

Case History 32

Video Laryngoscope

Market

Airway Management

Client Type

Established Medical Device OEM

Unmet Need

A product that is a cost-effective, high quality, always-ready device to bring visualization to endotracheal intubations.

Approach

Starting with a device specification provided by client, we developed a hybrid reusable/disposable device that was suitable for all endotracheal intubations in a variety of settings (hospital, ambulance, EMT, military).

Product Features

This device is comprised of a disposable, single-use “blade” and reusable “display”. The blade serves 3 functions:

- 1) Mechanical -- Like a conventional laryngoscope, the blade moves the tongue so that the endotracheal tube (ET) can be inserted through the vocal cords. Up to 25lbs force is required for this, so the device must be very strong.
- 2) Visualization – In conventional intubation, the user must look past the tongue and into the pharynx to see the vocal cords. This is sometimes difficult or impossible due to patient anatomy, edema, and other factors. The vision blade has a camera, lens, and white LED at its distal tip that provides a clear, close-up view of the vocal cords.
- 3) Guiding – A channel on the side of the blade holds a pre-loaded ET and guides it through the vocal cords. The ET is easily removed from the blade because the channel is formed with a soft elastomer.

The display is reusable indefinitely. It features a 3” AMOLED display, an FPGA-based image processing engine, batteries, and video output for image display on remote monitors.

This highly disruptive product is priced an order of magnitude below other devices in the market. It won a MDEA Gold Award, and is rapidly gaining market share.

Services Provided by OTI

- Concept development
- ID & mechanical engineering, including injection mold development
- Electronic HW & SW development, including flex & rigid PCB fabrications
- Optical design & engineering of illumination and imaging systems, including injection molded plastic optics
- Prototype fabrication & design verification testing
- Manufacturing transfer

Client Comment -- *“Before this product, we had never developed or produced an optical or electronic device. Optimum Technologies expertly guided us through the entire development process and supported transfer of the device to our contract manufacturer. They are our go-to resource for product development services.”*



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