Adapting Wave Soldering to High-Flexibility Manufacturing

By Bennett Bruntil, Vice President, Sales and Marketing, Sono-Tek Corporation

To help PCB manufacturers take steps toward greater automation and traceability and the goal of Industry 4.0, Sono-Tek has introduced its InSight board recognition system. The system is designed to enable customers to further automate their wave solder process, removing human error and adding traceability. It also aids manufacturers with frequent board changeovers (lot size one) that can benefit from a recipe change function in the fluxing process.

Greater Fluxing Automation

Sono-Tek has been at the forefront of the ultrasonic spray fluxing industry for decades, replacing hundreds of inefficient pressure spray fluxers and foam fluxers worldwide. The company's product line, SonoFlux, is a mature line of ultra-

The flexibility of InSight enables manufactures to selectively flux boards followed immediately by full board fluxing, without any operator intervention.

sonic spray fluxers for integration into all major wave soldering machines.

To meet the growing demand

for automation, the company developed its InSight board recognition system in early 2018, for use with its popular SonoFlux Servo model. InSight is available in one of two variations: either as a camera vision system that uses image recognition to choose the recipe, or as a barcode sys-

The InSight development team from left: Bennett Bruntil, VP sales and marketing, Tom Duke, software engineer, Robb Engle, VP engineering, and Brian Booth, director of electronics and advanced energy.

tem, scanning each pallet's barcode (1D or 2D) for recipe assignment.

The vision system option does not require any special marking of the board or pallet for automation and can be used in almost all applications. The flexibility of InSight enables manufacturers to, for example,

load a board for selective area fluxing, followed immediately by another board type that requires full board fluxing, without any operator intervention.

Recipes are created through a user-friendly, Windows-based interface. Once programmed, no operator intervention is necessary. The system captures the board image using the vision function upon entering the wave (or alternately scans the barcode if the barcode reader version is installed), assigns the correct recipe and processes the board. The system makes recipe decisions, reduces human error, and ensures that each board is fluxed in the manner that engineering dictates.

Greater Traceability

Traceability is another feature of the InSight system. The software allows users to access the log in which each board's time and recipe name was fluxed and stores it in a calendar-based machine log. All recipe parameters can be accessed for each board fluxed, along with a history log of any changes and alerts.

Designed for compatibility with existing SonoFlux Servo machines, InSight can be installed on new Servo fluxing systems or as a simple equipment upgrade to Servos in the field. During its development

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The SERIES 3 PORTA-WAND ELITE includes a detachable battery pack and a safe vacuum level indicator, as well as 5 in. (12.7 cm) round machined-aluminum Teflon-coated, pushbutton control. The detachable battery pack (VPWE-150) contains the rear exhaust filter for the entire tool to ensure greater than Class 1 performance.

The battery pack can be re-

charged while attached to the tool or when separated from the tool. The operation indicator turns on only when proper vacuum has been established, allowing operators to confirm they have a firm grip on the wafer. A pushbutton provides easy on/off control with a lock-to-on position.

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Loveland, CO — Rubadue is now offering a wide selection of litz wire products. As design engineers across many industries look to provide more energy-efficient designs in smaller and lighter packages, litz wire has become a key element.

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Wave Soldering and High Flexibility Manufacturing

process, Sono-Tek worked closely with OEMs and contract manufacturers to ensure that InSight included all the necessary features to meet their needs.

"Since introducing InSight, we have noticed that all of our major markets are purchasing or currently working on acquisition of this new offering," said Brian Booth, director of electronics and advanced energy at Sono-Tek, in a recent interview. "The worldwide market is clearly hungry for these types of offerings and we

are pleased to provide a solution to manufacturers that did not previously exist.

Sono-Tek is expecting the InSight introduction to prepare manufacturers for Industry 4.0 advances and looks forward to continuing innovations in its product line in this direction."

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