



## PROJECT PROFILE

### INFANT EAR STIMULATOR

#### CLIENT CHALLENGE

Our client develops specialized audiology testing equipment which allows the user to reliably perform ABR (auditory brainstem response) diagnostics without sedation or fear of other acoustic or electromagnetic interference affecting the results. This is a field which has experienced rapid development from its inception about 10 years ago for diagnosing deficient auditory sensing from the range of acceptable hearing standards. These forms of diagnoses lead to more accurate and timely therapies. Most recently, the client has ventured into the Newborn Hearing Screening market with an Automated ABR system. Utilizing a patented algorithm, the company is able to screen awakened and stirring babies more reliably. The client desired to improve the ear stimulator design to facilitate easy application and auditory testing with the least amount of interference with the newborn's comfort and sleep cycles. The client required New Product Development expertise in key stages of the New Product Development Cycle:

- Concept Engineering design and knowledgeable COTS sourcing
- Prototype CAD modeling
- Proof of Principle (POP) models
- Design for manufacturing - plastics, appropriate medical adhesive materials

#### SCOPE OF WORK

Palladium was retained for our expertise in medical products and the New Product Development field. The following tasks were required for the project:

- Identify user/functional requirements as a basis for development
- Validated concepts quickly by COTS sourcing and early POP models that narrowed the concept choices
- Plastics moulding expertise was involved early in the design stage to keep the concepts aimed at producing an economically manufactured end product
- Early consideration of manufacturing costs and DFMA

#### PROJECT DELIVERABLES

Palladium staff delivered the following results:

- Previous Medical Product Development experience minimized the development time for the entire project.
- Knowledgeable COTS sourcing and experience dealing with OEM manufacturers increased BOM and manufacturing efficiencies for the client.
- DFMA and plastics molding expertise produced a new, economically produced, more functional, ergonomic and user friendly end product.

Palladium's work enabled the client to:

- Evaluate several viable design concepts
- Provide a well documented path to more detailed design and prototype development.

