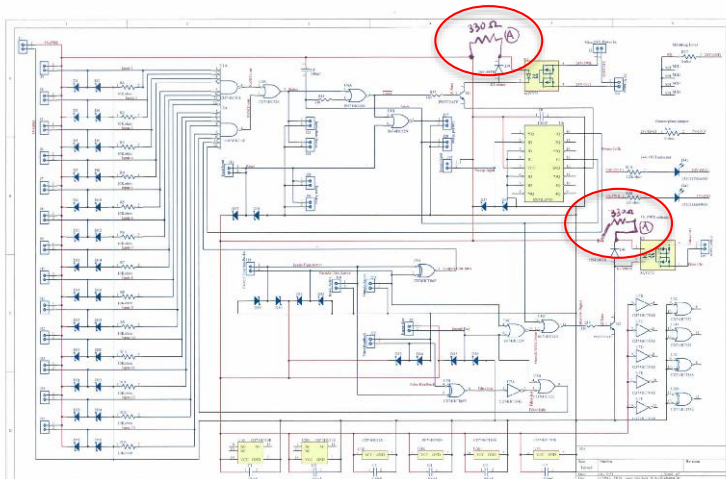


EIC DIRC Laser Interlock PCB Revision

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2023-09

This month an engineering change order (ECO) was ordered for the EIC DIRC Laser Interlock board. An issue was found during the testing of the prototype version (revision 0). The board was burning up the relays when power was applied to the circuit. The engineer troubleshooted the circuit and determined that the relay coils were drawing too much current and needed an additional relay in series with the coil power circuit for each of the two relays. After determining the value of the relay, a modification of the schematic was developed, by hand and I carefully studied the changes to determine the correct change for the Altium schematic circuit. After making the change, I reviewed the schematic with the engineer to ensure the correction was as intended.

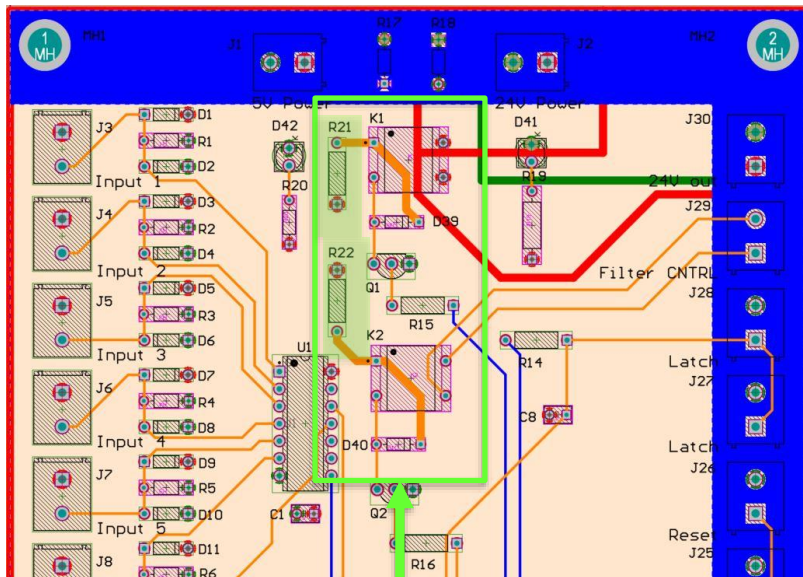
- Study the engineering changes and update the schematic
- Update the PCB design with the schematic changes



Notes
⊕ 8/1/2023 - on K1 and K2, a 330Ω resistor is needed between the 5V power and pin 1 on K1 + K2

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Once the schematic change was verified I updated the changes to the PCB design and placed the new components. Since the changes were minor, I used open areas in the design making sure to alter the design as little as possible. I routed the new traces for the component and reviewed the latest changes with the design engineer.



330 Ω resistors R21 and R22 were added for Rev 1

Finally, I prepared an engineering review package for the revised circuit design and presented it to the DSG engineering group for review. After no other changes were requested, I packaged the design files and sent them for manufacturing review and quote. The revised circuit board was ordered and will be populated by the DSG fabricator after it arrives and tested to see if there are any issues.