



CASE STUDY

All Connected Seamless by Software: From Production Line to Business Report

Fully integrated production planning and control from machine software to software applications higher up in the automation pyramid. The solution from Panasonic Connect and its partner SMT House increases the level of automation – and so the competitive edge of its customer, an innovative power electronics manufacturer.

Client: Kemptron Oy

Location: Lahti, Finland

Product(s) supplied:

NPM-GP/L

NPM-W2

Challenge

The company is specialized in electronics manufacturing services, particularly for demanding applications in power electronics. This requires high flexibility from the machines to manage even odd-shaped components but also a full integrability into other systems.

Solution

Combining high flexibility and full integration: SMT House installed a completely new production line with a NPM-GP/L printer and three NPM-W2 Pick-and-Place Machines.

"Our High Mix Low Volume production deliver more than 30 different PCBA boards and totally about 2000 individual PCBA boards daily. We were looking for a solution capable of a fast assembly speed but also high automation level and very fast set-up changeover times. One of the reasons for Panasonic were the machines, another the renting solution offered by SMT House, and finally the good service before, during and after the installation."



Jari Takala
General Manager
Kemptron Oy

Still a young company but already an old history: The mother company Kemppe Group built one of the first frequency converters in the market, in 1977 the first welding inverter. Kemptron Oy was established in 2024 as a spin-off from Kemppe's electronics division. Located in Lahti, the 130 employees are specialized in electronics manufacturing services, particularly for demanding applications in power electronics. Company's portfolio has more than 1.000 different active PCB boards. Kemptron's capabilities include producing circuit boards, subassemblies, and transformers, targeting industrial OEM clients who require custom power electronics solutions.

Next to the final assembly of the PCB boards for the welding machines of Kemppe, Kemptron supports the other sister company Kempower which is producing DC fast charger for EV automobiles, offroad vehicles, boats or even airplanes. By leveraging the Kemppe's experience and expertise, Kemptron aims to become one of Finland's leading electronics manufacturing providers. General Manager Jari Takala points out: "Strategically it made sense to separate the Electronics Manufacturing as an own company serving two sister companies but also other customers. Customers in Europe appreciate the value added and the prototyping in Finland with its experience and dedication on service and quality."

Flexible & Future-Proof Hardware

So far, Kemptron only used a Panasonic Through Hole Radial Machine, the SMT lines were from another supplier. The Finnish Panasonic partner SMT House helped with the idea of switching the pick-and-place machines to the Japanese brand with the European headquarter in Munich, Germany. In fact, SMT House developed and installed a completely new line including a printer, three NPM-W2 machines, a SPI and AOI inspection machine and the reflow oven.

The requirements were high. Jari explains "The floorspace efficiency must be good and the machines needs to be easy to program for the operators." The Paste Printer needs to be very robust and high quality. Additionally useful, the general manager considers the automatic preplacement of solder paste, so no production stops for adding the solder paste manually and no risk of running out of solder paste on the stencil.



For the NPM-W2s he mentions a couple of reasons: "First because we run in a High Mix, Low Volume operation we must be capable to make more than ten set-up changeovers per shift. We needed to get a machine that can handle this the best." The assembly speed must be quite fast, and for the same reason, the machine needed to have enough feeder capacity. In addition, the NPM-W2 has a high availability with useful features, such as early warnings that the components are running out in the next five minutes. Also, the flexibility in the handling different components convinced Jari Takala and his team." In Power Electronics there are lots of processors and controllers used. All placed on the board, double side, with both sides full of SMT components."

Finally, the general manager concludes that as miniaturization and integration of different function on the same board continues in Kemptron's field of business, the machines needed to be future proof.



Advanced Software Integration

The new production line with Panasonic's advanced software PanaCIM, could be integrated seamlessly into the MES, the Epicor Kinetic ERP System and automated smd-warehouse. "The system we have set-up ensures that even the most "creative" operator cannot put wrong components on a board", so Takala says.

From day one the ambition of the manufacturer was clear: The MES interfacing with the ERP system needs to ensure that the pick & place machines receive updated order information and material requirements. "In the case of Kemptron it synchronizes with inventory management systems to automatically adjust stock levels based on components used during pick & place operations", explains Matti Luotola, Key Account Manager at SMT House.

It ensures complete repeatability of certain processes in the factory - precise control of machine settings. This is followed by further steps such as: monitoring and tracking of changes. Faster production start and on-time execution of orders.