



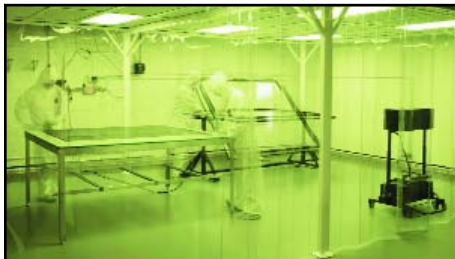
ELECTRONIC MFG. SERVICES (EMS)

Brigitflex Takes Challenging Boards from Concept to Creation

By Brigitte Lawrence, Brigitflex

It takes a unique perspective and a lot of expertise to build the PCBs that others turn down. These boards often have challenging dimensions, novel materials and embedded elements, but in the end, still have to be delivered functioning to the customer.

Through Brigitflex's 40 years of experience, the company has manufac-



Brigitflex's cleanroom keeps particles in the air from interfering with board inspection.

tured all types of circuit boards. From simple to conceptual, the company professes to try almost anything. It has developed a unique ability to understand the processes involved in creating large-format circuit boards on a wide variety of materials.

Many of the company's projects include antennas, RF filters and R cards. Brigitflex has built boards in sizes of 5 x 9 ft (1.5 x 2.7m) and 1.3 x 16 ft (0.4 x 4.9m) and handles any thickness of material. The company has an in-house vacuum lamination press that can press material up to 24 x 36 in. (61 x 91 cm) in size. Material sizes larger than this are supplied from an outside source.

The company builds custom tooling, fixtures and entire work environments to accommodate these large-format boards,

keeping handling issues to a minimum. These custom-built fixtures include transportation carts, vacuum tables for imaging and light tables for inspecting photolithography. The company also has a cleanroom for imaging large panels when small circuitry is required. This helps to keep any particles from interfering with the imaging process.

Clear Communication is Key

From the beginning, open and clear communication is the key to a successful product build. Materials, customer requirements, price points, and delivery schedules need to be discussed before a quote is even sent. This ensures that both parties are confident in the build.

A drawing may look fairly simple until tough requirements crop up in the final product. These may include size or shape, material type, copper thickness, etch tolerances, multilayer lamination cycles, and drilling specifications.

Most builds that require special materials revolve around the lead times of that material. In many cases the lead times can be quite long and need to be taken into consideration.

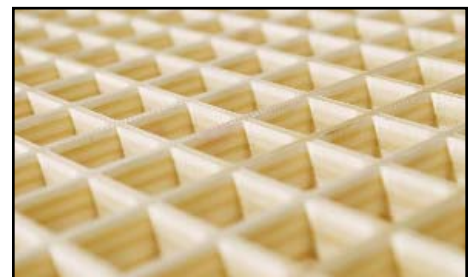
Often, a trial run or test sample must be created so that process steps can be tested and recorded before moving onto the final product, saving money in the long run.

Some of Brigitflex's most recent projects include successfully pressing OhmegaPly® resistor material to Rogers RO6202 laminate for a high-frequency, multilayer board with a panel size of 24 x 36 in. (61 x 91 cm). The company has also recently begun to plate copper to stainless steel laminated polyimide for a heater application, with dimensions of

1.2 x 16 ft (0.4 x 4.9m) and a thickness of 3 mil (76.2 µm).

Brigitflex has come up with a process to create fine-line circuitry on Kapton as thin as 0.5 mil (12.7 µm), as well as laminating resistor material including Ticer and Ohmega. These thin boards are attached to a thick support backing to avoid any damage during handling. The boards are then shipped with the backing as well.

The company strives for a positive relationship with its vendors. Communicating customer requirements to vendors is important so that specialty requirements can be met. The company also informs customers of vendor-specific requirements and capabilities.



Custom material built 0.5 in. (1.3 cm) thick through sequential lamination cycles.

In the incredibly fast-paced world of technology, many engineers have ideas that need to be tried and proven. Brigitflex is committed to these types of niche projects, turning them into successful and repeatable products.

Contact: Brigitflex, Inc., 1725 Fleetwood Drive, Elgin, IL 60123

☎ 847-741-1452

E-mail: brigitflex@foxvalley.net

Web: www.brigitflex.com □