

# Ensuring Quality, Precision, and Reliability Your Trusted RF Partner



Specializing in RF filters and subsystems, Q Microwave is the trusted partner for military and space sectors, ensuring fast, high-quality, in-house solutions while emphasizing collaboration and customer-centric delivery.

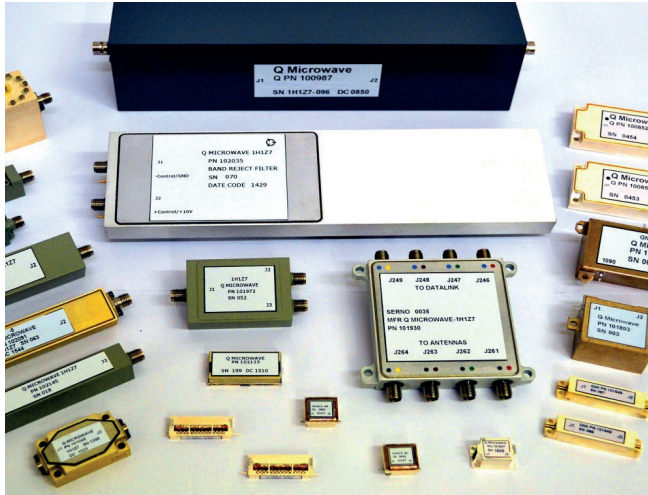
Microwave Filters	SubSystems
<ul style="list-style-type: none"><li>• 20 MHz to 26 GHz</li><li>• Rapid Prototypes</li><li>• Low Cost Production</li></ul>	<ul style="list-style-type: none"><li>• Collaborative Design Approach</li><li>• Custom Integrated Assemblies</li><li>• Enhanced Filter Performance</li></ul>



**US Based Facilities**  
Classified Test Capabilities



# Filter Products



## Design Capabilities

Q Microwave has broad experience in the design and construction of miniature microwave filters ranging from 20 MHz to 26 GHz using a variety of technologies and manufacturing techniques. Core product capabilities include miniature filters, duplexers, and multi-plexers built in a range of package types.

## Standard Packaging

Q Microwave's design approach emphasizes the use of standard components. For our customers, this means standardized packaging & external transitions are preferred in order to reduce cost & delivery lead-time. Q Microwave's standard packaging includes the following configurations:

- Surface mount (SMT) packaging.
- Aluminum or brass housing with glass-to-metal feedthrus or specified connectors.
- Microstrip packages with pads for soldered or wire bonded interconnects.

## Sealing Techniques

Aluminum housings are either laser welded or solder sealed with Indium or Sn62 solder. Stainless steel housings are typically seam welded. Microstrip and SMT packaging are EMI sealed and intended for use within sealed next-level assemblies that provide protection from environmental exposure.

## Hermeticity

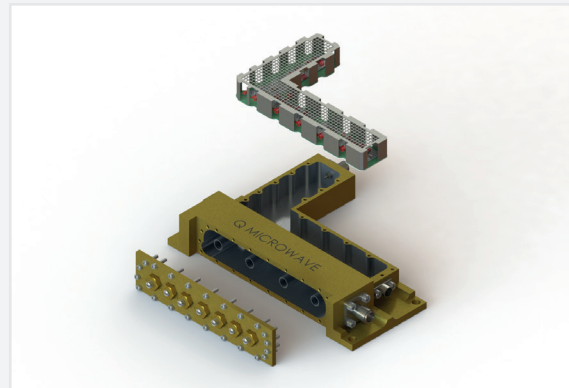
Hermetic packaging provides resistance to environment-induced corrosion or degradations associated with military environmental requirements. Q Microwave's in house Laser Welding capabilities ensure hermeticity requirements meet MIM-STD-202, Method 112 (Gross and Fine Leak).

## Lumped Element Filters

Q Microwave's miniature lumped-element filter capability extends the full frequency range of 20 MHz to 26 GHz. The principal advantages of this type of filter are its small size and broadband capabilities. Disadvantages include higher loss for a given rejection requirement. Typical prototype delivery is 6 to 8 weeks.

## Combine Filters

Q Microwave's standard combine filters are available from 1 to 20+ GHz. The primary advantage of a combine filter is the low loss and high rejection capabilities. Disadvantages include a larger size and weight compared to lumped element filters. Typical prototype delivery is 8 to 10 weeks.



## Ceramic Filters

Q Microwave's ceramic resonator filters offer the middle ground in performance between lumped-element filters and combine filters over the range of 500 MHz to 6 GHz. The standard product is provided in an SMT package. Typical prototype delivery is 4 to 6 weeks.



In House Laser Welding



# Subsystem Products

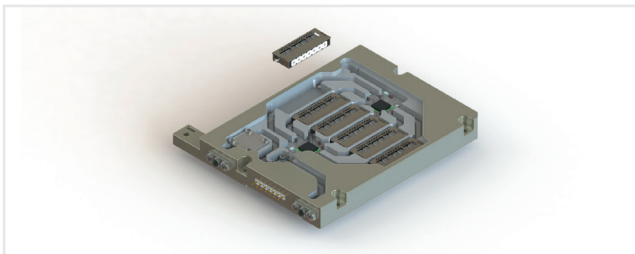
## Integrated Filter Approach

Through a collaborative design effort, we will develop or modify your module's housing to include the filter packaging and input transitions. Our in-house tuning methods and fixturing are developed to optimize the filter's integrated performance. Test fixturing designs can range from temporary test boards to tuning into the actual module. This Integrated Filter approach allows our customers to get the best filtering solution possible while retaining overall control of their design.

## Switch Filter Banks

Q Microwave offers a full range of switch filter bank products. This product can be provided on an integration-ready carrier or in a traditional hermetic package with SMA connectors.

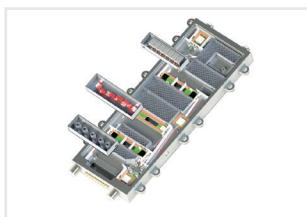
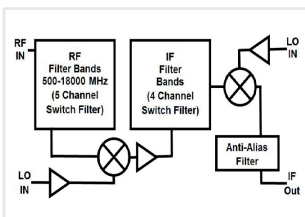
- Collaborative Design Approach
- Seamless Impedance Matching
- Enhanced Performance
- Reduced Size & Parts Count
- Frequencies Up to 20 GHz



## Converters: Custom Performance Available Upon Request.

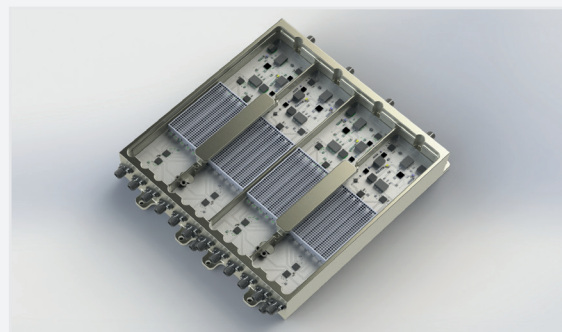
Example: Q Microwave's PN 102200 is a frequency-agile RF Downconverter capable of converting frequencies centered between 0.5 and 18 GHz, with 500 MHz of instantaneous bandwidth. The 500 MHz IF output frequency range is centered at 1200 MHz (950 to 1450 MHz). This module is configured to use two externally provided Local Oscillator (LO) inputs in order to provide a higher degree of flexibility and customized applications. Digital control is provided through a Micro-D connector. The unit is packaged in a rugged housing with hermetical seals and internal potting in order to provide higher reliability in difficult environments.

## All specifications are customizable upon request



## Special Test Capabilities

- Altitude Chambers
- Vibration & Shock
- Fine Leak Testing
- XRF Analysis
- Phase Noise Under Vibration



# Specializing in RF filters and subsystems, Q Microwave is the trusted partner for military and space sectors, ensuring fast, high-quality, in-house solutions while emphasizing collaboration and customer-centric delivery.

Established in 1998 in El Cajon, California, Q Microwave is a specialized RF filter and subsystems manufacturer serving global RF Engineers and Supply Chain specialists in the military and space sectors. We are committed to providing full-service, cost-effective solutions with high reliability and quality.

## What Sets Us Apart

Q Microwave offers a customer-centric approach powered by our in-house technical mastery. This ensures a seamless production process and operational excellence, allowing us to collaborate closely with our clients to optimize designs and product lead times.

## Our Expertise

Our comprehensive experience spans the design and construction of RF microwave filters and integrated assemblies, covering a frequency range from 20 MHz to 26 GHz. We have special capabilities in miniature filters realized in lumped-element, ceramic, and combine topologies. With a focus on innovative design, our solutions integrate seamlessly into our customers' systems. We often gather information on customer manufacturing processes and circuit requirements to deliver tailored and effective solutions.

### Quality

- AS 9100
- ISO 9001
- J-STD-001
- Lean Manufacturing

### Capabilities

- Integrated Assemblies
- Up/Down Convertors
- Micro – Strip Technology
- Diplexers & Multiplexers
- Collaborative Design Approach
- Simulation and Board Layout
- Rapid Development
- Space Qualified Filters



## Our Capabilities

### Comprehensive Product Development Support

We offer comprehensive product development support, from design analysis to AS9100-compliant first article inspection. Trust in our qualification testing, configuration control, and program management to ensure a seamless, high-quality outcome.

### Expedited Prototyping for Unmatched Agility

Leveraging our rapid prototyping, we promise a reduced delivery lead-time over competitors. With standard packaging, initial prototypes are typically in your hands within 6-8 weeks post-contract.

### Lean Manufacturing for Flexibility and Scale

Our dual-track manufacturing capability seamlessly caters to both prototype and volume production needs. Using a state-of-the-art MRP system, aligned with real-time operator feedback via workstations and barcode readers, we dynamically adjust scheduling to meet your delivery timelines.

Our assembly process marries automation with skilled craftsmanship, flexibly adapting to order sizes and design specifics. Trust in our J-STD-001 compliant soldering and a team of certified experts at every crucial juncture.

Our testing suite is outfitted with an array of microwave network analyzers, offering automated tests with fully retrievable S-parameter data for each unit. Additionally, we offer standard Environmental Stress Screening—including thermal shock, leak, and vibration tests—to ensure your product's resilience.

## Our Values

### Dedicated

Unwavering dedication ensures top-tier RF solutions, empowering engineers with precision-crafted products.

### Trustworthy

Trust is paramount. We offer transparent communication and consistent quality, solidifying our role as a reliable partner.

### Proven

Our track record in RF solutions is a testament to our unwavering commitment to quality and innovation.