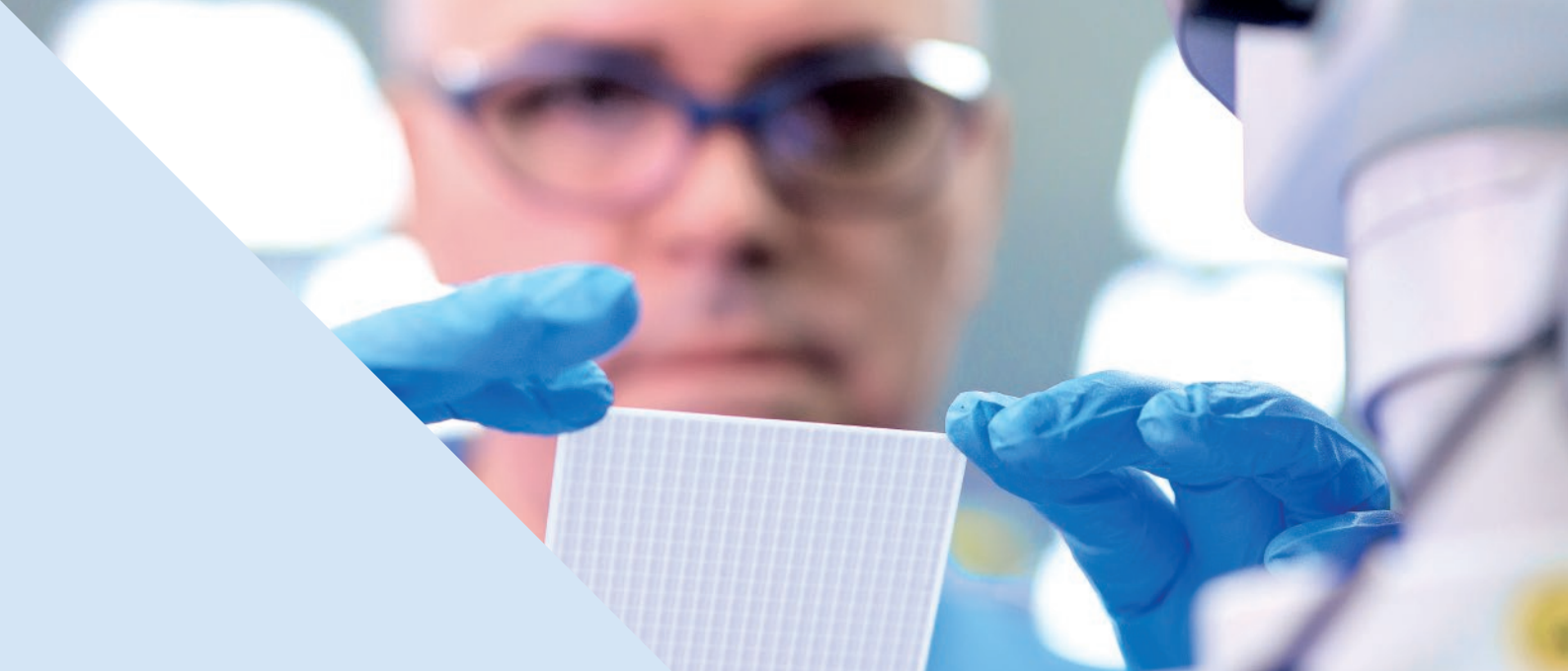
- CNC Turning & Milling Centres
- Cabling / Prototype Assembly
- 3D Printing
- Ceramic Grinding
- EDM
- Circuit Board Routing

Manufacturing

- Precision Machine Shops
- Connector, Contact & Cable Assembly
- Automated PCB Assembly & Inspection
- Automated Hybrid Assembly
 - Die Placement
 - Wedge & Wire Bonding
 - Gap Welding
- NASA Certified Soldering
- Automated Test & Tune
- Optical Alignment
- System Integration
- Validation Testing

Testing/Qualification

- Electrical Acceptance & LOT Test
- RF Test Capability, up to 325 GHz
- High Speed Digital
- Anechoic Chamber Testing
- ESS Environmental Qualification
- ESS Temperature, Shock & Vibration
- Metallurgical
- Real Time X-Ray
- Thermal Vacuum
- High Power RF Testing
- Optics Lab
- Multi paction, SRS mechanical shock



Connecting Global Markets

Smiths Interconnect's strong focus on serving international markets and customers is supported by our sales and technical teams across the Americas, Europe and Asia.

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Business Unit

Connectors

Fibre Optics &
RF Components

Semiconductor
Test

Worldwide Support

Americas

Sales

connectors.uscsr@smithsinterconnect.com

Technical Support

connectors.ustechsupport@smithsinterconnect.com

Europe

Sales

connectors.emeacsr@smithsinterconnect.com

Technical Support

connectors.emeatechsupport@smithsinterconnect.com

Asia

Sales

asiacsr@smithsinterconnect.com

Technical Support

asiatechsupport@smithsinterconnect.com

Sales

focom.uscsr@smithsinterconnect.com

Technical Support

focom.techsupport@smithsinterconnect.com

Sales

focom.emeacsr@smithsinterconnect.com

Technical Support

focom.techsupport@smithsinterconnect.com

Sales

focom.asiacsr@smithsinterconnect.com

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semi.uscsr@smithsinterconnect.com

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semi.emeacsr@smithsinterconnect.com

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semi.techsupport@smithsinterconnect.com

Sales

semi.asiacsr@smithsinterconnect.com

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semi.techsupport@smithsinterconnect.com

Pioneers of Progress

Advancing the world through cutting-edge connectivity

We aim to be the partner of choice for innovative connectivity solutions where reliability, high quality, technical expertise, application knowledge, and a reputation for excellence is vital.



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