API Technologies has a rich heritage in providing a vast portfolio of standard, configurable and custom, application-specific solutions for the medical marketplace.

API’s focus on miniaturization and achieving higher packing density in circuit design has allowed us to meet the needs of our customers where component size is a premium and the highest levels of integration are desired.

In addition to standard, off-the-shelf components and configurable part numbers, API can provide custom-sized options to fit your unique packaging specifications. Our products can also be hermetically and resin-sealed to meet the stringent environmental and high-reliability requirements of the medical marketplace.

**Ceramic Capacitors**

Products include Discoidal Capacitors that are ideal for by-pass and filtering applications with a low impedance construction suited for high frequency applications. Tubular Capacitors are small, lightweight with high dielectric strength and are impervious to moisture and contamination. Switch Mode Power Supply (SMPS) Capacitors deliver lower equivalent series resistance, lower equivalent series inductance, lower ripple voltage and less self-heating when compared to other capacitor technologies. Planar Capacitors offer fast assembly time and also have a low profile and are capable of meeting various geometric and electrical configurations.

**Applications:** Medical Imaging, Implantable Defibrillators, Portable Dialysis, Anesthesia Equipment, Patient Care Monitors, Surgical Tools, Laboratory Equipment, Portable Ventilators, IV Infusion Pumps, External Defibrillators

**Coaxial Filters & Interconnects**

API Technologies’ products include Filtered Connectors that offer many options for managing EMI at the signal and power I/O. Filter Plates that provide exceptional EMI protection of signal and power lines at lower total installed cost. Surface Mount Filters designed to provide a range of high performance EMI filtering options with minimal PCB footprint. Our Low Pass EMI Filters are the industry’s most complete line giving more styles, IL performances and cost alternatives.

**Applications:** Medical Imaging, Implantable Defibrillators, Portable Dialysis, Anesthesia Equipment, Patient Care Monitors, Surgical Tools, Laboratory Equipment, Portable Ventilators, IV Infusion Pumps, External Defibrillators

**Power Filters**

API Technologies’ line of products include Power Line Filters with Single Stage Wire Leads for medical purpose applications. The compact design requires minimal real estate and suitable for products that must conform to FCC and FTZ regulations. 2 Line, 2 Stage Filters have easy connection and installation and excellent filtering characteristics for both differential mode and common mode. These filters are common for equipment requiring very high noise attenuation.

**Applications:** Medical Imaging, Anesthesia Equipment, Patient Care Monitors, Surgical Tools, Laboratory Equipment, Portable Ventilators, External Defibrillators

**Custom Magnetics**

API will help by developing a custom solution using the preferred design criteria, from construction (raw materials, winding and finish) to electrical and mechanical characteristics to circuit function. We can offer extensive design and manufacturing capabilities, including more than two dozen magnetic core materials and winding wire from 6 to 45 gauge with many coating, leads and terminations.

**Applications:** Medical Imaging, Portable Dialysis, Anesthesia Equipment, Patient Care Monitors, Surgical Tools, Laboratory Equipment, Portable Ventilators, IV Infusion Pumps, External Defibrillators
**Hybrid MCMs & Microelectronics**

For medical applications where high reliability electronics are required for harsh conditions such as autoclaves, API is able to provide custom MCM solutions to ensure the reliability and electronic performance of surgical tools and instrumentation are maintained. API also produces highly reliable thin film chip resistors with many customizable options, making it an ideal solution for imaging and other electronic equipment where heat dispersion is of paramount concern.

*Applications:* Medical Tooling & Instrumentation, Surgical Drill Motor Controller Products, Blood Electrolyte Sensors, Blood Analyzer Control Hybrid Assemblies, MRI, X-ray

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**High Frequency Amplifiers, High Frequency LNAs & Surface Mount Synthesizers**

API Technologies offers a broad selection of Low Noise Amplifiers (LNAs) up to 40 GHz. These amplifiers are ideal for applications that require the absolute lowest amount of noise such as RF imaging. API’s line of high frequency broadband amplifiers are also ideal for medical applications such as imaging and scanning systems. These user-configurable designs start at 4 GHz and reach up to 50 GHz. API’s line of affordable surface mount synthesizers are ideally suited for commercial applications where a low cost, non-hermetic solution is desired.

*Applications:* Medical Wireless Transceivers, MRI, Total Body Scanning Systems

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**RF Components & Antennas**

Many of API’s passive and active RF components are used in medical device and instrumentation applications. Broadband directional couplers are available to cover all communication frequency bands. API’s phase shifters are used in test labs worldwide. Our hybrid mixer line offers double and triple balanced configurations in many industry-standard housings. Our delay line offering included BAW (Bulk Acoustic Wave), SAW (Surface Acoustic Wave), Coaxial-High Frequency, LC (Lumped Constant), and Steel-Pulse Compression. API’s antenna solutions can be utilized in medical applications such as RFID or monitoring systems.

*Applications:* Medical Imaging, Laboratory Equipment, Surgical Tools, Monitoring Systems

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**SAW Products**

API Technologies designs and manufactures high performance SAW filters, oscillators, and delay lines for medical requirements. API’s design library consists of SAW filters from 20 MHz up to 2600 MHz. API’s ultra low phase noise Voltage Controlled SAW Oscillators (VCSOs) offer high performance in frequencies from 100 MHz to 20 GHz. Our SAW delay lines offer maximum performance from 20 MHz to 2000 MHz in lightweight packaging.

*Applications:* Pacemaker Communications Systems, Wearable Products for Stress & Weight Management

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**Power Distribution Units**

API Technologies produces reliable power distribution products for medical equipment and related applications where it is critical to receive unimpeded power. Several of our designs feature remote and/or local monitoring, alarm capabilities, and circuit breakers designed to prevent accidental actuation to the OFF position.

*Applications:* Hospital Data Centers, Data & Server Rack/Enclosure Systems

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API Technologies’ customers benefit from unparalleled engineering and industry expertise. We provide complete standard and custom solutions in a timely manner. Our in-house machining, state-of-the-art engineering, and technology integration provide for rapid turn-around from prototype to production.

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