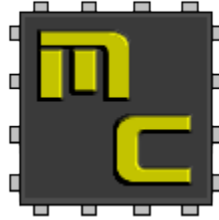


Matrix Circuits



Excellence in Electronics Manufacturing

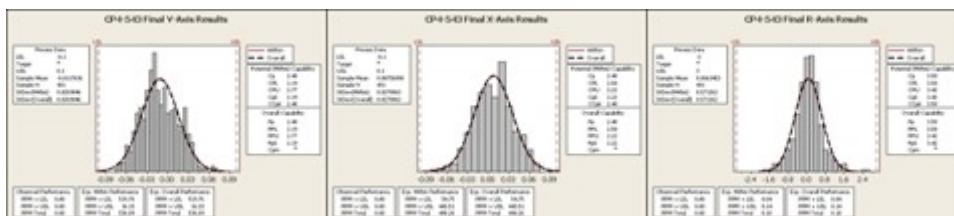
Who we are:

Matrix Circuits is an electronics design, assembly, manufacturing, and test facility located in the Heartland with fast delivery in the U.S. and to points beyond. All our personnel have extensive industry experience with fortune 500 companies. Our work meets the highest standards of quality, and we are ISO 9000 compliant.

What sets us apart:

Our people have commitment and expertise second to none in the industry. With their experience working for different companies, we know what works and what doesn't. The best practices are combined to give our customers the edge they are looking for. Our production efficiencies enable a unique combination of lowest possible cost with the highest level of quality.

We have a highly trained maintenance staff, and using advanced technology - the (Process Optimization Device), they are able to keep our equipment placing to an exceptional degree of accuracy. This ensures the highest quality product possible off the assembly line. In addition, we employ a state of the art Automated Optical Inspection system (AOI) and a Process Management Device (PMD). These systems reduce the possibility of defects off the line to near zero.



Process capability is documented on a regular basis, and verified to be at or better than 6 sigma.

Services

Design

Engineers at Matrix have more than 20 years experience designing printed circuit boards using software packages such as Mentor Graphics “DX designer”, “Pads 2005”, Cadsoft “Eagle”, and many others. Our knowledgeable staff designs to IPC standards from schematic through layout and assembly. We can bring your design from concept to reality.

Assembly

Our team can manufacture your complete product; from parts placement, through housing, testing, and packaging.

Capabilities

- RoHS capable processes
- Solder paste 16” X 18” maximum board size
- SMT 0204 and larger, fine pitch and BGA's
- Process Monitor Device (PMD) eliminates human error during changeover and assembly process and monitors all part placements
- State of the art Automated Optical Inspection system (AOI)
- Reflow convection with N2 inert option
- IPC certified repair/rework operators
- Programming and testing services
- System level manufacture and test
- RMA warranty repair services

We use top of the line Fuji placement machines, and employ highly trained experts on this equipment. Along with the Process Optimization Device (POD) this ensures the best placement accuracy possible.

Test

Matrix Circuits offers a wide range of test solutions. We can help with test software, hardware design and implementation. This includes but is not limited to: determining and documenting your requirements, design of code to meet those requirements, debug of code, and documentation of finished software packages.

Custom test solutions are available also. We design 19” rack mount test systems using National Instruments Labview and Teststand products, as well as Microsoft Visual Studio to meet your needs. Programming can be done in a wide array of languages.

Some tests we have designed are:

Keypad/display tests using either visual or tactile verification by a human operator, or fully automated keypress and/or vision system display testing including walking bits, and testing for LCD ghosting or lost segments.

Communications testing including FCC compliance testing, frequency and power tuning, audio distortion, bit error rate and much more.

Vision system integration.

Matrix circuits can provide custom test fixtures. This service includes: determining and documenting requirements, design to meet requirements, debug and documentation of the finished fixture.

Equipment

Screen Print



The bare boards are fed into an environmentally controlled screen printer to have leaded or lead-free solder paste applied. These machines can print boards with fine pitch components. We can utilize vacuum plate or board edge with standoffs to keep the board stable during this process.

High speed chip placement



The Fuji CP-IV-3 is a high speed chip placer (30k parts/hr) with exceptional placement accuracy. The parts are picked from one of 160 feeders with a turret head, then passed over a camera and inspected by the advanced vision system before placement.

Matrix Circuits employs a highly trained staff to maintain and calibrate our equipment using our proprietary technology. We hold tolerances meeting or even exceeding the OEM specifications. Our placement accuracy is documented and available for our customers. Ask if your current manufacturer will do the same.

We statistically evaluate each machines current placement accuracy, then send corrections to the machine giving the most accurate possible placement. This is done on a continuous basis, and the data used to identify any worn parts or other anomalies before they degrade quality.

Flexible Placement



The Fuji QP-242E is a flexible placement machine with exceptional accuracy, and is capable of placing parts in each of the four modules simultaneously. Parts are supplied from tape and reel, stick feeder, or from a tray and passed over a camera to be inspected for orientation, bent leads, missing balls, etc. then placed.

Our staff uses proprietary technology to ensure the highest placement accuracy possible. This information is documented and available to our customers.

Automated Optical Inspection



Automated Optical Inspection (AOI) is a powerful tool for assessing workmanship compliance in our assembly process. Our quality assurance processes address the ever increasing density, diversity and quality requirements of our customers by maximizing our production efficiency. AOI eliminates the subjectivity and variability associated with manual visual inspection. Systems are integrated into the automatic assembly process to provide 100% visible component placement and/or solder joint inspection.

This reduces the need for expensive rework while increasing throughput and assuring quality.

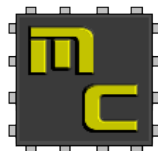
Reflow oven



With 8 heating zones and 2 cooling zones, the Heller 1800 reflows both leaded and lead-free solders with ease. The boards come out of the oven ready for assembly, testing, and shipment.

Our unique lean manufacturing techniques allow the lowest cost of production with the highest level of quality. We get it right the first time. Give us a try. No job is too small.

Matrix Circuits



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