

# ARTEREX

## CASE STUDY

### RF Generator for Aesthetic Surgeries



**Medical Condition/Clinical Need:** Develop a next-generation RF energy generator with improved features and capabilities for plastic surgery and dermatology applications.

**The Challenge:** In the medical field of plastic surgery and dermatology applications, minimizing the procedure treatment time and increasing the number of body treatment areas are important factors for the physician. A new RF generator system was needed to provide a significant increase in power, as compared to an existing system, while also maintaining the same tissue temperature regulation specifications.

**The Design/Manufacturing Solution:** The Arterex engineering team developed a new RF generator, with an increase in power output, by a factor of 2.5 times as compared to the existing generator. A new high frequency amplifier was designed, and new software algorithms were developed. The system employed sophisticated temperature control algorithms, based on tissue response testing, type of electrode selected, whereby the characteristic parameters of each electrode allowed the algorithm to optimize the energy delivery and response time during treatment. To ensure the best therapeutic outcomes, the existing-validated parameters and clinical end points were duplicated on the new generator. The increase in power of the new generator also allowed the use of new larger electrodes, that could more effectively target body areas with larger tissue surfaces.

**Results:** The RF generator system was designed, developed, validated and verified at Arterex. After CE and FDA approvals were issued, Arterex manufactured the commercial device, and managed distribution and aftermarket services.