Q Microwave Inc.
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Q Microwave

Microwave Filters
♦ 20 MHz to 20 GHz
♦ Rapid Prototypes
♦ Low Cost Production

SubSystems
♦ Collaborative Design Approach
♦ Custom Integrated Assemblies
♦ Enhanced Filter Performance

AS9100 & ISO9001 Certified Supplier

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The Fast Filter-Company Since 1998

Q Microwave was established in 1998 within San Diego’s East County region, in the city of El Cajon, California.

Q Microwave specializes in quick turn and low-cost production of RF microwave filters, and subsystems. The corporation’s strategy is based upon an attitude of teamwork with our customers and suppliers to provide top-notch engineering solutions and highly-responsive manufacturing.

Q Microwave has broad experience in the design and construction of RF microwave filters, and integrated assemblies ranging from 20 MHz to 20 GHz, with special capabilities in miniature filters realized in lumped-element, ceramic, and combline topologies. We take pride in our ability to develop filters and subsystems that integrate seamlessly into our customers systems. Information on customer manufacturing processes and how the filter will be used in the circuit is often used to design better solutions.

Product Development: We offer a full range of product development support capabilities including design analyses, design reviews, first article inspection per AS9100, qualification testing, configuration control, and program management.

Rapid Build Cycle: Our rapid prototyping capability provides significant delivery schedule advantage over our competitors. When standard packaging is utilized, initial prototype units are typically delivered within 6-8 weeks of contract acceptance.

Lean Manufacturing: The company maintains a partitioned manufacturing capability that addresses prototype orders as well as higher volume production. Production flow is monitored using the company’s MRP system in conjunction with operator reporting via workstation computers and barcode readers. Scheduling and work center priorities are adjusted as required to meet delivery commitments.

Assembly capabilities include a mixture of automation and touch labor that is blended based upon order quantities and design requirements. Standard soldering inspection criteria is provided per J-STD-001 and all key positions are filled by certified operators.

Test and Tune capabilities are supported by a full range of microwave network analyzers. Automated testing can be provided with fully retrievable S-parameter data available for each delivered unit. Standard Environmental Stress Screening (ESS) is available, including thermal shock, leak testing, and vibration testing.
Lumped Element Filters

Q Microwave’s miniature lumped-element filter capability extends the full frequency range of 20 MHz to 20 GHz. The principal advantage of this type of filter is its small size. Disadvantages include higher loss for a given rejection requirement. Typical prototype delivery is 4 to 6 weeks.

- QLB Series Bandpass Filters
- QLL Series Lowpass Filters
- QLH Series Highpass Filters
- QLN Series Notch Filters

Comline Filters

Q Microwave’s standard comline filters are available from 1 to 20+ GHz. The primary advantage of a comline 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 6 to 8 weeks.

- QCB Series Bandpass Filters
- QCN Series Notch Filters

Ceramic Filters

Q Microwave’s ceramic resonator filters offer the middle ground in performance between lumped-element filters and comline 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.

- QRB Series Bandpass Filters
- QRN Series Notch Filters

Filter Products

Design Capabilities. Q Microwave has broad experience in the design and construction of miniature microwave filters ranging from 20 MHz to 20 GHz using a variety of technologies and manufacturing techniques. Core product capabilities include miniature filters, diplexers, and multiplexers 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 (polyimide, ceramic, Kovar, or stainless steel).
- 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 hermetic products can meet the hermeticity requirements of MIL-STD-202, Method 112 (gross leak and fine leak).
Special Test Capabilities

- Altitude Chambers
- Seam Welding
- Fine Leak Testing
- XRF Analysis

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.