

RF Products



About Ducommun

Ducommun is a leading designer and manufacturer of RF products covering the frequency range of DC to 110 GHz. Our products include coaxial switches, pin diode switches, Hi-Rel EM switches, switch matrices, integrated switch filter banks, millimeter wave components (both active and passive), sub-Assemblies, IMUs and millimeter wave systems.

Ducommun's RF Products are used on a variety of commercial and military aircraft, communications equipment, industrial, medical, SATCOM and test & measurement applications and platforms.

Today, Ducommun is a key partner with leading OEMs and primes having been chosen for our unique, comprehensive understanding of electro-mechanical and RF/mmW principles. From off-the-shelf standard products to our

inventory of both switch and millimeter wave in-stock products like coaxial switch, waveguide to coax adapter or a highly customized ruggedized switch, switch matrices or millimeter wave products, Ducommun's goal is to provide value-added services to your specific application.

Products

- Amplifiers
- Waveguide detectors
- Horn antennas
- Frequency extenders
- Circulators/Isolators
- Attenuators
- Adapters and transitions
- Electromechanical switches
- Coaxial switch matrices
- Integrated switch matrices
- Hi-Rel coaxial switches
- Pin diodes

MILLIMETER WAVE PRODUCTS

Amplifiers

Ducommun offers Low Noise (ALN), High Power (AHP), Full Waveguide Band (AFB) and General Purpose (AGP) amplifiers to cover the frequency range from 18 to 96 GHz. These amplifiers utilize thin-film and microelectronics manufacturing techniques and are discrete and/or MMIC PHEMT devices. These amplifiers feature low noise, high output power, single DC power supply and wide operation temperature range.

Control Devices

- Pin diode switches
 - > Unique in the industry, we offer pin diode switches from 50 MHz through 110 GHz
- Attenuators
 - > Waveguide fixed attenuators
 - > Waveguide level setting attenuators
 - > Electrical controlled attenuators

Frequency Converters

Ducommun offers design and manufacturing of narrow and wide band frequency converters from K-band through W-band converters. These up and down converters are ideal for test and measurement, communications systems and as transmitters/receivers where frequency conversion is required. Components include:

- Mixers
- Multipliers
- Up/Down converters

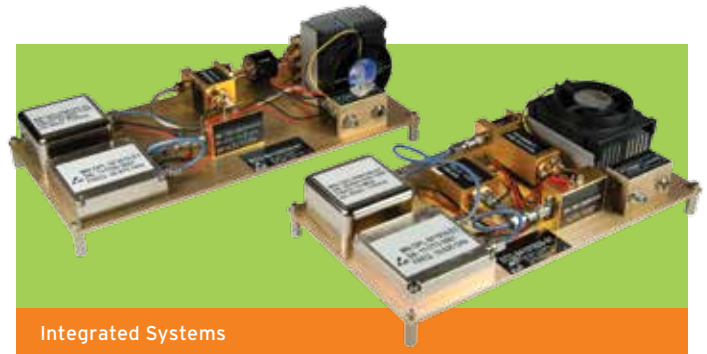
Ferrite Circulators & Isolators

Ducommun offers a full range of coaxial and waveguide ferrite devices from K-band through W-band

Passive Components

Ducommun offers passive components covering frequency ranges from 8.2 to 110 GHz and featuring high performance and low cost. Passive components offered by Ducommun include:

- Couplers
- Filters
- Diplexers
- Magic Tee's
- Waveguide transitions
- Waveguide to coax adapters



Integrated Systems

Microwave Coaxial Switches and Integrated Assemblies

Ducommun has an extensive history and fundamental knowledge of electromechanical coaxial switches and integrated matrix systems providing workable solutions and design to meet the customer's unique requirements. From a simple SPST coaxial switch to a fully integrated switching solution, Ducommun has technical expertise that is equal to the challenge. Below is a list of custom configuration options available:

Frequency Range	DC to 46 GHz
Voltage	5, 12, 15, 28, 48 (Vdc)
Failsafe	Diodes/Indicators
Latching	Pulse/Self Cut Off
Normally Open	Diodes/Indicators
TTL	High/Low
DC Power	Solder Terminals/ D-Sub or Circular Connector

Configurations

- SPDT
- Multiposition
- Transfer
- Hi-Rel
- Switch matrices

TCAS Switches

Ducommun provides five standard TCAS Series model numbers: D2-729B001, D2-729B002, D2-729B003, D2-729B005 and D2-723Q001. All SPDT switches are designed for high frequency RF signals between the top and bottom fuselage mounted antennas and numbers 1 and 2 system transponders.

- FMA PMA certified switches for TCAS and ADS-B applications
- Air Agency Certificate No.: D5YR708X
- Additional microwave switch applications: SATCOM and GPS applications, IFF and weather radar

Engineering

- 10 RF product designers and manufacturing engineers
- Electrical and mechanical design capabilities
- Various CAD/CAM capabilities
- Spectral radiometry
- Dedicated teams for each product line

Mechanical

- Sheet metal stamping and forming
- Injection molding
- Tool making center
- Laser etching
- NASA certified soldering
- Material and component traceability
- CNC center

Testing

- Environmental
 - > Thermal
 - > Vacuum
 - > Humidity
- Corona
- High Power
- RF to 50 GHz

Assembly

- Dedicated assembly cells
- Class 10,000 clean rooms with 100 flow benches

Certifications

- ISO 9001 certified
- AS9100 Rev C
- MIL-PRF-22885 QPL
- FAA (ACSEP)
- FAA Repair Station (MMF)
- NASA-STD-8739.3
- MIL-L-85762A



RF mmW SENSORS (SRF Series)



Integrated Assemblies: Switch Filter Bank



Full Waveguide Band Amplifier Series (AFB)



Switch Matrices

About Ducommun Incorporated

Originating in 1849, Ducommun Incorporated is a leading provider of sophisticated manufacturing and engineering services for the military & commercial aerospace industry, medical, industrial and communications markets. We specialize in providing smart, innovative and reliable solutions that help our customers achieve their goals. Our full-service approach combines broad-based manufacturing capabilities for high-performance, ruggedized electronic products with extensive value-added services such as engineering support, program management and comprehensive testing.

Ducommun operates manufacturing and engineering facilities in 12 states, Mexico and Thailand with quality systems certified to FAA, NASA, ISO 9001:2008, AS9100 REV C, and ANSI/ESD S20.20-2007 standards.

Vision

At Ducommun, our vision is to be our customers' #1 provider of innovative electronics and structures solutions.

Core Values

- Honesty
- Professionalism
- Respect
- Trust
- Teamwork

THE DUCOMMUN WAY

Honesty • Professionalism • Respect • Trust • Teamwork



Where We're Located



ELECTRONIC SYSTEMS GROUP

- St. Louis, Missouri *
- CIRCUIT BOARD SOLUTIONS**
- Appleton, Wisconsin
- Tulsa, Oklahoma
- INTERCONNECT SOLUTIONS**
- Joplin, Missouri
- Berryville, Arkansas
- AEROSPACE INTEGRATED SOLUTIONS**
- Phoenix, Arizona
- Huntsville, Arkansas
- INDUSTRIAL INTEGRATED SOLUTIONS**
- Pittsburg, Pennsylvania
- Houston, Texas
- Tulsa, Oklahoma

ADVANCED SYSTEMS GROUP

- SYSTEMS DEVELOPMENT & INTEGRATION**
- Huntsville, Alabama *
- Oxford, Mississippi
- Iuka, Mississippi
- ENGINEERED SOLUTIONS**
- Carson, California

STRUCTURAL SYSTEMS GROUP

- STRUCTURAL ASSEMBLY SOLUTIONS**
- Parsons, Kansas
- Cocksackie, New York
- STRUCTURAL SYSTEMS SOLUTIONS**
- Gardena, California *
- Orange, California
- El Mirage, California
- BONDED COMPONENT SOLUTIONS**
- Monrovia, California

* Group Headquarters
† Low-Cost Operations Centers