

SUNSTAR商斯达实业集团是集研发、生产、工程、销售、代理经销、技术咨询、信息服务等为一体的高科技企业，是专业高科技电子产品生产厂家，是具有10多年历史的专业电子元器件供应商，是中国最早和最大的仓储式连锁规模经营大型综合电子零部件代理分销商之一，是一家专业代理和分销世界各大品牌IC芯片和电子元器件的连锁经营综合性国际公司。在香港、北京、深圳、上海、西安、成都等全国主要电子市场设有直属分公司和产品展示展销窗口门市部专卖店及代理分销商，已在全国范围内建成强大统一的供货和代理分销网络。我们专业代理经销、开发生产电子元器件、集成电路、传感器、微波光电元器件、工控机/DOC/DOM电子盘、专用电路、单片机开发、MCU/DSP/ARM/FPGA软件硬件、二极管、三极管、模块等，是您可靠的一站式现货配套供应商、方案提供商、部件功能模块开发配套商。专业以现代信息产业（计算机、通讯及传感器）三大支柱之一的传感器为主营业务，专业经营各类传感器的代理、销售生产、网络信息、科技图书资料及配套产品设计、工程开发。我们的专业网站——中国传感器科技信息网（全球传感器数据库）www.SENSOR-IC.COM 服务于全球高科技生产商及贸易商，为企业科技产品开发提供技术交流平台。欢迎各厂商互通有无、交换信息、交换链接、发布寻求代理信息。欢迎国外高科技传感器、变送器、执行器、自动控制产品厂商介绍产品到中国，共同开拓市场。本网站是关于各种传感器-变送器-仪器仪表及工业自动化大型专业网站，深入到工业控制、系统工程计 测量、自动化、安防报警、消费电子等众多领域，把最新的传感器-变送器-仪器仪表买卖信息，最新技术供求，最新采购商，行业动态，发展方向，最新的技术应用和市场资讯及时的传递给广大科技开发、科学研究、产品设计人员。本网站已成功为石油、化工、电力、医药、生物、航空、航天、国防、能源、冶金、电子、工业、农业、交通、汽车、矿山、煤炭、纺织、信息、通信、IT、安防、环保、印刷、科研、气象、仪器仪表等领域从事科学研究、产品设计、开发、生产制造的科技人员、管理人员、和采购人员提供满意服务。我公司专业生产、代理、经销、销售各种传感器、变送器、敏感元器件、开关、执行器、仪器仪表、自动化控制系统：专业从事设计、生产、销售各种传感器、变送器、各种测控仪表、热工仪表、现场控制器、计算机控制系统、数据采集系统、各类环境监控系统、专用控制系统应用软件以及嵌入式系统开发及应用等工作。如热敏电阻、压敏电阻、温度传感器、温度变送器、湿度传感器、湿度变送器、气体传感器、气体变送器、压力传感器、压力变送、称重传感器、物（液）位传感器、物（液）位变送器、流量传感器、流量变送器、电流（压）传感器、溶氧传感器、霍尔传感器、图像传感器、超声波传感器、位移传感器、速度传感器、加速度传感器、扭距传感器、红外传感器、紫外传感器、火焰传感器、激光传感器、振动传感器、轴角传感器、光电传感器、接近传感器、干簧管传感器、继电器传感器、微型电泵、磁敏（阻）传感器、压力开关、接近开关、光电开关、色标传感器、光纤传感器、齿轮测速传感器、时间继电器、计数器、计米器、温控仪、固态继电器、调压模块、电磁铁、电压表、电流表等特殊传感器。同时承接传感器应用电路、产品设计和自动化工程项目。

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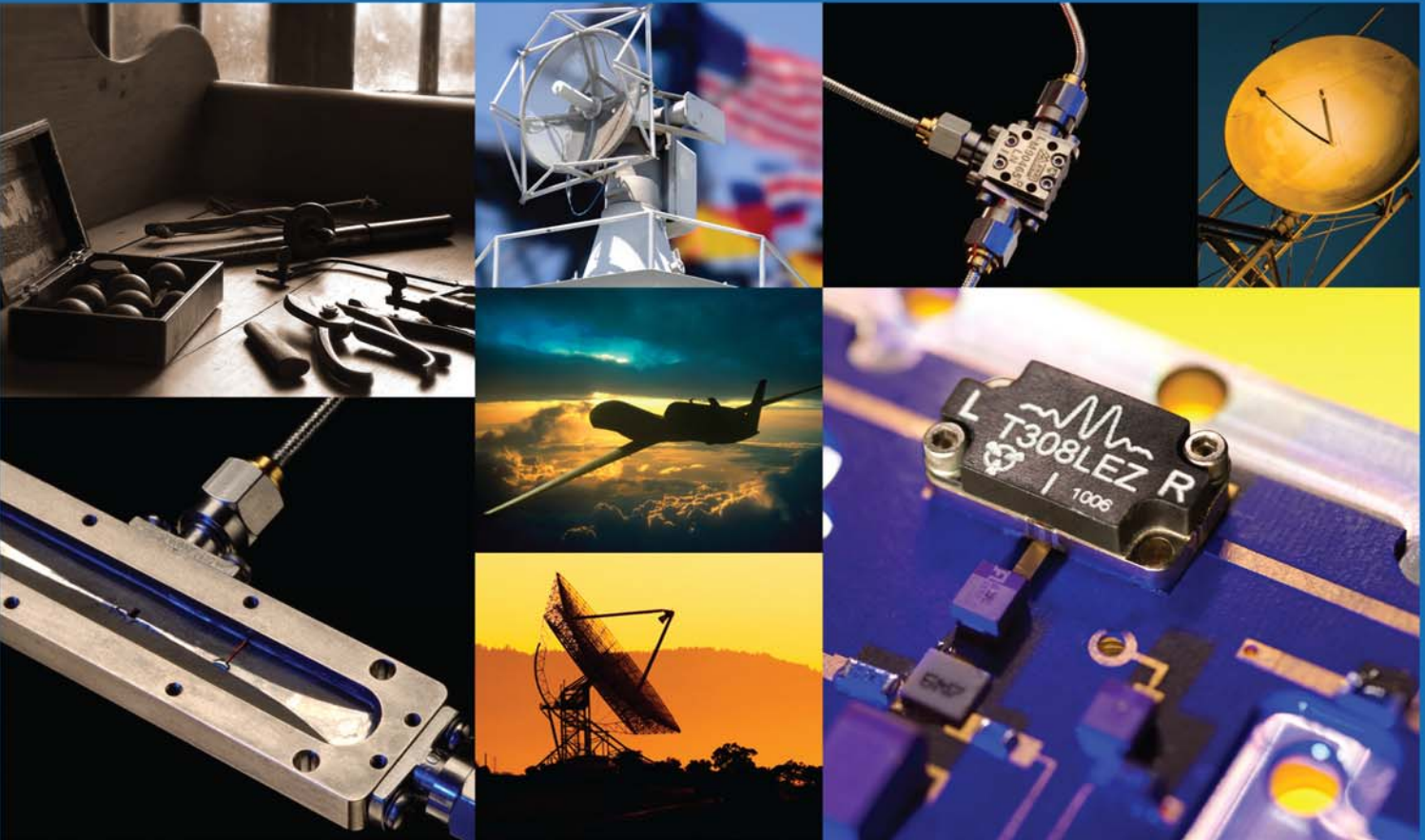
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Short Form Product Catalog

SINCE 1991 – MARKI MICROWAVE COMPONENTS DELIVER SUPERIOR PERFORMANCE .



GENERAL INFORMATION

Company Description

For nearly two decades, Marki Microwave, Inc., has been a leading manufacturer of microwave and millimeter wave components. Marki Microwave is recognized as the industry's premier supplier of high-performance mixers. The company, founded by Ferenc A. Marki, combines a dedication to engineering excellence and innovation with a practical approach to manufacturing to meet the most demanding requirements of both the military and commercial markets. With his son, Christopher F. Marki, Ph.D., Mr. Marki continues to expand the Marki Microwave catalog to include product offerings in the areas of adapters, amplifiers, bias tees, couplers, DC blocks, filters, multipliers, power dividers, and more.

Markets Served

Whether building catalog-off-the-shelf items or unique custom designs, Marki Microwave applies the same high standards of workmanship to ensure superior performance and customer satisfaction.

- Microwave radio transmitters and receivers
- Broadband wireless telecommunications
- Wideband digital communications
- Satellite / space systems
- Phased-array radar
- Military surveillance equipment
- Test and measurement equipment
- Medical / industrial research and development
- Major U.S. and international universities

Technologies

Marki Microwave uses state-of-the-art modeling software to aid in the seamless design and production of its products. Manufacturing employs precision micro-solder and wire-bonding assembly. Test facilities include state-of-the-art equipment for measurement from DC to 67 GHz. All assembly, inspection, and testing is done onsite to assure uniformity and repeatability of performance.

Facilities

Marki Microwave occupies 10,000 square feet of office and R&D space in Morgan Hill, California. All sales, marketing, engineering, and manufacturing efforts are conducted at this convenient Silicon Valley location.

Product Lines

Marki Microwave's mission has always been to provide customers with elegant and reliable solutions and rapid lead times. Marki's constantly expanding product lines and packaging innovations, such as the EZ and "flatpack" surface mount packages, reflect our commitment to addressing customers' needs with ingenuity and resourcefulness. Today our lines encompass a range of products including:

Mixers

- High IP3 T3 Series – Mixers for the 21st Century
- Double Balanced
- Triple Balanced
- IQ, SSB, and Image Reject
- Integrated Amplifier-Mixer Assemblies

Amplifiers

- Broadband Driver Amplifiers
- Positive Bias Only Driver Amplifiers
- Fiber-Optic Driver Amplifiers

Multipliers

- Doublers and Amplified Doublers
- Amplified Triplers
- Amplified Quadruplers

Couplers

- Directional Couplers
- Dual-Directional Couplers
- Quadrature Hybrids

Power Dividers

- Wilkinson (3dB) Power Dividers
- Resistive Power Dividers

Filters

- Lowpass, Highpass, and Bandpass
- Wavefade™ Lowpass Filters
- Diplexers

DC Blocks & Bias Tees

- Connectorized Bias Tees
- Surface Mount Bias Tees
- Low Loss Coaxial DC Blocks

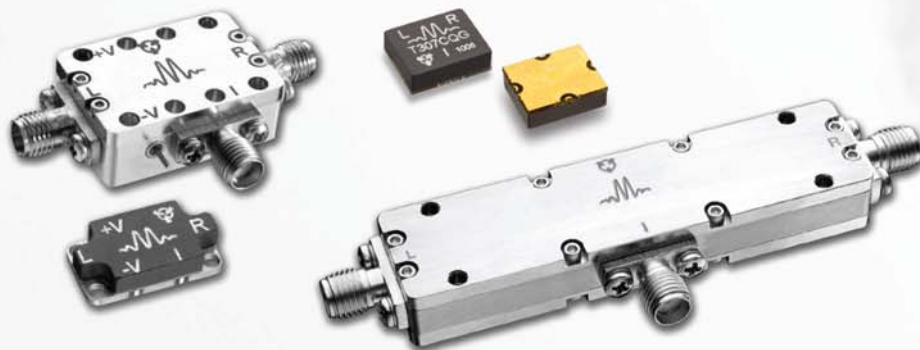
Adapters

- "Jacket" Coaxial Adapters
- Right Angle Adapters

MARKI MICROWAVE IS CERTIFIED TO ISO 9001:2008.

ACTIVE COMPONENTS

MIXERS



Marki Microwave features the largest selection of broadband, high-performance RF, microwave, and millimeter wave mixers in the world. Marki mixers are used extensively in a variety of military and commercial applications, owing to their superior performance, quality craftsmanship, and field-proven excellence. While our competitors offer 1970s technology, Marki engineers continue to push the boundaries of mixer technology with the goal of providing mixers for the 21st century.

Marki mixers are categorized into four major groups: double-balanced mixers, triple-balanced mixers, T3 mixers, and IQ and IR mixers. Each of our mixer families is characterized by a unique set of attributes to allow customers the widest range of choices for their diverse applications.

Double-balanced mixers are, historically, the workhorse mixers of the microwave industry. Marki M1, M3, M8, and M9 mixers are all double balanced and therefore offer excellent performance in terms of bandwidth (DC to 65 GHz), isolation, DC capable IF, and low required LO drive.

The M2 family of triple-balanced mixers is designed to provide flexible bandwidth coverage for all three mixer ports. By incorporating innovative construction techniques, Marki M2 mixers remain among the industry's most versatile, ultra-broadband mixers.

Until 2004, virtually all commercially available mixers were adaptations of legacy designs developed in the 1960s and 1970s. The introduction of the Marki "Two-tone Terminator" (T3) mixer marked a dramatic advance in mixer design. Marki T3 mixers provide superior performance in terms of mixer nonlinearity (i.e., 1 dB compression, IIP3, etc.), with the bandwidth flexibility of legacy triple-balanced mixers.

Available in convenient surface mount packages, T3 mixers are used in systems with challenging linearity requirements and those requiring flexible broadband frequency coverage.

Finally, Marki offers superior IQ, IR, and SSB mixers. These advanced circuits come in a variety of configurations and can be customized for many applications.



AMPLIFIERS



Marki Microwave offers a wide selection of connectorized and surface mount amplifiers ranging in frequency from 40 kHz to 50 GHz. The A and AP (positive bias only) series of Marki amplifiers serve as broadband general purpose amplifiers from 5 MHz to 30 GHz. A and AP series amplifiers make excellent square-wave generating amplifiers and are recommended for use with T3 mixers.

Marki Microwave also offers a line of catalog and custom fiber-optic modulator drivers supporting data rates up to 43 Gb/s. These amplifiers are designed with our exclusive, ultra-broadband bias tees to provide low frequency coverage down to 40 kHz.



MULTIPLIERS



Marki Microwave offers a complete line of doublers, triplers, and quadruplers. All multipliers are constructed using silicon Schottky diodes, resulting in intrinsically lower phase noise performance compared to noisy GaAs devices. Our doublers and quadruplers are built using highly symmetric, monolithic diode bridge quads which provide cutting edge performance in terms of broadband coverage (as much as 25:1 bandwidth ratios) and superior fundamental suppression.

Additionally, Marki offers a full selection of active multipliers that provide input/output power flexibility. Most multiplier products are available in convenient surface mount packages.

PASSIVE COMPONENTS

COUPLERS



By combining a proprietary design and optimization algorithm with time-honored construction techniques, Marki Microwave manufactures microwave directional couplers and quadrature hybrids with bandwidth ratios exceeding 50:1. Marki tri-plate stripline couplers and quadrature hybrids boast industry-leading directivity and coupling flatness.

For customers who require low insertion loss, Marki offers a line of compact coaxial couplers (e.g., C-0250) that exhibit extremely low loss and high directivity through 50 GHz. For customers with specific requirements not satisfied by the catalog products, we also offer coupler customization services.



POWER DIVIDERS



Marki Microwave offers a large variety of catalog and custom Wilkinson-type 3 dB power dividers and resistive power dividers in both connectorized and surface mount packages.

Wilkinson-type power dividers provide 3 dB power division with intrinsic isolation between output ports. All our Wilkinson designs are optimized using state-of-the-art modeling software to provide outstanding isolation and VSWR performance. Popular models include the PD-0220 (2-20 GHz) power divider and the PD-0434SM (4-34 GHz) surface mount power divider. Custom models are available upon request.

For applications requiring ultra-broadband performance, we offer a full line of resistive power dividers. These power dividers operate from DC to as high as 40 GHz with excellent insertion loss and VSWR characteristics.

FILTERS



Marki Microwave manufactures a huge selection of catalog and custom microwave filters. Filter types offered include bandpass filters, lowpass filters, highpass filters, Wavefade™ filters, and diplexers.

Most Marki catalog filters are available from stock and can be delivered with extremely short lead times, a significant advantage for the busy engineer. All filters are designed with the intention of minimizing tedious tuning steps and reducing the overall cost without sacrificing performance. Moreover, custom designs are always available for customers with specific requirements not satisfied by the catalog options.

In addition to the standard bandpass, lowpass, and highpass filter lines, Marki also offers two types of absorptive filters.



BIAS TEES



The Wavefade™ lowpass filter is assembled using proprietary techniques that enable us to achieve the extremely flat group delay seen only in Bessel filters. Wavefade™ filters are based on a unique quasi-infinite element technique resulting in superior performance and design flexibility up to and even beyond 30 GHz. Wavefade™ filters are ideal for pulsed and digital applications.

A comprehensive line of connectorized and surface mount diplexers is also available. These versatile devices are commonly used in signal multiplexing applications and applications requiring non-reflective lowpass or highpass filtering.

As any experienced engineer knows, the simple bias tee circuit is surprisingly complex to build at microwave frequencies. To solve this perplexing design problem, Marki Microwave offers a complete line of connectorized and surface mount bias tees from 40 kHz to 50 GHz.

Connectorized bias tees exhibit extremely low insertion loss, flat group delay (critical for pulsed and digital applications), and high current handling capability. The compact surface mount bias tees are unique in the industry and offer broadband frequency capability running from 500 kHz to greater than 30 GHz. Both leaded and lead-free surface mount bias tees are available to satisfy both the RoHS compliant and military markets.

ADAPTERS



Marki Microwave offers several coaxial adapter options including right angle adapters and “jacket” coaxial adapters. Our RA series of right angle adapters is constructed using a single coaxial cable to provide excellent insertion loss and VSWR performance through 50 GHz. Moreover, all right angle adapters can be custom configured to satisfy any combination of 2.92 mm and 2.4 mm connectors requested by the customer.

Marki jacket adapters are convenient, high performance 50 Ω coaxial adapters designed specifically for ease of use. With their rugged steel outer jacket, these adapters can be loosened effortlessly even when components are over-tightened. All jacket adapters come in user-specified combinations of 2.92 mm and 2.4 mm connectors.



2007-10

Expanding product lines:

Christopher F. Marki, Ph.D., joins the operation as Director of Research to develop new and complementary product lines.

Product launches include:

Wavefade™ Filters, Low-Pass Filters
High-Pass Filters, Band-Pass Filters
Broadband Power Dividers
Directional/Quad Hybrid Couplers
Dual-Directional Couplers, plus
Diplexers and Adapters



2006

ISO 9001:2000 certification
(current certification ISO 9001:2008)

2005

Volume production of
Surface Mount Bias Tees



2004

The T3 - the Mixer for the 21st Century!

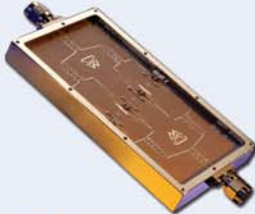


2003

Revolution in microwave surface mount
packaging with the "EZ" package

2002

4-lag correlator for ASIAA to
detect "big bang" radiation



2000

Purchase of 10K ft² space for new
headquarters in Morgan Hill, CA



1998

Support for U.S. Army Longbow
Missile Program with
high-performance carrier mixer

1993

Entrance into microwave telecom
market with unique image reject
converter design



1991

The founding of Marki Microwave by
Ferenc A. Marki



PERFORMANCE

Marki Microwave's mission is to exceed our customers' expectations by providing industry leading performance, reliability, and customer support. By combining time-honored fabrication and assembly techniques with a modern design approach, we are able to push the technological boundaries of broadband RF and microwave components into the 21st century. With proprietary innovations such as our T3 mixer line and our directivity-optimized directional couplers, we seek to provide the most comprehensive selection of high-performance microwave components in the world.

RELIABILITY

Our strength lies in our stability and adherence to proven manufacturing practices. In this modern world of outsourcing and commodity pricing, Marki Microwave has prospered by retaining all design, manufacturing, and sales in the same Morgan Hill, California facility since 2000. In this manner our products are maintained at the highest level of performance and workmanship.

SUPPORT

Our primary goal is to make our customers successful. Going forward, we will continue to expand our product lines to offer more components in surface mount and ROHS compliant packaging. We will also continue to expand our Passive Component offerings and high IP3 mixer lines. As always, our design staff is eager to help our customers solve their most difficult challenges. Your impossible challenge today leads to tomorrow's innovations.

Ferenc A. Marki, President and Founder

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