

Corporate

Overview



smiths interconnect
bringing technology to life



About Smiths Interconnect

Smiths Interconnect is a leading provider of technically differentiated electronic components, subsystems, microwave and radio frequency products that connect, protect and control critical applications in the Defense and Aerospace, Communications and Industrial markets.



Your global partner for innovative connectivity solutions

Our technology brands (EMC, Hypertac, IDI, Lorch, Millitech, Reflex Photonics, RF Labs, Sabritec, TECOM, TRAK 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, solutions for antenna systems, and a wide range of innovative RF and microwave solutions.

Smiths Interconnect is part of Smiths Group plc, a global leader in applying advanced technologies for markets in threat and contraband detection, energy, medical devices, communications and engineered components. Smiths Group employs around 22,000 people in more than 50 countries.



INDUSTRIAL



COMMUNICATIONS



DEFENSE
& AEROSPACE



We Offer

Technical excellence and broad market experience

A comprehensive product portfolio providing customers with a single point of supply across multiple markets

Advanced engineered solutions integrating the combined expertise of our technology brands to create value for our customers

Optimized quality through first-class materials, state-of-the-art development practices, and world class talent

Robust financial pedigree and reputable heritage of Smiths Group

Technology Brands

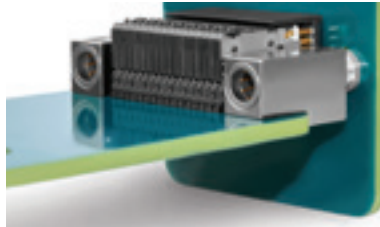
EMC



High Reliability RF/Microwave Resistive & Signal Distribution Components

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.

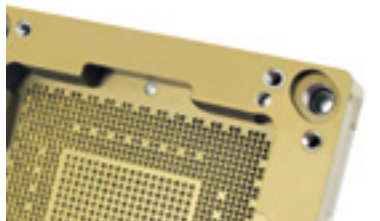
HYPERTAC



Superior Performing Electrical Connectors for the Most Demanding Applications

Premium interconnect solutions for electrical and electronic applications requiring optimized quality, performance, and reliability. Utilizing the original Hypertac hyperboloid contact technology to achieve high performance in harsh environments and safety critical applications.

IDI



High Density Interconnect & Semiconductor Test Solutions with Spring Probe Technology

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.

LORCH



RF/Microwave Conditioning Products with High Selectivity Using Multiple Topologies

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 tubular filters and integrated assemblies.

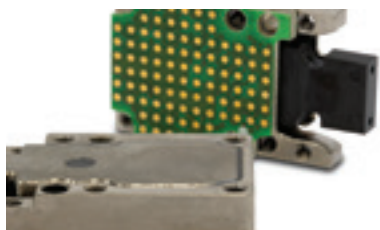
MILLITECH



Leader in Millimeter-Wave Technology & Product Solutions

Specializing in the engineering, manufacturing, and testing of millimeter-wave components, assemblies, and fully integrated subsystems for space, SATCOM, test and measurement, radar, and scientific applications.

REFLEX PHOTONICS



Developer of Rugged, High Speed Optical Transceiver Modules & Parallel Embedded Optics Products

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

RF LABS



High Frequency Microwave Cable Assemblies & Coaxial Components

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

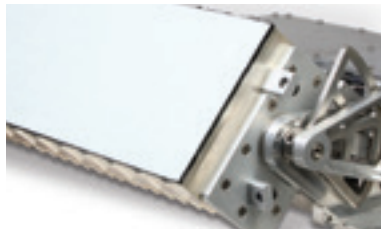
SABRITEC



High Speed Data and Transient Protection Interconnect Solutions

High speed quadrax, 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.

TECOM



Advanced Antenna Systems & Solutions for RF/Microwave Applications

Industry leading innovator of antennas and positioning systems for SATCOM in-flight connectivity, instrumentation, datalink, command & control, and telemetry applications integrated into the world's most advanced commercial and military platforms.

TRAK



High Reliability RF/Microwave Subsystems & Components

High reliability multi-function RF systems, ferrite microwave products, and precision time & frequency systems for defense, commercial aerospace, space, homeland security, and public safety applications.

HSI



High Reliability Connectors for Commercial Aerospace & Railway

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.

Synonymous with exceptional performance, safety and durability

Markets

Aerospace & Defense

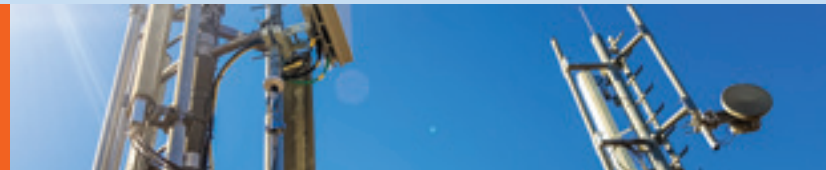


Commercial Aerospace

We connect customers around the world with our high speed in-flight SATCOM terminals. Our relentless pursuit of innovative high performance connectivity solutions enables us to provide high density, high power handling, EMI/EMP protection, RF and high speed capabilities focused on the next generation of airframe applications.

- Avionics Equipment
- Engine Systems
- Power Distribution
- SATCOM Broadband Connectivity

Communications



Wireless Infrastructure

Our solutions help evolution to 5G, while maximizing the use of existing infrastructure. Our components and sub-systems help ensure reliability in mission critical wireless communications.

- 4/5G Networks
- Remote Radio Installations
- Distributed Antenna Systems
- Data Centers

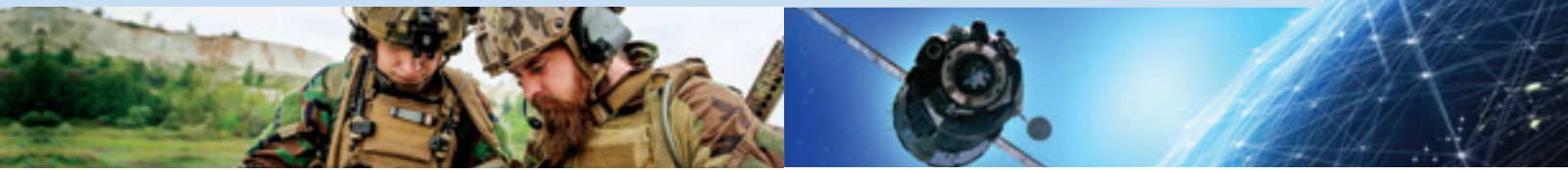
Industrial



Transportation

We offer multiple interconnect technologies able to withstand harsh environments of extreme temperatures, pressure, shock and vibration, ensuring system quality and reliability.

- Rolling Stock
- Signaling
- Infrastructures
- Vehicles
- Automotive



Defense

We partner with our customers to design and manufacture products and solutions including connectors, cable assemblies, multi-function RF systems, SATCOM terminals, datalinks, and antennas to achieve optimal system performance in the most demanding end-user environments.

- Radar
- Electronic Warfare
- Integrated Vehicle Systems
- Intelligence, Surveillance, Reconnaissance (ISR)

Space

We engineer superior NASA and ESA-certified solutions to ensure continuous connectivity within environments where shock and vibration, corrosive atmosphere, and thermal deviations are prevalent.

- GEO/MEO Satellites
- LEO Satellites
- Launchers
- Ground Support Equipment



Semiconductor Test

We develop sockets and probe card products that ensure superior quality and reliability in testing applications. Our solutions support the finest micron pitches while meeting requirements for higher bandwidths.

- Area Array Test
- Package-on-Package Test
- Wafer Level Test
- Peripheral Package Test

Test & Measurement

We create high quality connector and cable assemblies that deliver increased phase stability, decreased insertion loss, and design flexibility for long lasting performance in lab and production test environments.

- Electronics Testing
- Automotive Testing
- Telecommunications
- RF and Microwave Testing



Medical

We provide solutions that protect, connect, and control critical medical devices which meet requirements for invasive procedures, disposable components, embedded electronics, high cycle life, and sterilization.

- Surgical Systems
- Patient Monitoring
- Imaging Systems
- Disposables

Industry

We design durable and robust platform products and customized solutions combining rugged backshells with high reliability contact technologies for easy assembly.

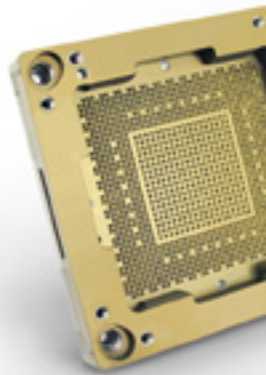
- Heavy Equipment/Machinery
- Industrial Automation
- Utilities

Product

Overview

60+

Years Experience



Technology

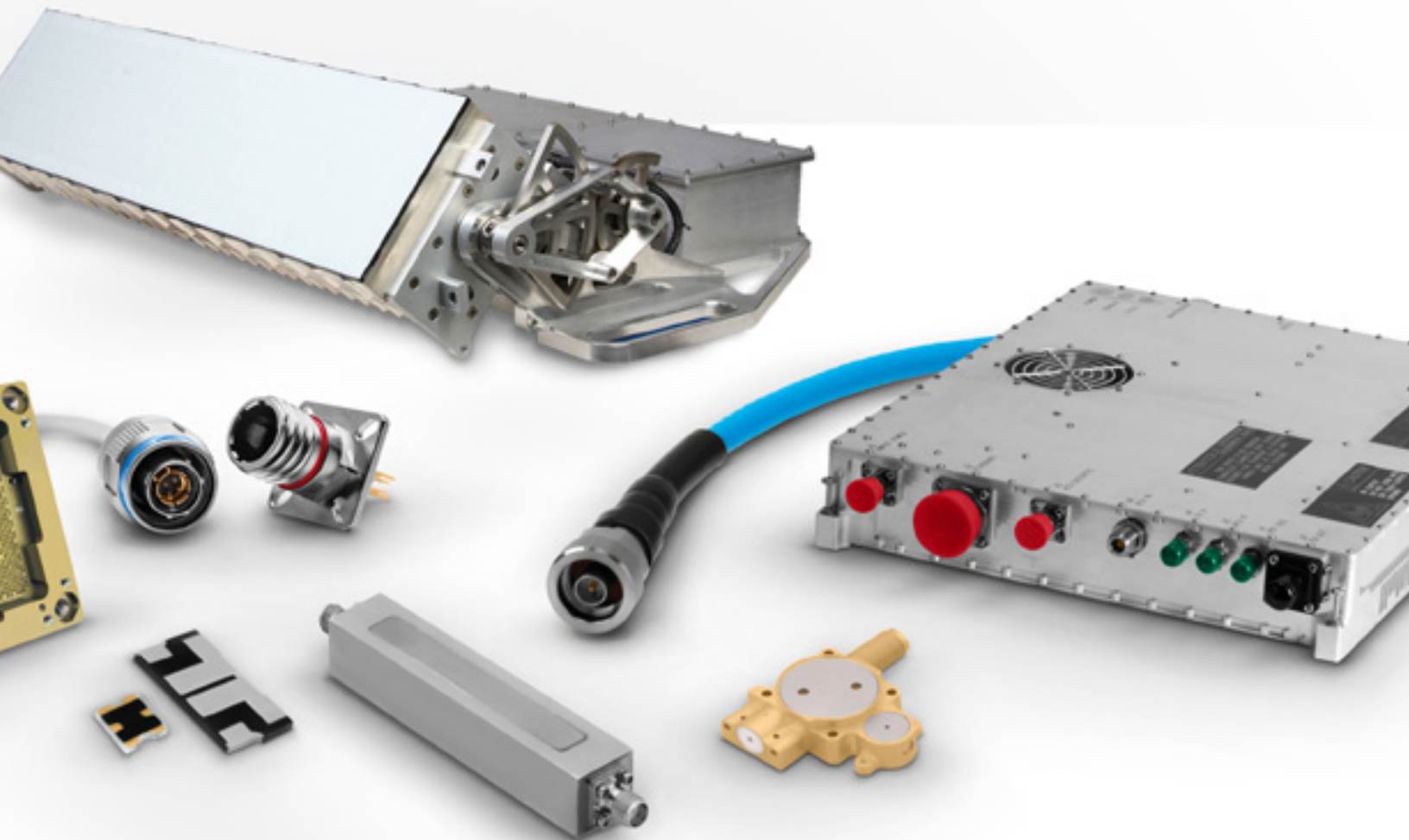
Broad Range of
Advanced Interconnect
Technologies

Flexibility

High Volume Product
Platforms & Complete
Tailored Solutions

Service

Global Reach
with Local
Support



Cable

Assemblies



Premium Interconnects

High performance microwave cable assemblies and coaxial components supporting critical operations with application-specific premium interconnects for high durability. Embedded with RF Florida Lab technology, our cables are available with customized option packages and are especially well-suited for precision testing applications and harsh environments in aircraft, marine, space and ground applications.

**Well-suited for
precision testing
applications
and harsh
environments**

ASR Precision Test

- High performance VNA test cables for precision testing applications
- Maintains mechanical configuration for consistent, repeatable test results
- Available with a wide range of connectors including 2.4 mm and 2.92 mm NMD connectors
- Individual or phase matched pairs



Semi-Rigid, Conformable & Flexible

- High frequency
- High isolation up to >100 dB
- Copper, Aluminum and Tin filled composite jackets
- Range of protective coverings available
- Low loss options available in Silver and Tin plated outer conductors



Titan-Flex®

- Robust solder termination
- Crush-resistant and durable
- Superior electrical performance over comparable products
- Optimized braiding construction for excellent shielding to 18 GHz



Lab-Flex®

- Field-proven up to 50 GHz
- 40% lower insertion loss than solid dielectrics
- Solder sleeve cable-connector termination delivers superior electrical performance and pull retention
- Shielding: <90 dB
- Stranded center conductors available (Lab-Flex® S)
- Phase stable (Lab-Flex® T) and phase matched options available



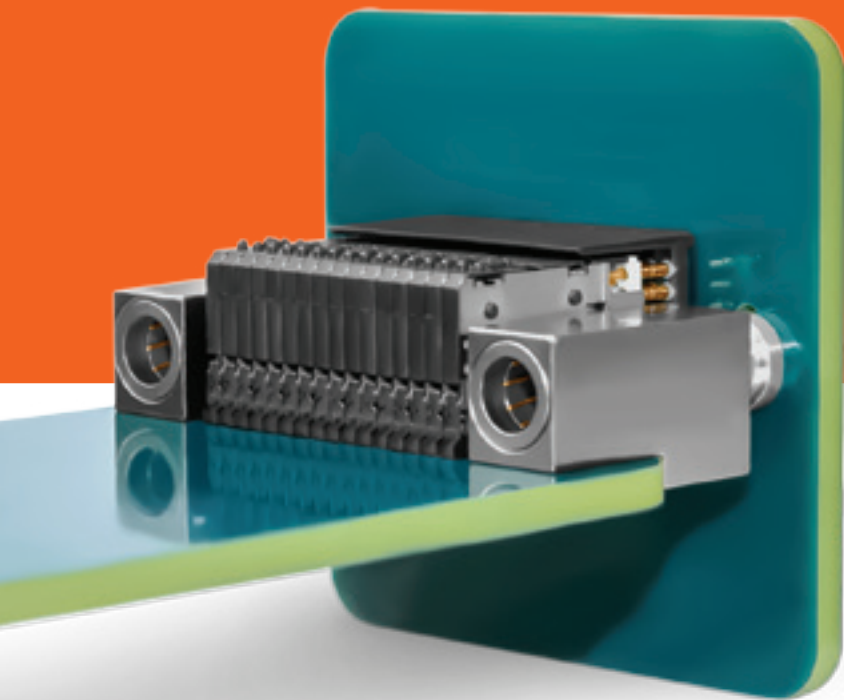
SpaceNXT™ Q Series

- Space qualified flexible cable assemblies
- Mode-free frequency response up to 50 GHz
- Radiation resistant jacket materials tested up to 100Mrad total dosage (~15 years flight life)
- Available with wide range of connectors and add-on testing packages for configurable products to meet all design and schedule constraints
- Flight heritage and qualification reports available upon request



Industry leader in manufacturing excellence, tailored performance, and rapid delivery of custom cable assemblies

Connectors



Reliability and Safety

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

**Providing
exceptional
performance
in critical
applications**

Circular

- Available in metal and plastic shells
- Crimp and solder terminations
- Push-pull and color-coded options



EMI/EMP Filter

- Intermateable and interchangeable with standard non-filter connectors
- C, L, and Pi style EMI filters
- TVS protection meeting the requirements of RTCA D160, Section 22, up to Level 5



High Power

- Standard 100 and 150 ohm split pair quadraX, quadraX, and twinax contacts
- Excellent power performance up to 700 Amps
- Suitable for harsh environmental conditions
- High number of mating cycles



High Speed

- Standard 100 and 150 Ω quadraX and twinax contacts
- Formats MIL-DTL-38999, ARINC 600, MIL-DTL-83527, and D-Subminiature
- Manufacturing to Fiber Channel, Ethernet, Firewire, USB, and DVI protocols



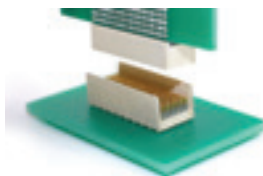
Modular/Rectangular

- Configurable with signal, power, RF, twinax, triax, quadraX, and fiber optic contacts into a single connector
- Guided hardware for blind mating



PCB

- Low, medium, and high density connectors with long life cycle
- Signal, power, coaxial, and high speed configurations
- Board-to-board, cable-to-cable, cable-to-board, and stacking



SpaceNXT™ Platform

- High reliability products pre-tested and qualified for next generation space applications
- Lower cost of installation and ownership with solderless spring probe and press-fit solutions
- Shorter time to market through Theme & Variation processes on standard COTS+ platforms
- Support higher bandwidths on VHTS satellites with flexible digital payloads



Spring Probe

- Low profile, high compliance ratio
- Z-axis compliance
- Blind mate engagement
- Low, stable resistance with long cycle life



Defense

Antenna Systems



Specific Application Knowledge

Smiths Interconnect offers antenna systems for Aerospace & Defense applications, from SATCOM, GPS, flush mounted, micro strip, blade instrumentation & data-link to fixed and mobile positioning systems. Our broad portfolio of off-the-shelf and build-to print solutions featuring TECOM and Millitech innovative technologies is designed to meet specific end-user needs.

**Design to
specification and
off-the-shelf
antenna
solutions**

Airborne/Missile/ Space

- Broad range of off-the-shelf and build-to-print antenna systems designed to meet program-specific needs
- Full line of high performance telemetry, MDI and tracking beacon antennas specifically designed for flight instrumentation data collection in extreme mission critical operational environments
- Directional, omni-directional, and hemispherical configurations including Log Periodic, Biconical, Parabolic, El-Par, and CSC2 antennas



Antennas & Quasioptical Products

- Full range of MMW antenna products and technologies including aperture, reflector, and lens-based antennas
- Standard models from 18 to 325 GHz
- Custom designed antenna arrays available
- Additional offerings: polarizers, orthomode transducers, monopulse comparators, waveguide rotary joints & precision corner reflectors for RCS references



Positioners/ Controllers

- Fixed and mobile positioning systems for use in range telemetry, flight termination, airborne and ground datalink, target tracking and jamming, signal intelligence, and direction finding applications
- Ranging from man-portable to 7 meter installations, rack mounting or embedded in the pedestal

- Turnkey solutions available with reflector and feed assemblies from 0.5 to 325 GHz
- Designed to meet environmental MIL-STD requirements



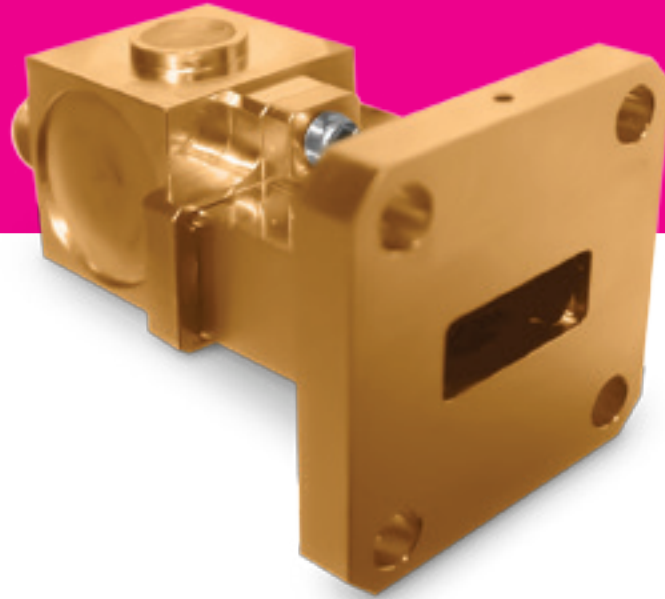
Wideband Antennas

- Broad portfolio of wideband and directional antennas for broadband surveillance, tracking, direction finding and jamming systems
- Frequency range from 20 MHz to 40 GHz
- Omni-Directional, Log Periodic, Biconical & Planar Cavity-Backed Spiral antennas



Ferrites

& Passive Sub-Assemblies



High Performance Components

Smiths Interconnect offers a wide range of ferrite devices and waveguide products featuring TRAK brand technology that are ideal for a variety of space, defense & commercial applications. Our product range includes isolators and circulators, combiners, transitions, terminations, iso-adapters and integrated assemblies.

**Ideal for a
variety of space,
defense and
commercial
applications**

Coaxial

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



Microstrip, Surface Mount & Stripline

- Isolators and circulators
- Operating in assigned bands from 400 MHz to 31 GHz
- Used in a variety of interfaces including MIC, tabbed, and SMD interfaces
- Microstrip offers a unique blend of broad band operation, low mass and low profile
- Surface mount and Stripline suitable for pick and place and reflow soldering



Passive Sub-Assemblies

- Full waveguide band isolators and circulators
- High power waveguide circulators for protecting TWTs
- Standard models from 18 to 260 GHz
- Low-pass, band-pass, and high-pass waveguide filters
- Waveguide duplexers and triplexers
- Metrology grade lab assets



Waveguide

- Isolators, circulators, combiners, couplers, loads, transitions, terminations, and multi-function assemblies
- Full waveguide band isolators and circulators WR-42-WR-05 (18-220 GHz)
- High power waveguide circulators / isolators for protecting TWTs up to 100 GHz
- Breadth of passive products operate from 1.0 GHz to 325 GHz
- All products are optimized for thermal and dynamic operational environments
- Metrology-grade lab assets
- 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



Filters



Advanced Quality

Smiths Interconnect provides technically advanced, high quality Lorch technology RF Filters, Multiplexers, Switched Filter Banks and Integrated assemblies, from 30 MHz to 51 GHz. Our rigorous design, manufacturing & inspection criteria processes and procedures ensure products that are fully compliant to each application's unique specifications

**Rigorous design,
manufacturing
and inspection
criteria**

Cavity

- 30 MHz to 40 GHz
- Bandwidth: 3 dB from 0.5 to 66%
- High "Q", low loss
- High power
- Helical, combline, interdigital, and waveguide



Ceramic

- 400 MHz to 6,000 MHz
- Bandwidth: 0.5 to 10%
- Surface mount, PC mount, connectorized options
- Stand-alone or diplexed



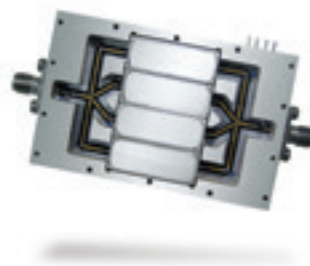
Discrete

- 5 MHz to 7.5 GHz
- Bandwidth: 3 dB to >100%
- Band-pass, low-pass, high-pass, or notch
- Surface mounts, pins or connectors
- Monotonic and elliptic responses



Integrated Assemblies

- 500 MHz to 18 GHz
- 2 to 9 channels available
- Use of both MIMIC and solid state switching
- Connector or RF pin launch
- Hermetic seal available



Tunable

- 24 MHz to 4,000 MHz
- Direct readout
- Octave tuning
- High power
- Digital controlled available



Waveguide

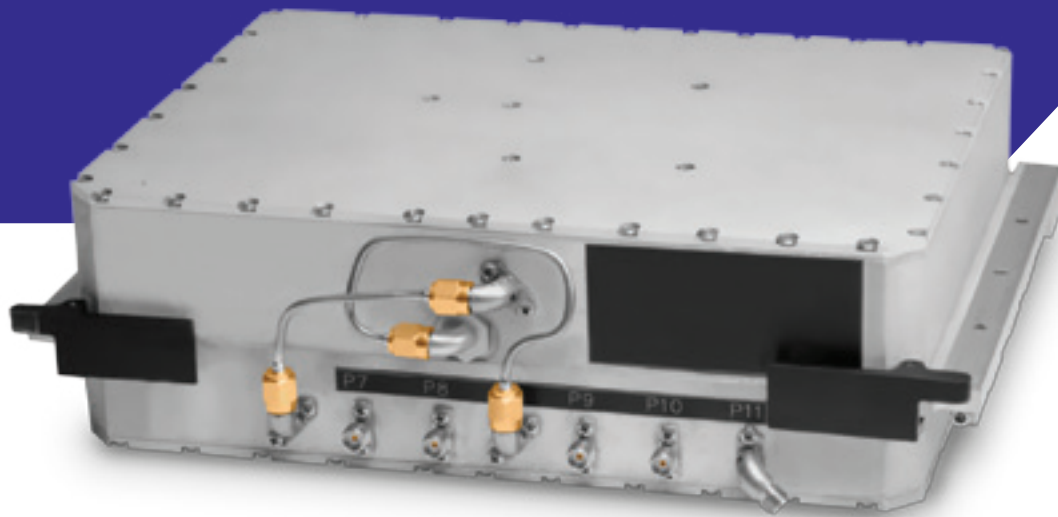
- Frequency range: 2 GHz to 260 GHz
- 2 through 20 sections
- W/G flange, or connectorized
- Stand-alone filters, filter banks, diplexer and multiplexers
- WR-159 to WR-04
- Band-pass, low-pass, high-pass, and notch filters



Innovative filter products optimized for RF and microwave applications

Multi-Function

RF Systems



Compact Ultra-Low Noise

Our Multi-Function RF Systems incorporating TRAK and Millitech technologies include compact ultra-low phase noise and spurious frequency sources and exciters, high dynamic range block and tuned frequency converters, receivers and receiver protectors, amplifiers, for harsh military, aerospace and space environments enabling EW, communication, satcom, remote sensing, and datalink systems.

**Custom and
standard high
performance
solutions**

Amplifiers

- Broad array of power amplifier (AMP), and low noise amplifier (LNA) solutions
- Standard models from 18 to 110 GHz
- Custom variations of standard MMW components, as well as multi-components assemblies and solutions
- GaN, GaAs, InP, SiGe Technologies



Frequency Multipliers & Comb Generators

- SRD-based & NLTL-based comb generators
- Active & passive multiplier chains
- Up to full waveguide bandwidths
- Standard models available through 305 GHz



Receiver Protectors

- Communications and RADAR receiver protectors
- Incorporating discrete diode and MMIC limiter, LNA, receiver filter, T/R blanking switch, and ferrite isolator products



Switched Filter Banks

- Shunt series & discrete N-throw switches
- Comb selector filters
- High power handling and fast switching options
- C to KA Band



Active Components

- Full waveguide band balanced mixers and models
- Fundamental, harmonic, biased, and I/Q models available
- Active and passive multiplier chains
- SPDT and PDT switches
- PIN diode based attenuators
- Standard models from 18 to 325 GHz



Frequency Sources

- Low phase noise
- Low spurious
- Synthesized and direct



Master Oscillators

- Ultra-low phase noise
- Crystal based
- Ovenized and non-ovenized

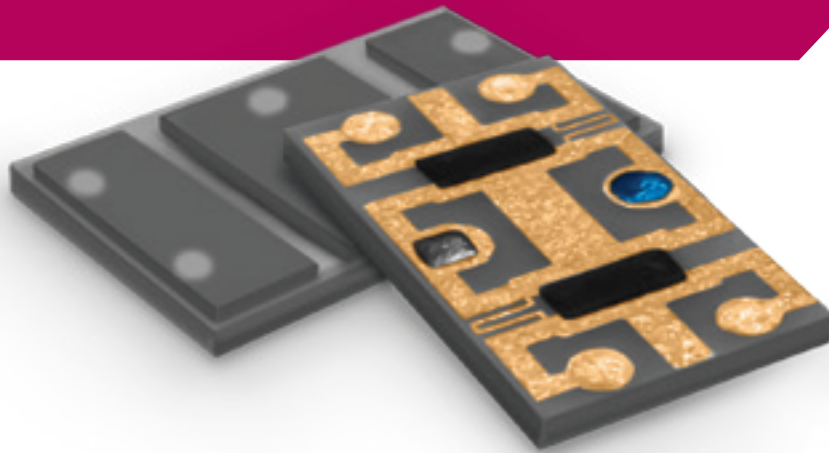


Up/Down Converters & Receivers

- Single and multi-channel
- Integrated Up/Down Converter and Exciter with Fast Hopping Synthesizer
- LO and Vibration Mitigated Reference Source
- Through 325 GHz



Radio Frequency Components



Advanced Technologies

Our high-performance board-level components featuring EMC technology incorporate advanced resistive and signal distribution technologies for a broad range of frequency spectrum applications. Our extensive portfolio of RF devices is used to attenuate, level, or terminate signals available in a variety of packages and footprints for demanding high reliability environments.

**Available
in a variety of
packages and
footprints**

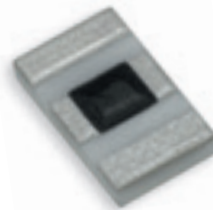
Attenuators

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



Resistors

- Wide range of resistance values: 1-1K ohms
- Power handling up to 800 watts
- Operating frequencies up to 30 GHz
- Tight tolerances are available: $\pm 5\%$, $\pm 2\%$ or $\pm 1\%$
- Various finishes available: Tin/Lead, Silver & non-magnetic
- SMT & wire-bondable chips, tabbed and flange options or rod



Terminations

- Optimized impedance matching and Low VSWR
- Power handling up to 2.2 kilowatts
- Operating frequencies up to 28 GHz
- Multiple substrate options: Alumina, Beryllium Oxide & Aluminum Nitride
- Large selection of mounting styles: solderable SMT & wire-bondable chips or tabbed and flange options are available



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 & wire-bondable chips or tabbed and flange options are available



Signal Distribution

- Resistive power dividers, Wilkinson power dividers and power samplers
- 2, 3 & 4 way power splits options available
- Operating frequencies up to 12 GHz
- Surface mountable packages



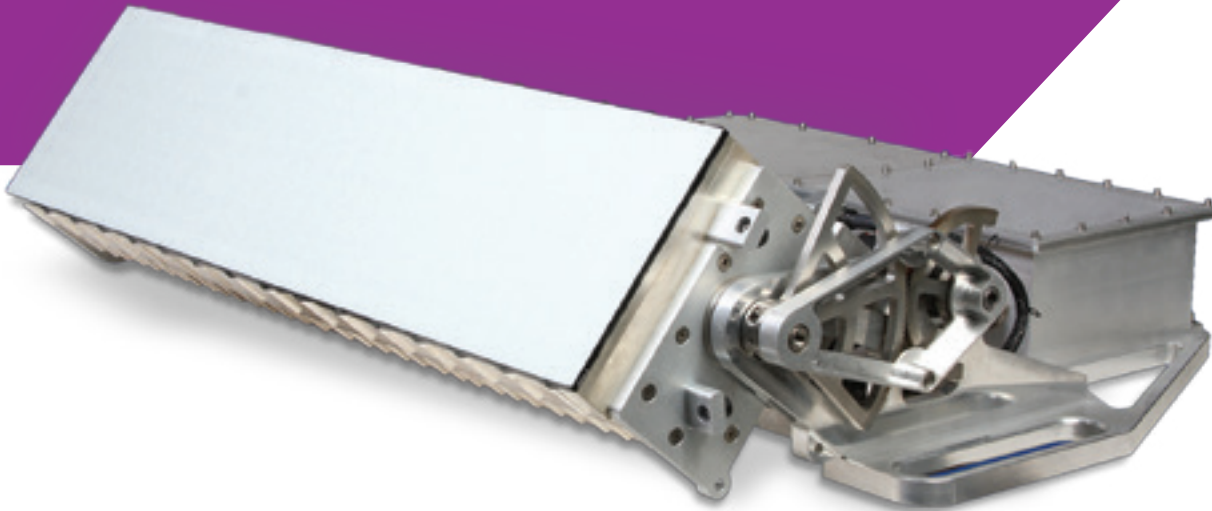
Thermopad®

- Passive solution for gain variation over temperature
- Operating frequencies up to 36 GHz
- Multiple attenuation and temperature shift values
- Footprint compatible with fixed attenuator series
- Standard HR (High Reliability) tested options available
- Surface mount and wire bondable packages



SATCOM

Systems



Gate-to-Gate Connectivity

Smiths Interconnect offers a complete line of network flexible Ku-band and Ka-band SATCOM antenna systems enabled by industry leading TECOM technology. Our SATCOM antenna systems provide non-stop gate-to-gate in-flight connectivity for commercial air transport, business jet and various military applications.

**High speed
network agnostic
connectivity**

Antenna Control Unit

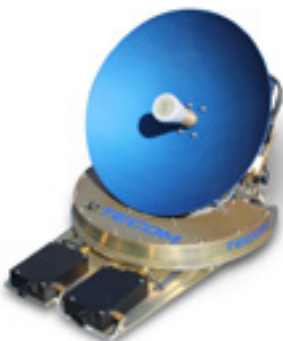
- Provides antenna positioning command and control
- Interfaces with aircraft for navigation information



Ka-Band Antenna Systems

KaStream® 5000 Series

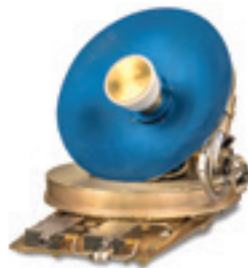
- Light weight fully integrated 3 LRU system
 - High gain antenna system with integrated High Power Transceiver (HPT)
 - Antenna Control Unit (ACU)
 - Modem agnostic (customer selected)
- Broad frequency coverage for commercial and military use
- Real time switchable dual polarization
- Operates on global Ka-band HTS satellite networks



Ku-Band Antenna Systems

KuStream® 5000 Series

- Light weight fully integrated 3 LRU system
 - High gain antenna system with integrated High Power Transceiver (HPT)
 - Antenna Control Unit (ACU)
 - Modem agnostic (customer selected)
- Full Ku-band spectrum coverage for military and commercial use
- Gate-to-gate connectivity
- Operates on global Ku-band networks and new HTS satellites



Ku-Band High Power Transceiver

- Qualified for commercial airborne use
- Modular BUC, BDC, SSPA, power supply and controller in compact package
- Optional internal reference ensures compliance when exposed to random vibration DO-160 profiles



Ku-Band Antenna Systems

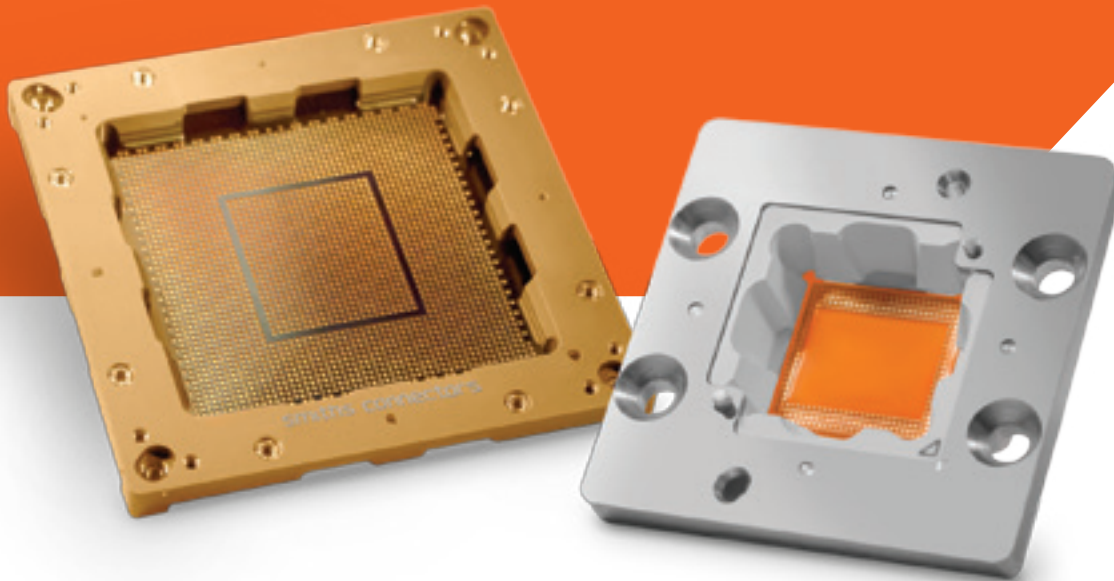
KuStream® 1000 Series

- Integrated 4 LRU system
 - Satellite Antenna Assembly (SAA)
 - Antenna Control Unit (ACU)
 - High Power Transceiver (HPT)
 - Modem agnostic (customer selected)
- Large Install Base
 - Over 1000 aircraft installations
 - More than 15 million flight hours
 - Commercial and military variants
- Market leader
 - Full Ku-band spectrum coverage for military and commercial use
 - Full compliance with stringent FCC regulatory standards
 - Gate-to-gate connectivity
 - Operates on global Ku-band networks and new HTS satellites



For commercial air transport, business jet and various military applications

Semiconductor Test



Best-in-Class

Smiths Interconnect's test socket and probe card solutions utilize IDI contact technology to ensure superior quality and reliability in semiconductor test applications. Our best-in-class engineering, development and technical expertise ensure support of automated, system level and development test platforms.

**Superior quality
and reliability
in semiconductor
test applications**

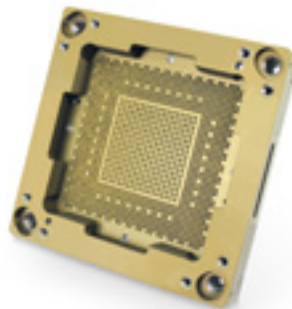
Replacement Spring Probes

- Available to support all Interconnect Test Sockets including DaVinci, Volta, Array and Celsius
- Long life cycle
- Manufactured with superior engineered materials
- Low and stable contact resistance
- High compliance
- Superior signal integrity



Test Sockets

- Extensive portfolio of spring probe, scrubbing and other contact technologies
- Variety of verification tools and design standards to ensure simultaneous engagement and alignment to both package sides
- DaVinci technology for high speed coaxial test
- Silmat® low profile elastomer contact technology
- Tri-Temperature testing capability with Celsius scrubbing contact technology
- High speed signal integrity solutions supporting most IC packages



World's most comprehensive offering of spring probe-based test technologies

WLCSP Probe Head

- Utilizing spring probe and other contact technologies
- Capable of testing 200µm and higher pitch
- High site-to-site test parallelism
- Superior signal integrity and high speed / RF testing capabilities
- Low and stable contact resistance
- Increased test throughput



Time & Frequency Systems



Emergency Response Systems

We provide timing and frequency solutions for the next-generation in emergency response systems, and more. Embedding the renowned TRAK technologies, our solutions offer accuracy, stability, and remote manageability that are critical for the success of the end user's applications.

**Solutions
offering accuracy,
stability,
and remote
manageability**

Distribution Systems

- Stand-alone and modular solutions
- Pulse rates, reference frequencies, and time codes
- Redundant and non-redundant configurations
- Low phase noise reference frequency distribution



Modular Systems

- Dual-redundant modular system
- For high reliability applications requiring uninterruptable 24-7 service
- Redundant GPS RX, high stability OCXO or rubidium, time and frequency generator, and NTP servers
- Six, 4-channel distribution module providing 24 outputs. Expansion shelf available



Tactical Global Positioning Systems (GPS)

- Compact, rugged enclosure
- Contains rubidium oscillator and low phase noise clean-up oscillator meeting frequency stability, and phase noise requirements of the military SATCOM system
- Remote configuration and monitoring via Ethernet and RS-232
- Standard C/A-Code GPS or optional SAASM GPS



GPS Clocks

- High performance, cost effective, small form factor
- High stability ovenised oscillator or optional rubidium oscillator
- AC and DC power inputs to meet power requirements
- Remote configuration and monitoring through Ethernet and RS-232



Network Time Protocol (NTP) Servers

- Designed for time synchronizing networks using IRIG-B as the time reference
- Accepts a fibre optic or wireline IRIG-B time code
- Time synchronization of SIPRNET and NIPRNET
- Remote configuration and monitoring via Ethernet and RS-232

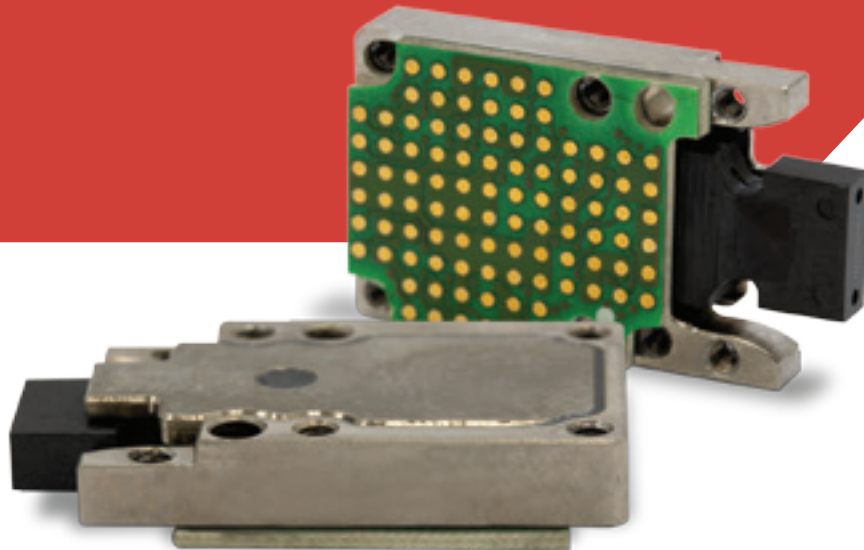


Time Code Processors

- Modular construction with over 100 module options
- Standard C/A-Code GPS or optional SAASM GPS
- Wide variety of outputs are available
- Remote configuration and monitoring is available through Ethernet and RS-232



Transceivers



Advanced Solutions

Embedded transceivers and transceiver modules with Reflex Photonics technology for advanced interconnect-based solutions. Targeting high-reliability interconnects where high data rate communication links, low SWaP as well as radiation resistance performance are required.

**Rugged
embedded
transceivers for
harsh environment
interconnect**

Embedded Optical Module

- Small: Less than 5 mm high (SMT version)
- 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 100°C
- Sensitivity: ≤ -12 dBm @ BER 10^{-12}
- Low power consumption: 100 mW/lane
- Proven: Thousands used in aerospace and defense applications



Embedded Transceiver

- 12 independent parallel optical lane
- Data rate: 10.3125 Gbps, 6.25 Gbps or 3.125 Gbps per lane
- Commercial operating temperature (0°C to 70°C)
- 100 mW/lane typical power consumption
- Card edge mountable
- Standard MPO/MPT interconnect
- Single 3.3 V power supply
- OM3 and OM4 multimode fibers supported
- Data protocol agnostic



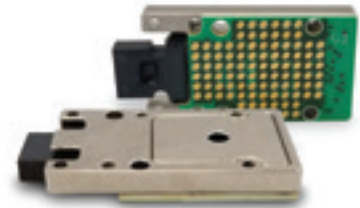
Industrial Transceiver

- Flexible height with LGA interposer
- Rugged RoHS electrical interface
- Screw-in optical module
- Standard MTP/MPO cable connection
- Robust, board-mounted optical module with reduced footprint
- Performance: up to 150G from 0°C to 85°C
- Low power consumption: 100 mW per lane



Radiation Resistant Transceiver

- Small: Less than 5 mm high
- Rugged: Withstand radiation doses >100 krad (Si) and qualified per MIL-STD 883 shock and vibration
- Expected life: Up to 20 years
- Cold start temperature: -55°C
- Performance: Up to 28 Gbps/lane
- Operating temperature: From -40°C to 100°C
- Sensitivity: ≤ -9 dBm @ BER 10^{-12}
- Power consumption: as low as 85 mW/lane (<10 pJ per bit)



High bandwidth,
low latency
and small
size, weight
and power in
differentiated
high reliability
applications

Capabilities

Smiths Interconnect's in-house capabilities encompass design, development, manufacturing and testing to respond quickly and accurately to customers' needs, and provide the most reliable connectivity solutions.

Engineering

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

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
- System Integration
- Validation Testing

Prototyping

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

Testing/Qualification

- Electrical Acceptance & LOT Test
- RF Testing Capabilities up to 325 GHz
- High Speed Digital
- Anechoic Chamber Testing
- ESS Environmental Qualification
- ESS Temperature, Shock & Vibration
- Metallurgical
- Real-Time X-Ray
- Near Field/Compact Antenna Range
- Thermal Vacuum
- High Power RF Testing

Locations



Connecting Global Markets

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

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*Smiths Interconnect, Inc. (SII), is the separate legal entity operating within the requirements of a Special Security Agreement (SSA) with Defense Security Services (DSS) of the United States.



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

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