

BOARD COMPONENTS

- Fixed Attenuators
- Temperature Variable Attenuators
- Terminations
- Resistors
- Signal Distribution

..... up to 50 GHz

COAXIAL COMPONENTS

- Fixed Attenuators
- Temperature Variable Attenuators
- Terminations
- Remote Terminations

..... up to 40 GHz

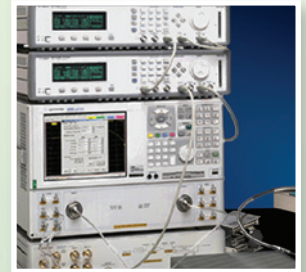
CABLE ASSEMBLIES

- High Performance Flexibles
- Test Assemblies
- Semi-Rigid/Semi-Flexibles
- Titan-Flex™

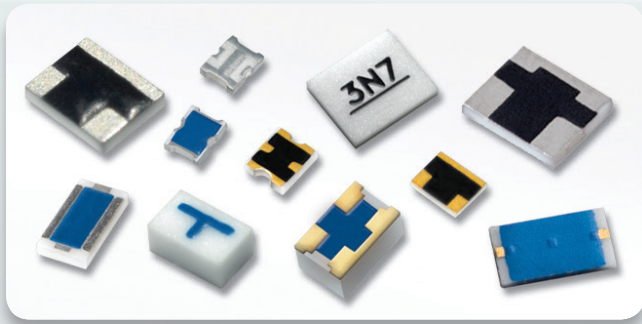
..... up to 65 GHz



smiths microwave



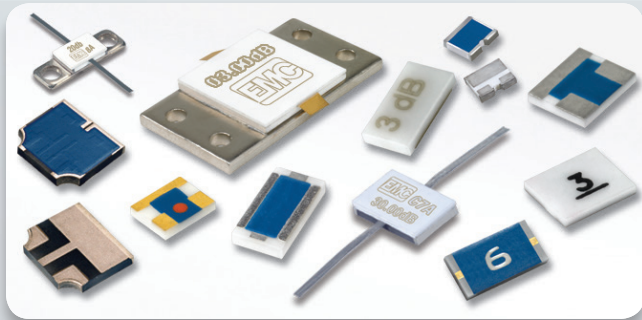
PASSIVE RESISTIVE COMPONENTS



Thermopad® Temperature Variable Attenuators

36 GHz SURFACE MOUNT OPTIONS

- Thermopad®s compensate for gain variation over temperature
- Totally passive with no signal distortion
- Superior broadband performance through 50 GHz
- Space and military qualified with 40 years of space heritage
- Available in many dB values and with various Temperature Coefficients of Attenuation (TCA)
- Available packages: planar, SMT, coaxial and wire bondable chip



Fixed Attenuators

40 YEARS SPACE PROVEN

- Optimized for small signal, high power, pulsed, and differential applications
- Select from 0 to 30 dB values in alumina, BeO and aluminum nitride
- Products for applications up to 50 GHz and 400 W.
- Custom dB values, tight tolerance, ½ dB steps offered
- High reliability and RoHS versions also offered
- Available packages: chip, tab & cover, flange mounted and coaxial models



Terminations

HIGH PERFORMANCE, LARGE SELECTION

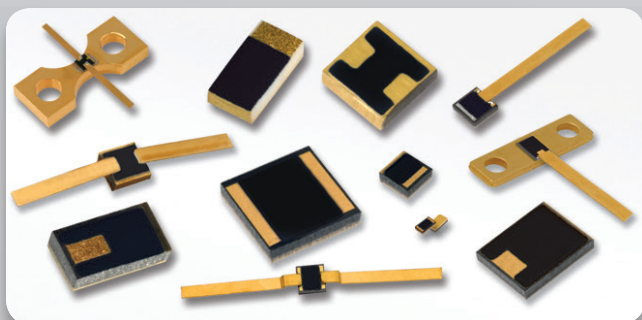
- Tuned circuits deliver the lowest VSWR for broadband applications
- Designs up to 1KW and 40 GHz
- RoHS, non-magnetic, low PIM, commercial and high-rel versions
- Large selection of chip styles for filters, combiners and isolator applications, including planar and SMT
- Available using alumina, BeO, and aluminum nitride substrates
- Surface mount, tab & cover, flange mounted, stripline flange, pill, coaxial and coaxial remote terminations



Resistors

HIGH PERFORMANCE, LOW CAPACITANCE

- Designs optimized to minimize parasitic capacitance
- Wide range of resistance values, from 1 ohm to 1K ohms
- Available in RoHS, non-magnetic or low PIM versions
- Resistance cards up to 1,000 ohms per square
- Designs up to 1KW and 40 GHz
- Available packages: surface mount chips, tab & cover, flange mounted and rod



Diamond Rf Resistives®

INDUSTRY HIGHEST POWER & FREQUENCY, SMALLEST SIZE

- Attenuators, terminations and resistors built on CVD Diamond substrates – the best thermal conductor in the world
- Diamond Rf® products offer the best power-to-size ratio and lowest parasitic capacitance for high-frequency performance up to 45 GHz
- Available in easy-to-use packages include chips, flange mount and tabbed (straight and formed)
- Standard chip footprints range from 0402 (with 20W power handling) to 1310 (with 125W power handling)
- Size and weight reduction in space and high-rel applications

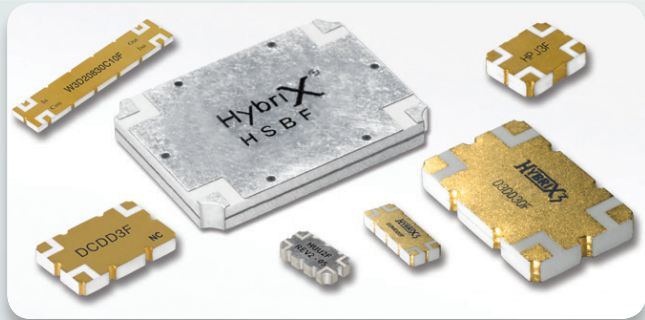
COAXIAL, SIGNAL DISTRIBUTION & CUSTOM COMPONENTS



Coaxial Components

SAME GREAT COMPONENTS IN COAX PACKAGES

- Excellent high frequency and wideband performance
- Robust construction - shock and vibration resistant
- Products available for small signal and high power applications
- Superior attenuation accuracy and VSWR from DC to 40 GHz
- Terminations available with SMA, 3.5 and 2.9 mm interfaces
- High reliability applications supported



HybriX® Couplers

HIGH FREQUENCY LEADER

- Available in surface-mount PTFE and ceramic packages
- Leader in high frequency coupler solutions – standard products up to 18 GHz available
- Multi-octave models for wideband applications; High power (up to 600W) models for broadcast systems
- Large selection of high performance hybrid, 5-dB, directional couplers and Doherty combiners
- In-house multipaction testing capability



Other Signal Distribution

ONE-STOP PASSIVE SOLUTION PROVIDER

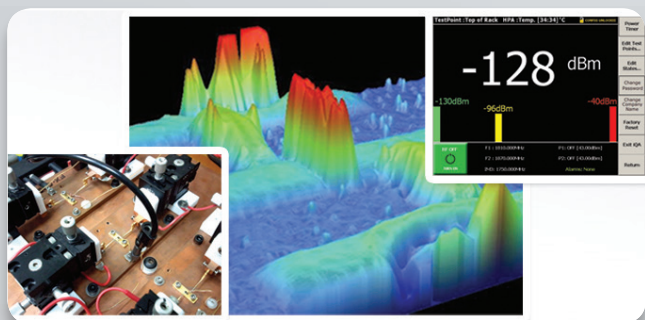
- Large selection of passive SMT components: crossovers, Wilkinson dividers, resistive power dividers, power samplers
- High-isolation crossovers allow for RF-RF or RF-DC signal path crossing on a single layer PCB
- 2, 3 and 4-way Wilkinson dividers available 0.8 GHz to 18 GHz
- 2, 3 and 4-way resistive power dividers provide broadband coverage from DC to 12 GHz
- Broadband power samplers in coupling values from 10 to 30 dB



Medical / MRI

LIVE SAVING IN ACTION

- Non-Magnetic, high power resistors, terminations, attenuators
- 90° and 180° Couplers available in a low profile, SMD package for applications at 1.5T, 3T, 7T and 9.4T
- Reduced size and assembly time over lumped element designs, no tuning required
- No distortion evident within intense magnetic environments



Innovative Solutions

EXTENDING THE LIMIT OF PASSIVE TECHNOLOGY

- Low PIM terminations offer industry-leading performance (< -130 dBc with 2 x 43 dBm inputs) in high-power flange and surface mount packages
- Custom advanced designs provide cutting-edge resistive and signal distribution solutions from DC to 50 GHz for commercial wireless and high-rel applications
- Over 40 years of experience in thin/thick film technology, component thermal management, and temperature compensation techniques

MICROWAVE CABLE ASSEMBLIES



Lab-Flex® Cable Assemblies to 65 GHz

FIELD PROVEN

- Low loss dielectric construction provides up to 40% less loss
- Custom braids that provide superior mechanical strength and shielding greater than 90 dB
- Stainless steel connector constructions that are also water resistant
- Wide variety of protective coverings for demanding environments
- Employs our unique Solder Sleeve connector design for superior connector retention
- Stranded center conductor version Lab-Flex®S, up to 65 GHz



Lab-Flex® AF Cable Assemblies to 40 GHz

HARSH ENVIRONMENT

- Low loss flexibles for demanding airborne, shipboard & ground-based environments
- Triple-shielded cable design protected by an abrasion resistant jacket
- Design has been tested and qualified to meet or exceed MIL-T-81490 & MIL-C-87104
- Redundant sealing system design for both cable and connectors



Lab-Flex® Q Cable Assemblies to 40 GHz

SPACE APPLICATION DESIGNS

- All assemblies meet stringent NASA outgassing requirements.
- Space Cable designs have vented connectors for Thermal Breakdown and Multipaction
- Tefzel Jacket material for maximum radiation resistance
- 78% to 83% velocity ePTFE dielectric core for low loss
- High Reliability Testing Capability



ASR Cable Assemblies to 50 GHz

FOR PRECISION TEST MEASUREMENTS

- High performance VNA Test Port assemblies
- ASR maintains its mechanical configuration
- ASR-F is a flexible alternative to the original ASR design
- Available with 2.4mm & 2.92mm NMD connectors
- Can be supplied individually or in phase-matched pairs



Titan-Flex™ Cable Assemblies to 18 GHz

MECHANICAL STRENGTH

- Upgrade your standard RG cables with cost effective Titan-Flex™
- Robust solder termination design for superior electrical performance
- Improved mechanical strength and durability with steel center conductor
- 2 flat braids and a sinter PTFE dielectric for better crush resistance
- Fitting .141 S/R connector designs, electrical performance is consistent and optimized to 18 GHz

CAPABILITIES

Beyond our extensive list of products, we also offer many solution-based capabilities, shown below.

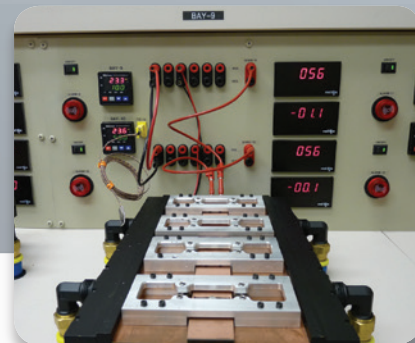
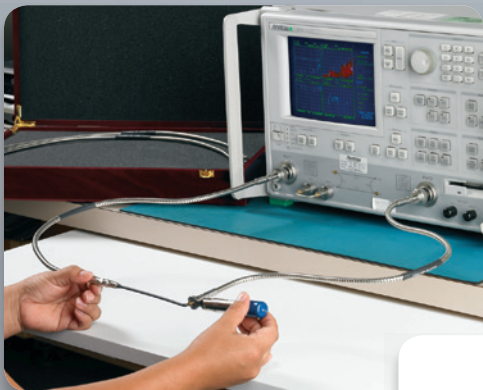
Whether your challenges are related to electrical performance, process, manufacturing or purely mechanical, we can help you solve them.

CABLE ASSEMBLIES

- Solution engineering for your unique application (Electrical & Mechanical)
- Numerous cable jacket coverings
- Customized "Battlefield" construction
- High-volume, cost-effective assemblies
- Space qualified lightweight assemblies
- Ruggedized airborne assemblies
- Low-PIM assemblies
- Non-Magnetic assemblies
- Custom phase matching (Pairs & Sets)
- Barcode marking

RF COMPONENTS

- Custom engineered solutions
- Applications up to 50 GHz
- Thick & thin film technologies
- High reliability testing
- Custom lead forming
- Welded leads
- Evaluation boards
- Performance tuning
- Modeling data
- Odd impedances
- Low capacitance designs
- Peak power designs
- Integrated passive components
- Custom design kits
- Non-magnetic products
- Laser marking
- Build to print





8851 SW Old Kansas Ave.
 Stuart, FL 34997, USA
 +1 772-286-9300
 +1 800-544-5594
 Email: sales@emc-rflabs.com
www.emc-rflabs.com
 EMC CAGE Code: 24602
 FRFL CAGE Code: 2Y194
 AS 9100, Nadcap, ISO 9001 & 14001 and OSHAS 18001 Certified

EMC Technology & Florida RF Labs, a Smiths Microwave business, is an internationally recognized leader in the development and manufacturing of thin and thick film RF and Microwave resistive components, signal distribution products, and cable assemblies.

Smiths Microwave is a leading provider of components, sub-assemblies, antennas and systems solutions, primarily for defense and aerospace applications, and solutions that test, filter and process high-frequency signals for wireless telecommunication networks. As a family of brands, Kaelus, Radio Waves, TECOM, TRAK, LORCH, TRAK Limited, Millitech, EMC Technology and Florida RF Labs provide exacting solutions for antenna systems for the military and commercial aerospace, transceivers, frequency sources, timing systems, component applications, and a wide range of innovative RF and Microwave solutions for the wireless telecommunications sector.

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