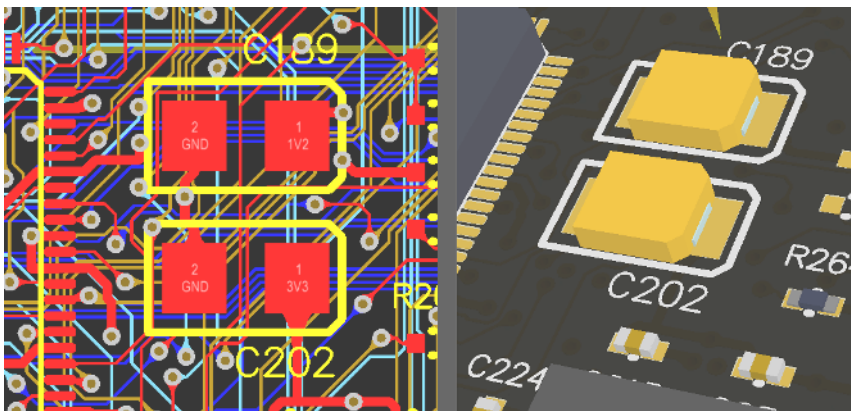**MATHIS ELECTRONICS**

Capabilities and Services

Engineering

- Creation of schematics and generation of appropriate PCB files

When we Design / Redesign your boards, we give you all the files which include:
- Schematics Files
- Gerber Files
- Pick and Place Files
- PCB Layout
- PCB routed
- OBD++ Files
- 2D CAD drawings
- 3D CAD Model
- Native Altium Design
- Project files

- Firmware / Software Development

We offer programming in the following languages:
- C, C++
- Java
- Visual C#
- Python
-Micropython
- Arduino

Hardware descriptive languages:
- HDL
- Verilog
- VHDL

With all of our engineering services we always incorporate DFM (Design for Manufacturing)

DFA (Design for Assembly)

- Prototyping

We can either use your designs or help you make your idea into a reality with the help of our experienced engineers.

Services we offer for prototypes include:

-Purchase all components from a BOM or use customer supplied components

-Assembly of the boards. This includes boards that have surface-mount components, Through-hole components, combination of TH and SMD. Single sided or double sided

-Testing of prototype can include:
- -Functional test
- -Burn in test (cycle testing a board to confirm board will stay within customer specifications after many cycles. Can be tested for a day, week, month)

After receiving components, we complete a prototype in a week or less.

Assembly

All boards are assembled to ensure that every part placed is the correct part and to keep within customer specifications.

-Surface-mount (SMD) Assembly
-Single or Double Sided placements
-Flex Circuits.
- Mixed technology (SMD and TH)

We can place
-passive components 0201 and larger
-hand placed components (such as jacks that lock in)
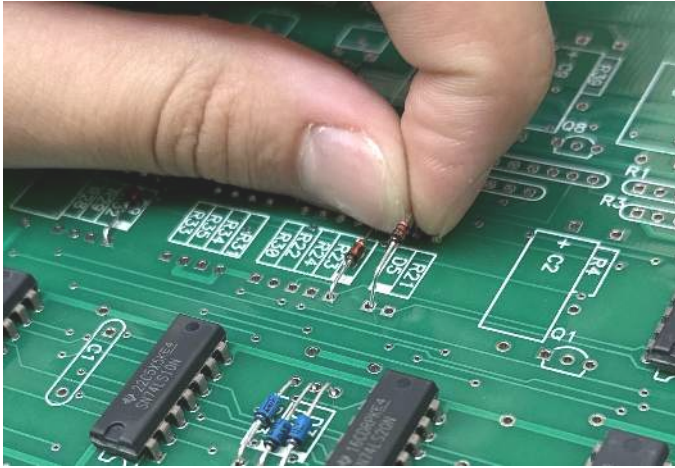-Quad Flat Package No-Lead (QFN)
-Quad Flat Package (QFP)
- BGA

Maximum board size for pick and place machine is 350mm(13.78inch) by 508mm(20 inch) for leaded and Unleaded(RoHS)

Before every production run we run a Reflow oven profile to ensure that we are getting correct temperatures.

- Through-hole (TH) Assembly

We hand place all through-hole components.
Mixed technology (SMD and TH)

Solder Limitations:
Leaded board - Maximum size is 430mm(17 inch) by 430mm(17 inch)
Unleaded (RoHS) - Maximum board size is 280mm (11 inch) by 178MM (7 inch)

-Hand soldering

Sometimes boards need a human touch and cannot be soldered with a machine or put through a wave solderer. Our IPC J-STD-001 certified technicians are all up to date with IPC standards and are able to solder whatever you need

Rework-
Do you have a board that needs to be modified?
From infrastructure power management to the elevator industry, Mathis has been trusted and developed the skills, expertise and knowledge from 40 years of experience to help you rework and/or modify your boards.

Additional services
-Box Build Assembly
-Conformal Coating