

Space-Qualified RF and Microwave Components

A Formidable High-Reliability Heritage

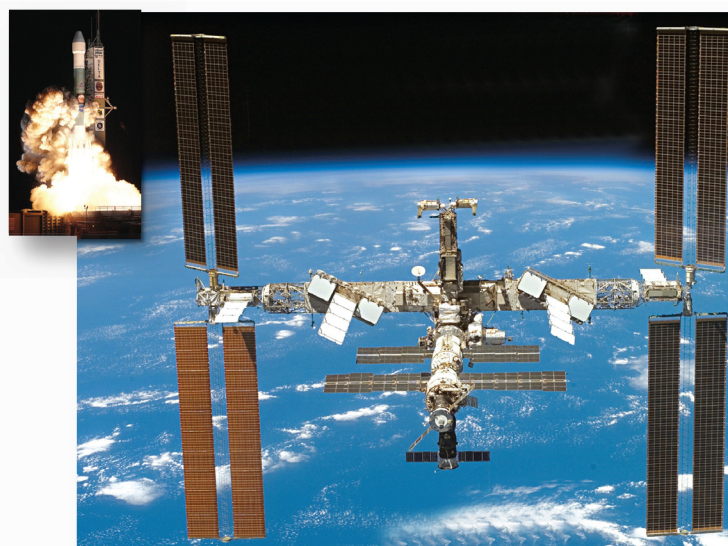
For more than two decades, Mercury Systems' RF Components Group has provided unsurpassed leadership in the design and manufacture of RF and microwave transmit, receive and signal processing components. These space-qualified RF components are ideal for a wide range of applications, from commercial to high-reliability military and space.

Mercury's space-qualified RF components are designed and manufactured under the most stringent controls in order to meet or exceed demanding environmental conditions. Our broad portfolio of products has been applied to the following high-reliability applications:

- Aeronautics
- Broadcast satellites
- Communication receivers
- GPS and GPSII satellites
- International Space Station
- Launch vehicles
- Missiles
- NASA's Mars Rover
- On-board systems
- Radar
- Scientific payloads
- Telemetry receivers
- Telecommunications

Band Designation	Frequency Range (GHz)
HF	3 MHz – 29 MHz
VHF	30 MHz – 299 MHz
UHF	300 MHz – 2999 MHz
L	1-2
S	2-4
C	4-8
X	8-12 (8-12.5 N. America)
Ku	12-18 (12.5-18 N. America)
K	18-27 (18-25.5 N. America)
Ka	27-40 (26.5-40 N. America)

Figure 1. Mercury satellite frequency band coverage



Space-Qualified Components

All space-qualified components are available in hermetically sealed metal packaging. These products have options for full element evaluation and device-level environmental screening to MIL-PRF/DTL, ESA and NASA standards. Space-qualified products include:

- Frequency doublers
- I/Q modulators
- Isolators and circulators
- Limiters and detectors
- RF amplifiers
- RF and microwave mixers
- VCOs and CROs



Performance-Driven Solutions

Mercury is continually expanding its engineering, manufacturing and testing capabilities to meet future high-reliability requirements. Our experienced staff works with our customers to develop a thorough understanding of their needs.

Mercury's high-reliability manufacturing facilities are designed to support engineering and manufacturing, whether it's a small-lot or high-volume requirement. Our facilities offer the following features:

- Automated test and data management
- DoD-cleared facilities
- Environmental screening lab
- Hermetic sealing in a controlled atmosphere
- In-house circuit fabrication
- Integrated MRP system
- Thin-film and solder assembly
- Volume manufacturing

Environmental Lab

Mercury's AS9100 Aerospace Certified environmental lab is custom designed for high-reliability product performance evaluation. Our lab tests for the following environmental conditions:

- Acceleration
- Fine and gross leak
- Lead integrity
- Life test
- Particle impact noise detection
- Resistance to solvents
- Temperature cycling
- Thermal shock

All Mercury environmental lab testing is conducted according to these U.S. Military Standards:

- MIL-PRF-38534
- Class H & K Element Evaluation
- NASA EEE-INST-002
- MIL-STD-883
- MIL-STD-202
- MIL-DTL-28837
- Custom-tailored screening

Mercury's Quality department ensures conformance to customer specifications and ISO-9001:2008 and AS9100C (IAW AS9104A) standards. All products undergo a rigorous system of checks and balances to ensure customer satisfaction and on-time delivery. Our team of professionals is ready to discuss alternative configurations and unique electrical requirements to better suit your specific application.



Contact Mercury Systems today to discuss your high-reliability requirements and obtain the performance-driven solutions you demand.

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