

Inline In-Circuit Test System for Pacemakers

Featuring Active Temperature Control

About the Cooperation

Konrad Technologies partnered with a leading global medical device manufacturer to develop an advanced inline test system for the PCBA of pacemakers. The collaboration aimed to enhance the accuracy and reliability of testing processes, ensuring the highest quality standards for life-saving medical devices.

Project Scope

Challenges

- Addressing ERP system issues that led to significant project delays.
- Ensuring the system could handle active temperature control (37 ± 1 °C) and perform ICT (In-Circuit Testing) efficiently.

Objectives

- Develop an inline test system capable of maintaining a controlled temperature environment for accurate PCBA testing.
- Achieve a cycle time of less than 30 seconds per test, including active tempering and ICT.
- Coordinate effectively among various stakeholders to meet project deadlines.



Solution

Konrad Technologies developed the Inline FlexCell Prodigy 3.0, which includes:

- **Active Temperature Control:** The system simulates human body temperature (37 ± 1 °C) during the testing process, ensuring realistic operating conditions for the PCBA.
- **Automated Loading and Unloading:** Standard loading and unloading stations integrated into the test cell streamline the process.
- **High Precision Testing:** Utilizes advanced ICT processes to verify the functionality of the pacemaker's circuit boards under controlled temperature conditions.
- **Comprehensive System Integration:** Features such as pre-soak stations, warming units, and mechanical adjustments ensure the accuracy and reliability of the testing process.

Customer Benefit

The medical device manufacturer benefited from:

- **High Accuracy:** The system's ability to simulate human body temperature and perform precise ICT ensures the highest quality for pacemaker circuit boards.
- **Efficient Production:** Achieving a cycle time of less than 30 seconds per test allows for high throughput and efficient production.
- **Reliable Coordination:** Despite initial delays, effective project management and coordination ensured the successful delivery and implementation of the system.
- **Enhanced Product Quality:** The rigorous testing process improves the reliability and safety of the final pacemaker products.

Our Know-how

- **Expertise in Test Systems:** Advanced knowledge in designing and implementing sophisticated test systems for medical devices.
- **Proficiency in Automation:** Utilized state-of-the-art automation technologies for efficient loading, unloading, and testing processes.
- **Advanced Temperature Control:** Developed precise temperature control mechanisms to simulate real-world conditions during testing.
- **Strong Project Management:** Effectively managed and coordinated multiple stakeholders to overcome challenges and deliver the project successfully.
- **Commitment to Quality:** Maintained a strong focus on quality and precision, ensuring the highest standards for critical medical device components.