

Integra has been an indispensable part of Saluda Medical's growth and ongoing successes towards commercialization of the Evoke® ECAP-Controlled Closed-Loop spinal cord stimulation system. (*ECAP – Evoked Compound Action Potential*)

CHALLENGE



Saluda came to Integra Technologies five years ago with one goal: Help create the world's first ECAP-Controlled Closed-Loop spinal cord stimulation device.

This goal came with challenges:

- High customization
- Long timelines
- Critical documentation and process
- High failure risk
- Small volumes
- Tight budget

All are traits which go against much of what is customary in the semiconductor industry.

CASE SOLUTION

Over the last five years, the Integra team has supported Saluda Medical through:

- ASIC package and testing: Integra developed device tests which test every aspect of the ASIC's function and critical safety measures with the process and package being validated by Integra and Integra's partners.
- Failure analysis: Risks and failures were openly discussed. Integra was able to make helpful suggestions and assist with developing solutions for problems.
- Ramp from small volume to commercial quantities.
- Found a high-quality packaging supplier that was willing to package one or two wafers at a time.
- Assisted Saluda with the development of test plans, packaging specifications and documenting test system verification
- Provided detailed production test data and records for traceability purposes

THE RESULT

"Integra has witnessed and contributed to Saluda's development from early on, including supporting us through the first patient implant in clinical trials. Despite the uncertainty of outcome, support has been unwavering. We are now in the process of developing further test capabilities and changing ASIC packaging to improve miniaturization. Integra, via their Silicon Valley facility, are supporting this project in the small quantities that are the mainstay of our type of developments. As Saluda strives towards commercializing potentially life-altering therapies and technologies, we look forward to continuing our work with Integra," said Peter Aigner, Electrical Engineering Manager, Saluda Medical.