

Application Study

DOMESTIC SWITCH ARRAY ASSEMBLY



TASK

Apply an adhesive-backed popple-dome keypad onto a mating printed circuit board (PCB) within a tolerance of 0.002".

Outlined below is a semi-automated as well as a fully automated solution.

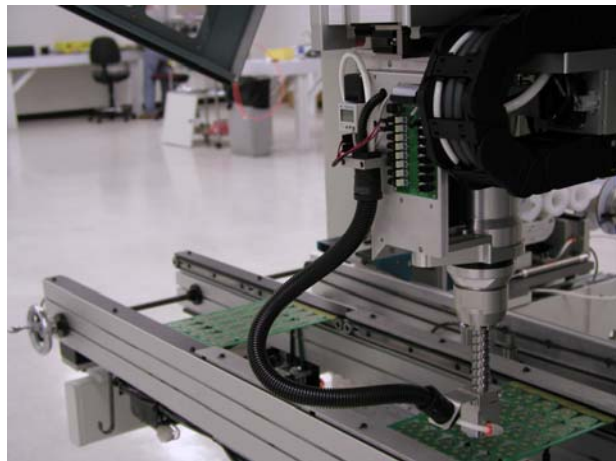
FULLY-AUTOMATIC SOLUTION

SOLUTION

- APAC
- Robot Mode RM3065
- Vision system
- SMEMA conveyor system
- Project specific tooling

FEATURES & BENEFITS

- The APAC's vision system inspects each placement position and re-centers the peeled dome switch array before actual placement. The APAC thus reaches the required tight placing tolerance of 0.002" even as the dome switch array itself shows a significantly higher tolerance.
- The conveyor system and SMEMA interface allow the APAC to communicate with succeeding production steps, resulting in a fully integrated and automated assembly line.



Application Study

SEMI-AUTOMATIC SOLUTION



CHALLENGES

- Both the PCB and the popple-dome arrays show high tolerances.
- Placement accuracy is critically important to ensure functionality of the finished mobile phone.
- In this particular instance, the customer required delivery time of less than 2 months.

SOLUTION

- Model 3065
- Customized chuck
- Customized nest
- Bench top configuration for semi-automatic operation
- X-axis correction

FEATURES & BENEFITS

- AccuPlace's patented peeling technology with the optional x-axis correction allows for exact peeling and placing of the adhesive component, even if the tolerance of the dome switch array on the liner is higher than the required placement tolerance. Tolerances of dome switch arrays on the liner could thus be eliminated.
- The Model 3065 is a standard solution that requires only customized tooling of chuck and nest. This standardization enabled AccuPlace to meet the customer's delivery time request. A custom equipment manufacturer could not meet this request.
- The bench top platform consisting of a base with feet, built-in power supply, and 2-hand control provides a simple cost-effective solution that captures the quality benefits of automation.

