

Application Center – The new Inline Concept



"High-Tech" for you

The new Application Center is situated on the third floor of the company's headquarters in Ottobrunn near Munich. In this context, "high" does not merely refer to the floor level. More area, new concepts and added system technology result in "high tech" in technical printing above the roofs of Ottobrunn.

The strong demand on the part of our customers for services provided at the Application Center required the definition of an improved concept. Especially the areas error cause analysis, customer-specific process development with focus on cost reduction for increased quality, process training and, last but not least, the further development of new printing technologies require different solutions for the orientation of the new Application Center.

To ensure that our process development is still comparable to your production processes, we have defined the new inline concept: The line comprises two modern screen and stencil printing systems manufactured by Ekra (X5 Professional) and ERSA VERSAPRINT S1 3D, a solder paste inspection system from Koh Young (KY 8030-2) and intelligent board handling systems from Asys. The plants have been arranged as a line so that you, the customer, can benefit from a near-practice test sequence enabling you to apply the results of the analyses directly in your production. In addition, the line structure offers the option of processing large volumes fully automatically and thus producing results that are secured in the long term also under statistical aspects.



In addition, we offer you the use of the Application Center for process training that comprises a theoretical and a practical part. Here, you have the opportunity to address specific issues in theory and in practice without obstructing the production process, while still experiencing the impact on the entire line.

Additional island concepts for screen printing (Ekra X5 STS), drying (Heraeus), balling (Wagenbrett WB300) and measurement (Keyence VHX, Leica M205C, cyber TECHNOLOGIES CT300 as an ERSA Hybrid Rework System HR 550) maintain the flexibility of the Application Center in respect of special processes or specialist measuring tasks. The production area of the Application Center has been designed as a clean area and is fully air-conditioned so that the printing and measuring equipment can unrestrictedly be used throughout the year.

Now, a separate area for cleaning the screens, stencils and substrates has been created since miniaturisation in printing technology has also increased the focus on the cleaning process as part of the overall process. A conscious decision was made to separate the cleaning area from the production area of the Application Center. It offers two fully automatic cleaning systems (Kolb CB300 and GMS MC5000) plus two manually operated cleaning stations with ultrasonic support (Gensonic).

Make use of the Application Center for Printing Tests

Customers are welcome to use the Application Center for executing their own tests. The experts work according to the customer specifications and operate the systems and machines. The execution of printing tests prior to the start of production is vital. Often, however, there are no capacities available in the customer's own manufacture, or they lack the peace and quiet they would need for an in-depth analysis of the problem.

The Application Center offers the following Services

1. Measurement of PCBs:

Position Measurement on Substrates

Identification of PCB distortions or usage breakdowns with subsequent adaptation of the CAD data for the metal stencil to ensure optimal printing on the pads. Printing faults and variation in solder paste application are thus minimised, while the process is more stable and the efficiency of the line is enhanced.

2. Evenness Measurement on Substrates

Inspection of the substrates for surface evenness in the areas relevant for the printing process. For example, elevations such as solder resist, vias, marking print or labels may cause massive printing problems. Such elevations will prevent proper sealing between the pad and the metal stencil, causing additional detachment during printing. This will increase the cleaning requirement in between printing cycles and also increase paste application. Measurement of the elevations allows for the integration of cavities in the metal stencil so that elevations are accounted for by free spaces and printing can be implemented without detachment. The surface scanner features a working range of (300 x 300) mm² and a dissolution of 0.1 µm in height and 1 µm in x and y.



3. Documentation, Measurement of Pad and opening Sizes

Pad and opening dimensions are measured by microscopes to detect any possible deviations from the sizes specified in the CAD data and to account for these during data processing, if necessary. In addition, images of substrates, modules, print and solder results are generated to illustrate fault mechanisms, solution approaches and printing processes. The microscopes have a magnification range of 16x to 160x.

4. 3D Measurement of Printed Deposits

Fast automatic and three-dimensional measurement of printed deposits using the solder paste inspection systems from Koh Young allows for statistical assessment of the print results. A direct comparison of the effects resulting from different parameters is thus possible. The system supports the verification of new module layouts with regard to the printing process and helps with the fault analysis of existing products.

At the companies of Christian Koenen, customers can benefit from sound process advice provided by experts: They adapt the processes in accordance with the customer parameters and materials. Continuous further development of the products guarantees our customers a long-term edge over their competitors.