



When every breath is a struggle, electronic products designed by Orchid Technologies can help!



“Try as they might, our original design team was unable to complete this design. That’s when we called in Orchid. They had first revision units working within four months! I only wish we’d had Orchid on this project from the start.”

- J.H. Emerson Company
- President

Medical Electronic Product Design

Medical electronic product design can take many forms. The medical electronic product shown below assists patients in the seemingly simple act of coughing. Simply coughing can be most difficult for people with certain illnesses. Orchid begins by embracing both the unique technical and human-factor design challenges. We work closely with our client to develop a deep understanding of the product requirements. We develop a robust and effective electronic architecture. That architecture is reviewed through risk-assessment, design fault management, change procedures and rigorous design verification processes. The result—a medical electronics product which makes it possible for her (and her parents) to sleep more soundly.

High Speed Brushless DC Motor Control

High-pressure air is developed using a very low back-EMF brushless DC motor. Running at a maximum speed of 12,000 RPM, this motor moves air very efficiently. A custom, high-performance, high-efficiency DC motor controller provides constant speed control of the motor over a wide range of load conditions. During the cough-assisting-process, airflow through the motor system changes rapidly. These changes cause large, step-function changes in the motor’s load. To function correctly, motor control electronics must rapidly adjust to these rapid changes in motor load. PID motor speed control with advanced feed-forward control techniques permits precise motor speed control.

Precision Analog Electronics

Precision, low-noise analog electronics perform high-accuracy relative and absolute air pressure data collection. Low-noise motor controller design techniques makes it possible to mix both precision analog electronics together with high-current switching circuitry.

Orchid Technologies—Medical Electronics

The development of custom Electronics Technology solutions for our OEM clients is Orchid’s entire business. High-performance Custom Medical Electronics with rapid design cycles, demanding technical requirements and unforgiving schedules set us apart. Call Orchid Technologies today!

