

OVERVIEW



RF & MICROWAVE PRODUCTS

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www.nardamicrowave.com

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This booklet presents an overview of Narda's RF & Microwave products. Details and specifications can be found at www.nardamicrowave.com or in the latest printed catalog...the most comprehensive in the industry.



Off-The-Shelf Catalog Products

We build our catalog products to an industry forecast and inventory over 1000 different models. Most models are in stock, and if not, are available on a defined schedule.

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Custom Engineered Components & Networks

In addition to providing off-the-shelf catalog products, we have been supporting customers for decades with custom products.

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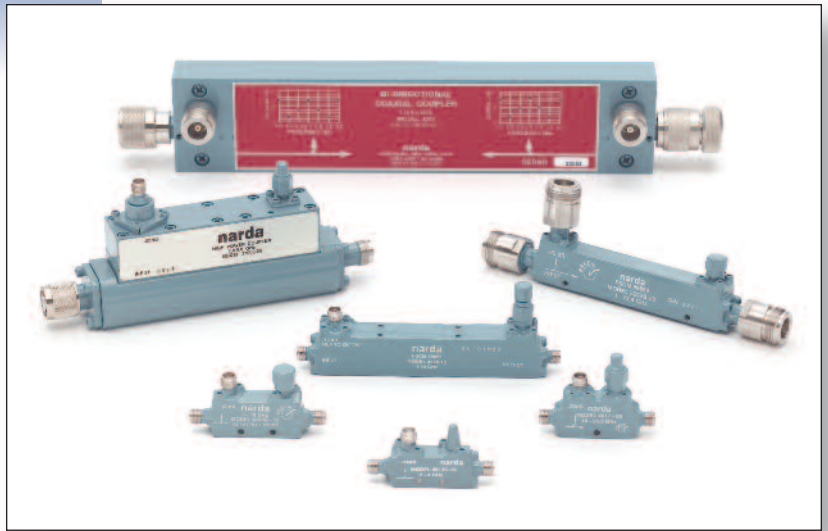
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COUPLERS

- Millimeter Wave Ultra-Broadband Couplers
 - Models covering 18 to 40 GHz, 1 to 40 GHz and 1 to 60 GHz
- Miniature SMA Couplers
 - .5 to 26.5 GHz, octave, multi-octave and maximally flat models
- Type N Broadband Directional Couplers
 - .25 to 12.4 GHz, octave, multi-octave and maximally flat models
- Type N Dual Directional Reflectometer Couplers
 - Multi-octave bands from .05 to 8 GHz
 - High power, high directivity



- High Power Directional Couplers
 - Covering 2 to 8 GHz, 2 to 18 GHz, 6 to 18 GHz bands
 - Power levels to 1000 W CW
- Economical Couplers for Cellular and PCS Applications

POWER DIVIDERS & HYBRIDS

- Wireless Band Power Dividers/Combiners
 - 800 to 2500 MHz, 2-way to 16-way modules
- SMA 3-Way Power Dividers
- SMA 2-Way and 4-Way Power Dividers
 - Octave, multi-octave units in .5 to 26.5 GHz bandwidths
- Multi-Octave Type N Power Dividers
 - 2 to 8 GHz, 6 to 8 GHz and 2 to 18 GHz bandwidths
- Ultra-Broadband SMA Power Dividers
 - .5 to 6 GHz, .5 to 18 GHz bandwidths, 2, 4, 8-way
- SMA and Type N Multi-Octave 90 and 180 Hybrids



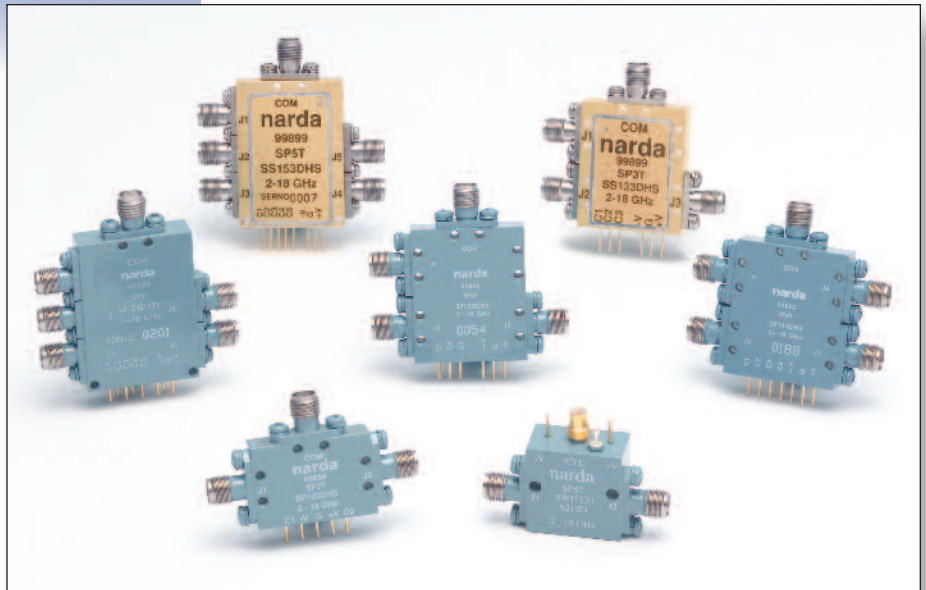
- Specialized Devices for High Power Dividing and Combining Operations

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PIN SWITCHES

- PIN Switches
 - 0.5 to 18 GHz
 - SPST to SP6T, transfer
 - Reflective and absorptive
 - Integral drivers
- High-Speed Switched Bit Attenuators
- Switched Filter Banks
- Custom Switches
 - Up to 26.5 GHz
 - SPST to SP25T
 - High power switches
 - Full military specifications
 - Mil Std 883 screened



MECHANICAL SWITCHES

- SEM Series – Stocked Electro Mechanical Switches
 - DC to 18 GHz
 - SPST to SP6T, transfer
 - Reflective and absorptive
 - Integral drivers
- Standard Custom Switches
 - DC to 26.5 GHz
 - SP2T to SP12T, transfer
 - Wide range of options



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ATTENUATORS

- Type N Fixed Coaxial Attenuators
 - Frequency range: DC to 18 GHz
 - Power: 2 or 5 W (average)
 - Choice of attenuation values up to 50 dB
- Miniature Fixed Attenuators
 - Frequency range: DC to 40 GHz
 - SMA and 2.9 mm connectors
 - Attenuation: up to 60 dB
- Type N High & Medium Power Attenuators
 - Frequency range: DC to 18 GHz
 - Attenuation: up to 30 dB
 - Power: up to 150 W average
- Thumbwheel & Panel Mount Step Attenuators
 - Frequency range: DC to 18 GHz
 - Type N or SMA female connectors
 - Attenuation: up to 69 dB
 - 1 dB or 10 dB Increments



- Low Cost Step Attenuators
 - Frequency range: DC to 2.5 GHz
 - Attenuation: 0 to 10 dB 1 dB steps, 0 to 50 dB 1 dB steps, 0 to 70 dB 10 dB steps
- Variable Attenuators
 - Frequency range: 4 to 26 GHz
 - Connectors: SMA or Type N
 - Attenuation: up to 35 dB

TERMINATIONS

- Millimeter Wave Fixed Termination
 - Frequency range: DC to 50 GHz
 - Connector 2.9 mm
- SMA Coaxial Fixed Termination
 - Frequency range: DC to 26.5 GHz
 - Power: up to 10 W average
- Type N Coaxial Fixed Termination
 - Frequency range: DC to 18 GHz
 - Power: up to 500 W average



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ADDITIONAL PASSIVE COMPONENTS

Circulators & Isolators



DC Blocks



Adaptors



Detectors



Phase Shifters



Standard Gain Horns

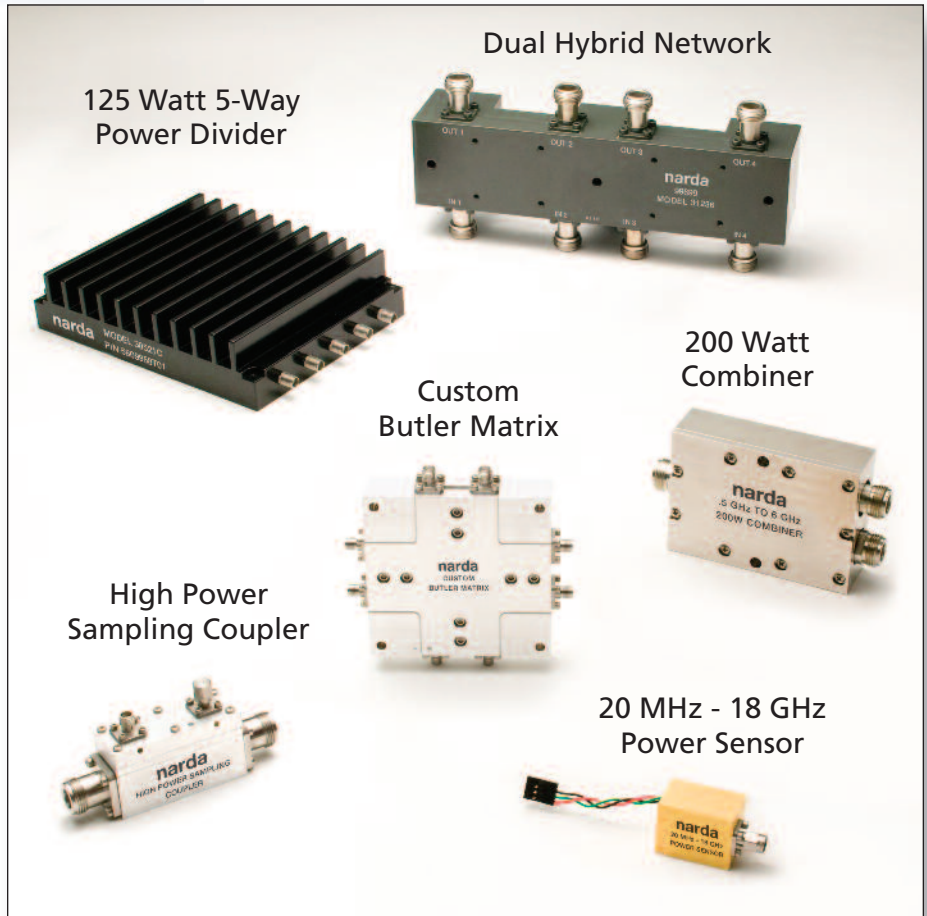


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CUSTOM ENGINEERED COMPONENTS & NETWORKS

In addition to providing off-the-shelf catalog products, Narda has been supporting customers for decades with custom-engineered solutions. The most mutually beneficial solution (for the customer and Narda alike) is the selection of a catalog product; however, we continue to support our customers when special models are required. It is not always practical to provide a custom product for a small-quantity and one-time requirement. Product specifications that involve a reasonable first-order quantity and follow-up potential are welcomed.



ENVIRONMENTAL PERFORMANCE

Environmental specifications for Stripline Directional Couplers, Attenuators, and Power Dividers as applicable.

| Parameter | Specification |
|-----------------------|---|
| Operating Temperature | -54 to +105°C |
| Storage Temperature | -55 to +125°C |
| Humidity | Per MIL-STD-202F, method 103B, condition B (96 hours at 95% R.H.) |
| Shock | Per MIL-STD-202F, method 213B, condition J (30G, 11 msec) |
| Altitude | Per MIL-STD-202F, method 105G, condition B (50,000 feet) |
| Vibration | Per MIL-STD-202F, method 204D, condition B (.06" double amplitude or 15G, whichever is less) |
| Thermal Shock | Per MIL-STD-202F, method 107D, condition A (5 cycles) |

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MULTIFUNCTIONAL ASSEMBLY TECHNOLOGY

Ultimate MICSM

The integration of microwave hybrid technology with multilayer printed circuit boards which incorporate advanced digital devices.

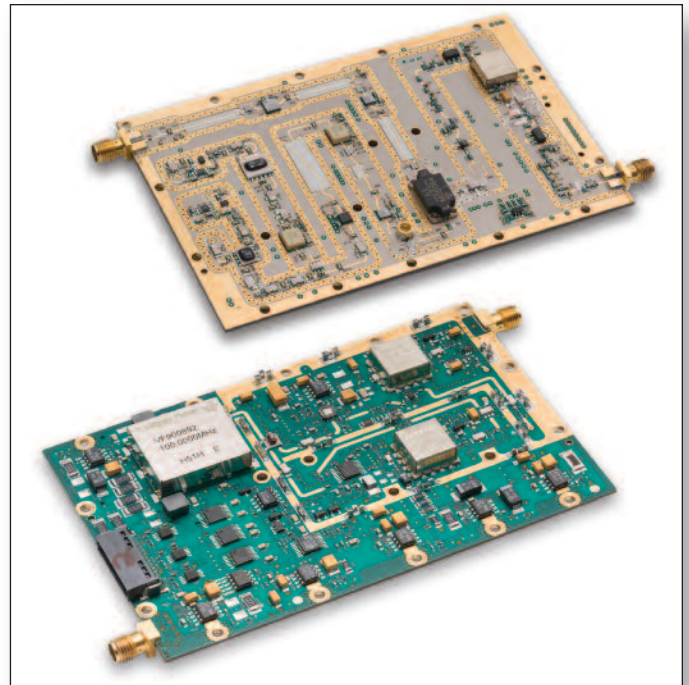
- Very Dense Integration of Microwave, Analog and Digital Functions
- Incorporation of FPGAs for Signal Processing and Temperature Compensation
- Improved Performance and Reliability



Ultimate SMTSM

Low cost SMT assemblies using single board with microwave circuits on one side and control circuits and other functions on reverse side.

- VIAS Provide Isolation and Minimize Costly Metal Work
- Single Board Construction
- Low Labor Content
- Low Cost Volume Production

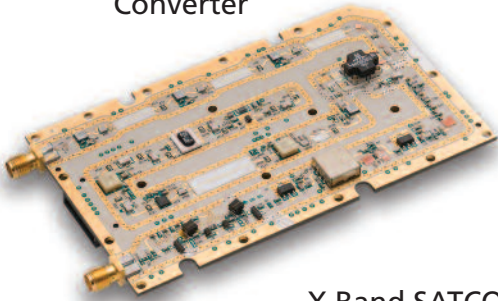


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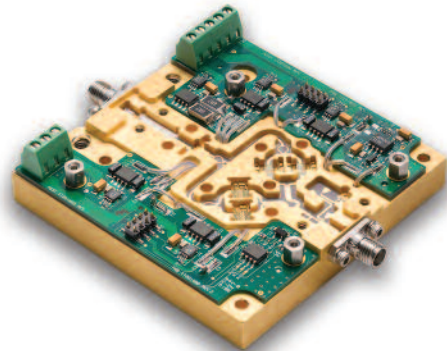
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MULTIFUNCTIONAL MICS & SMT ASSEMBLIES

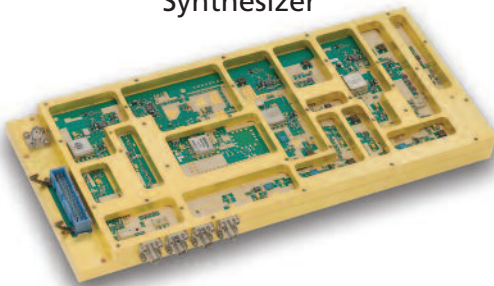
Ku Band Block Up
Converter



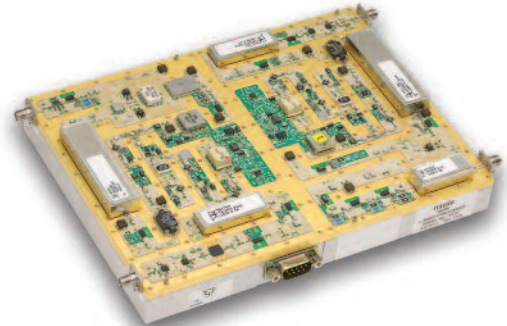
Ku Band 13 Watt SSPA



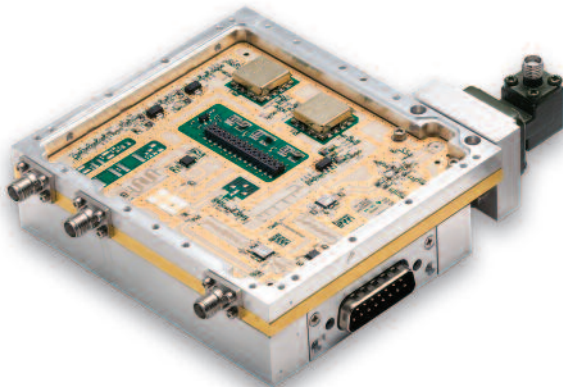
X Band SATCOM
Synthesizer



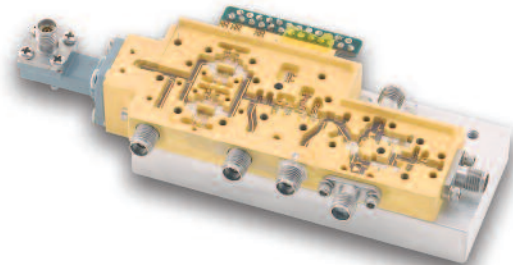
L Band Transceiver



Ka Band LNB



Ka Band Block Up Converter
with 10 Watt SSPA



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FIBER OPTIC DRIVERS

Narda's New Family of Modulator Drivers for 40 and 100 Gb/s Fiber Optic Systems

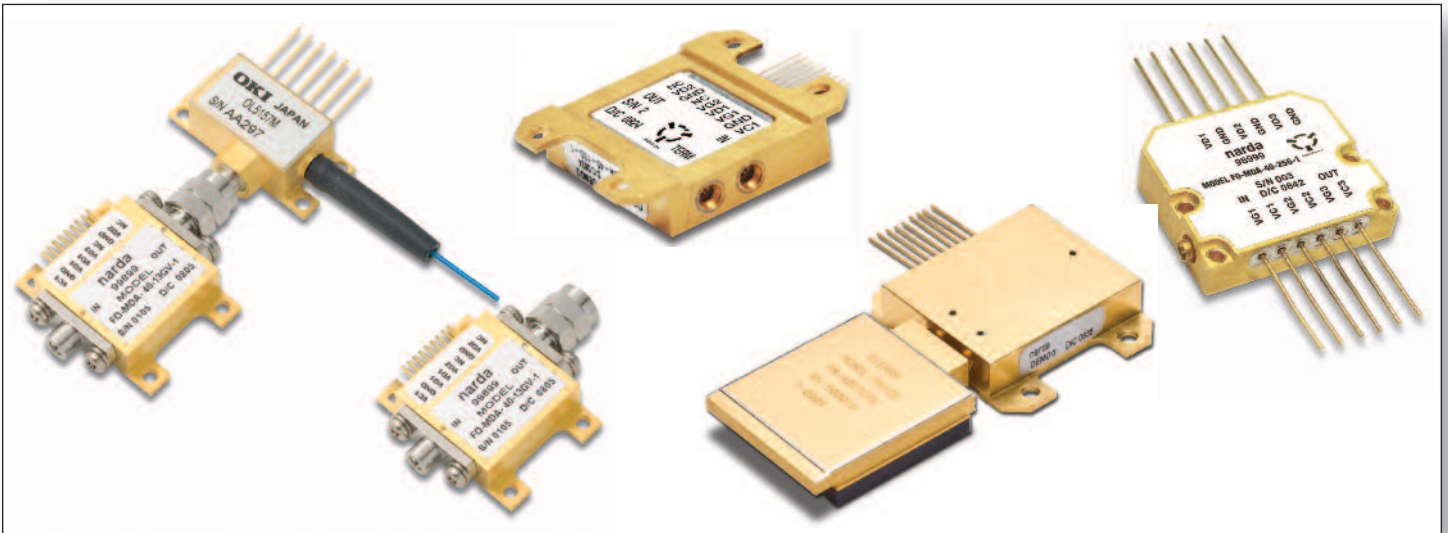
Narda's new driver products utilize proprietary GaAs MMIC technology which provide the broader bandwidth and the higher performance needed for the emerging new modulation formats including DSPK and DQPSK. These new cost-effective products are in response to the realization of the financial targets required by industry.

Optimized for 300 PIN MSA Transponders

- SFF VSR Applications
- DQPSK Requirements at 40 and 100 Gb/s
- DPSK and ODB Long Reach Applications
- Next Generation Designs using SMT Technology

Current Production Packages

Designed for Easy Connection to Adjacent Parts



Next Generation Products

PTFE Microwave Laminates* for Low Cost and SMT Applications



*A Narda proprietary process – patent pending.

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RF SAFETY

40+ Years of Being FIRST In RF Safety Products & Services

RF Safety is a serious business. We know...because we invented it! That's why we've devoted more than four decades to product development, safety education and customer service. No one else can make that claim. And our product performance has been independently verified by standards organizations across the globe. That's no small feat. If monitoring RF energy is an important part of your process, use the best equipment available from the company that invented RF Safety. For more information and detailed product specifications, please visit www.narda-sts.us.



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TRUST NARDA

Narda Microwave Headquarters, Hauppauge, New York



When Capital Budgets Are at Risk... **Trust Narda.**
The Strongest Link to RF & Microwave Solutions in the Business.

From the beginning in 1953...

Narda built both its business model and reputation on manufacturing innovative products which are readily available for commercial and military applications. It prides itself on being a critical and reliable link in the supply chain during these most challenging of economic times – offering standard components from inventory and special products from dedicated production lines.

Even with today's financial instability, Narda, backed by the resources of L-3 Communications, is continuing to **invest** in the inventory and program support needed for your ongoing and upcoming business requirements. We have the **foresight** and **strength** to serve you when you need us...today or in the future.

***If your business is in RF & microwaves,
your partner is Narda.***

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