

User report



Support for Umeantech now also in stencil printing

Alexander Sigler, owner Umeantech,
and Moshe Levy, owner MemTech.

Ersa launches VERSAPRINT 2 in Israel

The Productronica in November 2019 marks the twelfth anniversary of the market launch of the stencil printer made by Ersas. How time passes ...! The highlight of the first edition in 2007 was the integrated 2D print control, which enabled a 100% statement about the quality achieved. After printing, the PCB was completely captured using a scanner and examined for paste application and

possible short-circuits. What was state of the art at the time as a 2D inspection was gradually pushed to its limits by miniaturization and a much narrower grid of components. Ersas solved this by recording the printed solder paste in three dimensions – known as SPI, short for “Solder Paste Inspection”. The technology integrated in the VERSAPRINT 2 recently also convinced the Israeli company Umeantech.

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published in
productronic 07/2019
in Germany

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VERSAPRINT 2 with operator inspecting a printed circuit board.

As a system supplier, Ersa GmbH is known for innovation and technological leadership in many areas of electronics manufacturing. So it was obvious to take into account the current market requirements with regard to stencil printing. And true to this philosophy, Ersa engineers have approached the topic of 3D-SPI. Of course it was clear from the beginning that it had to be an integrated solution in the printer again.

The development started about four years ago, the successful integration by a specially developed camera took place two and a half years ago. The laser-based triangulation method is used to record the height information of the printed solder depot. The camera permits both the positioning of the printed circuit board for the printing process and the subsequent inspection of the entire layout.

REDESIGN OF THE PRINTER PLATFORM AFTER TEN YEARS

The integration took place on the platform of the VERSAPRINT 1 series and quickly established itself on the market. Over the past two years, numerous systems with 2D inspection have been converted to 3D – which also confirms to Ersa Development that they have taken the right path towards an integrated 3D inspection. After ten years of VERSAPRINT 1, Ersa decided to redesign the existing printer platform. Many new options that had been developed in the meantime could no longer be easily integrated into the existing structure. Increased assembly times and great-

er additional expenses for retrofitting at the customer were a sign that the company was moving in the direction of the second printer platform generation. The control concept had reached its limits and the software interface was no longer state of the art. Ersa reacted to this situation and presented the VERSAPRINT 2 stencil printer at the last Productronica two years ago. With its new, modern look, success was not long in coming. With the new platform, a product has been developed especially for the Asian and American markets that meets the requirements and demands there all along the line.

EXTENSIVE INSTALLATION BASE IN ISRAEL

As a global player, Ersa has local partners in countries without its own branch office. Most of them are not specialists in printing technology, but at home in the soldering process. These partners had to be trained and advantages and sales arguments had to be communicated in order to gain access to the respective market. For example, MemTech, Ersa's long-standing partner for Israel, is a leading supplier of electronic manufacturing services (EMS) and high-tech in Israel. Numerous international companies, recognized worldwide for their first-class products, are on MemTech's customer list as references. Together, MemTech and Ersa have built a strong and extensive installation base since 2006, enabling Ersa rework stations and selective soldering machines to become the standard in Israel's EMS industry.

Loading the machine with an assembly.



In order to start the stencil printer project in Israel, valuable know-how was built up in numerous meetings and sales seminars. This process was necessary and unavoidable for the VER-SAPRINT 2 series. And so it was only a matter of time before Umeantech Engineering and Production Services, an Israeli company, became aware of the new product and came to Germany for trials at the Ersa Application Center in Wertheim am Main. Umeantech is anything but a stranger to Ersa, as the Israelis have already successfully used an ECOSELECT 1 selective soldering system and several repair systems.

journey should take, the tests quickly showed that the integrated 3D inspection exactly met Umeantech's requirements and expectations. "To see the result immediately after printing is very important for us," Umeantech owner Alexander Sigler says. He continues: "With a downstream SPI, at least one circuit board is already printed while the SPI is inspecting. Since we very often run very small series, this is extremely important for us. I particularly like the compact machine and the uniform software interface for printing and inspection, especially the space requirement is decisive in our production in Netanya."

The integration of the inspection into the printer has even more to offer. Often, insufficient paste transfer to the pad occurs when starting up production or a new product due to a lack of optimum conditioning of the paste. If this is detected immediately and the printed circuit board is still in the print nest, the best solution is often to reprint the PCB.

If the printed circuit board is inspected again afterwards, the process chain is not interrupted and the PCB can be forwarded to the subsequent process after successful reprinting. This is different when removing the PCB from the line – it can be fed in again and printed again. Or you can clean and print again. In both cases, however, 100% traceability is no longer possible.

Another problem during inspection is the reference height measurement: Typically an area is defined in the area of the pad to be measured which is set

Umeantech

Certifications:

- ISO 9001:2008
Quality Management
- ISO 13485:2003
Quality Management
Medical Devices
- AS9100D Aerospace
Quality Management
- IPC-A-610 Class III
Processing Standard

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FLEXIBLE MANUFACTURING TECHNOLOGIES, CUSTOMER-SPECIFIC SOLUTIONS

Umeantech, founded in 2004, is a leading EMS provider serving demanding customers in the industrial, communications, security and medical markets with a comprehensive range of engineering and electronics manufacturing services for products and systems. The company has state-of-the-art electronics manufacturing facilities and employs 40 qualified engineers, technicians and professional staff. With recourse to numerous flexible manufacturing technologies well thought-out solutions are developed, which are individually cut to the needs of the individual customer. The company sees it as its main task to supply an exact, customer-specific prototype and the corresponding production services.

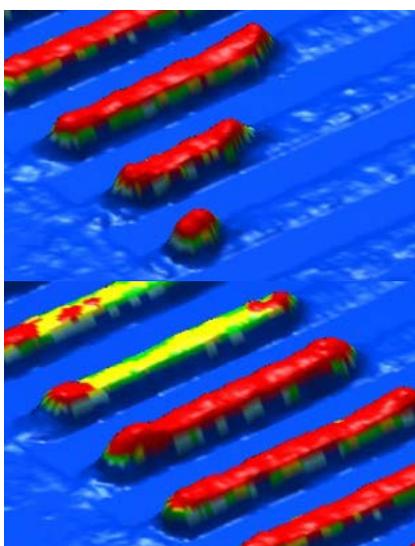
While at the beginning of the inspection it was not clear in which direction the



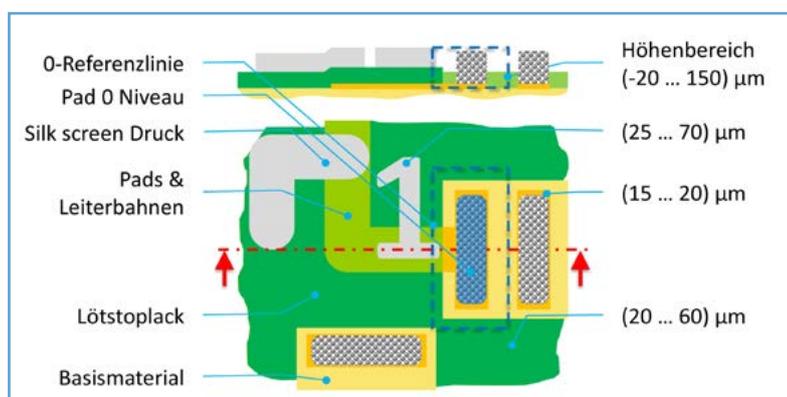
Ersa Rework System IR/PL 650 in use.

in relation to the unprinted pad as the reference height in order to determine the difference and thus the height of the paste after printing. If one then evaluates the entire area of the pad, the volume results. This works well as long as the layout of the PCB does not change.

However, the thickness and position of the solder resist often changes, especially when PCBs are purchased from different sources – this can also happen when changing batches from the same supplier. Trace positions or other changes in the range of the height reference measurement are directly included in the calculation of the volume. The solution is to re-measure the unprinted PCBs before printing. This is simply possible in the printer, only possible manually in the external SPI and not practicable for regular measurements.



The best solution is often to reprint the PCB.



Example Pad 0-height.

Of course, a possible existing print offset can also be detected and corrected. The strategy here is typically to correct a percentage value of the determined offset, for example 20%, and thus approach the optimum pressure. Of course, the whole process is dependent on the direction of printing. "The use of the VERSAPRINT 2 Ultra3 stencil printer increases our process window considerably – absolutely the right choice for us," says Umeantech boss Alexander Sigler, expressing his satisfaction with the latest acquisition, with which the Israeli company has set the course for the future. ■



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