

Heller Equipment Increases Reliability of Electronic Assembly



“We chose the Heller reflow ovens due to their reduced energy consumption and ability to reflow large BGA devices with a high thermal mass.”

Chris Hobson,
Plant Manager, Newbury Electronics.

BACKGROUND

Leading printed circuit board manufacturer, Newbury Electronics has its origins in 1956 when the business was established as a spin off from Newbury Engineering Limited. Manufacturing printed electronic circuit boards on the same site in Newbury for over forty years, the company is the longest standing, continuously trading, PCB fabrication and assembly manufacturer in the UK.

The Newbury Electronics Group is composed of three divisions, Newbury Electronics, PCB Train and Newbury Innovation making it the complete CEM offering a ‘one stop shop’ for PCB design, development, fabrication, assembly, testing and box build.

Working within the aerospace, space, automotive, medical and industrial sectors, Newbury Electronics is one of the largest producers of prototype and small batch PCBs in the UK. The company prides

itself on high quality production processes. To ensure standards and capability are unrivalled, the company invests in advanced innovative production machinery.



CHALLENGE

Newbury Electronics was looking to replace Conceptronic Concept 60 Reflow Ovens first installed 10 years ago.

Chris Hobson, Plant Manager, Newbury Electronics explains: *“They gave us many years of good service, but with a 24kw power consumption per oven, and spares for the machines becoming harder to find, it was time to invest in new equipment.”*



SOLUTION

To ensure it continuously uses the most-advanced technology and systems, Newbury Electronics took advice from Altus Group and invested in three Heller Industries 1707 Mk3 Convection Reflow Ovens with extra cooling zones retrofitted as part of PCBA manufacturing process.

“An important benefit of Heller Industries technology is their broad range heating zone configurations,” said Mike Todd, Quality and Operations Manager, Altus.

“These systems also support customers from entry level NPI volumes, through to the fastest throughput needed. Electronics’ manufacturers are seeking a high-performance ovens at positive net present project value. With Heller’s designed range, there is a system for all environments and budgets. In our view the Heller range packs the most performance available into each pound spent.”

The 1700 models support high mix/medium volume throughput at speeds up to 60 cm per minute, while conserving valuable factory floor space. Rapid response times and precise temperature controls assure process uniformity, regardless of component density or board loading, with identical profile performance in either air or nitrogen.

Heller Industries 1707 Mk3 Convection Reflow Oven

- The most efficient heat transfer from extra high volume, high-velocity, heating modules, producing heater module response of less than one second to temperature changes of less than 0.1°C, thereby maintaining profile integrity for heavy board loads.
- Wide process window for “universal profiling” – allows many different boards to be run on a single temperature profile.

- Advanced 5 thermocouple PCB profiling and process parameter logging capability with the capacity to store up to 500 temperature recipes and 500 profile graphs.

RESULTS

“The Heller 1707 Mk3’s draw 7.5kw per oven, so significantly less electricity than the Conceptronic Concept 60 Reflow Ovens. They also have the ability to reflow large BGA devices with a high thermal mass. As these components benefit from the additional cooling after reflow, giving a smaller crystal structure to the solder, it leads to more reliable solder joints within electronic assemblies,” said Chris.

THE FUTURE

Newbury Electronics has a policy of continuous investment to ensure they are investing in the latest technology, processes and practices to give customers the best possible end products. With expansion of a third Newbury Electronics site on the horizon, the company will be making significant equipment investment.

“We are excited for the future and look forward to working with Altus as we all move to growth and recovery from what has been an extraordinarily challenging trading period,” concluded Chris.