Wrist and Finger Electrodes for a Cardiac Event Recorder – *Case Study*

Overview: ISL was approached by a company seeking wearable finger and wrist electrodes. These are both accessories for a portable cardiac event recording device. For this product, the end-user attaches the finger or wrist electrode to a cable electrode that is connected to the recording equipment. The recording equipment was connected to a modem and phone which allowed the doctor to remotely view and discuss the patient's results in real time.

This product had been previously manufactured by another company, but when the customer's volume increased they were not able to get a price reduction.

Challenge: The challenge with this project was the manufacturing process; both items had extremely tight tolerances.

The hook and loop, for the finger electrode, was silver plated over a fabric closure. This specific raw material was only available from one source in Europe. The tape that we needed to use had a specific slit width and critical instructions for wrapping around the silver hook and loop. The assembly instructions were very specific and needed to be repeatable in production.

The stainless steel material that was needed for the watch band was also a challenge to work with.

Solution: ISL was able to provide the customer with a more comfortable wrist and finger electrode. Even more importantly, we were able to offer a 30% cost savings compared to the customer's incumbent supplier.

The ISL finger electrode stud was centered more accurately than the previous version. Both assemblies were manufactured at our facility in Taiwan and our products complied with the rigorous FDA requirements.