

# Case History 37

## Digital Dental Scanner

### **Market**

Orthodontic

### **Client Type**

Market leading supplier of Dental Devices (Ormco, Div. of KKG)

### **Unmet Need**

A product to digitally record dental anatomy and eliminate the need for physical dental impressions. The accuracy and patient comfort of the procedure must increase, while the cost and duration must decrease by minimizing the labor involved.

### **Approach**

Ormco's Lythos Digital Impression System effectively harnesses the power of digital scanning to capture intraoral data with accuracy and ease of use for the orthodontist, dentists and their staff.

### **Product Features**

The product utilizes Accordion Fringe Technology (AFI) Technology which generates 3D data in real time versus post-process stitching. The resulting digital scan is an accurate, high-definition image detailing all angulations of the tooth surface and geometry of the arch. Stereo lithography (STL) files can be sent to the orthodontic labs free of charge and allows patient data to be easily integrated with manufacturers to produce a variety of custom appliances and/or study models. The unit weighs less than 30 pounds for easy transport from operator to operator and features an easy-to-clean touch screen for flexible viewing of models on screen and when entering patient data.

### **Services Provided by OTI**

- Disposable tip cover
  - Plastic tip cover design
  - Design of a printed flexible heater for mirror defogging
  - Development of laminar assembly architecture for reliability and low cost
  - Development of low cost, high performance optical grade mirror
- Reusable tip support and mounting
  - Designed for disinfecting and autoclavability
  - Feed through design for wiping electrical contacts
  - Accurate alignment of disposable mirror in tip
- Handpiece
  - Thermal and vibration Finite Element Analysis (FEA) to optimize handpiece design
- Manufacturing Support
  - Supply chain development
  - Design and fabrication of assembly and test fixtures

### **Customer Comment**

*"Optimum functioned well with our internal team and provided a validated final design and vendor base that has proven reliable in the market."*

— Eric Cunningham, Program Manager



*The console (at left) is portable. The wand (at right) is comprised of a reusable handpiece, autoclavable metal tip support, and disposable tip cover.*

© 2014 by Optimum Technologies, Inc.

114 PLEASANT ST.  
SOUTHBRIDGE, MA 01550  
T 508 765 8100  
F 508 765 8101  
E INFO@OPTIMUM-TECH.COM

WWW.OPTIMUM-TECH.COM

 **OPTIMUM<sup>TM</sup>**  
TECHNOLOGIES  
*BioOptics Realized*