



Cutting Edge Thinking - Proven Medical Engineering

For over twenty-five years start-up and fortune 500 companies have trusted PRGA's engineering team to accomplish project goals, realize new ideas, and compete in the rapidly changing medical device market. Our software and hardware engineers offer you product realization expertise including: R&D, Product Definition, Prototype Design, Product Design, and Verification/Validation Testing.

Product Experience

Therapeutic

◇ Cardiology

- Pacemaker Controller
- External Cardiac Defibrillator
- Cardiac Vest for Radial Compression
- External Pacemaker
- Pacing Lead Impedance Measurement Device

◇ Audiology

- Audiometer
- Hearing Aid Controller

◇ Neurology

- Drug Infusion Pump

◇ Cardiovascular

- Blood Pump
- Disposable Angioplasty Syringes

◇ Respiratory

- CPAP Devices
- Obstructive Sleep Apnea Ventilator

◇ Medical Hypothermia device

Monitors

- ◇ Infant Apnea Monitor
- ◇ Heart Rate Monitor
- ◇ Blood Pressure Monitor
- ◇ Pulse Oximeter

Diagnostics

- ◇ Heart Arrhythmia Diagnostic System
- ◇ Interactive Cardiac Rhythm Simulator

Sterilization

- ◇ Endoscope Disinfector

Therapeutic

- **External Cardiac Defibrillator** - Design and implementation of a multi-language voice-sequencing trainer for an AED
- **Cardiac Vest for Thoracic Compression** - R&D for intrathoracic cardiac compression vest to replace manual CPR
- **Pacing Lead Impedance Measurement Device** - Re-design of legacy software to improve performance of pacemaker lead impedance measurement
- **Audiometers** - Hardware, software, and PCB design and development for an audiometer with a 32-bit digital audio processor and 108-db dynamic range, used for a digital filter
- **Implantable Drug Infusion Pump** - Development of IrDA interface board so legacy medical infusion pump could communicate with hand held device
- **Blood Pumps** - R&D for Doppler Flow Meters to regulate extracorporeal blood flow
- **Disposable Angioplasty Syringes** - R&D for electronic Process Monitor Strain Gauge to improve measurement accuracy
- **CPAP Device** - Hardware, software, and PCB design and development, incorporating atmospheric pressure sensors and motor controls to monitor low pressure and control precision fan monitors

Monitors

- **Infant Apnea Monitor** - Design and code of changes communicated to the report generator program

Diagnostics

- **Heart Arrhythmia Diagnostic Equipment** - system diagnostics, design of low-level graphics, verification and validation testing
- **Interactive Cardiac Rhythm Simulator** - Design and development of software, hardware, PCB, and manufacturing test/diagnostics for heart simulator (Patent number: 5,692,907)

Sterilization

- **Endoscope Disinfectors** - Design and development of software and hardware to control disinfection process and allow use of the next generation of sensors

“PRGA has proven to be an excellent source for engineering and we would recommend them without hesitation.” Cardiac Science