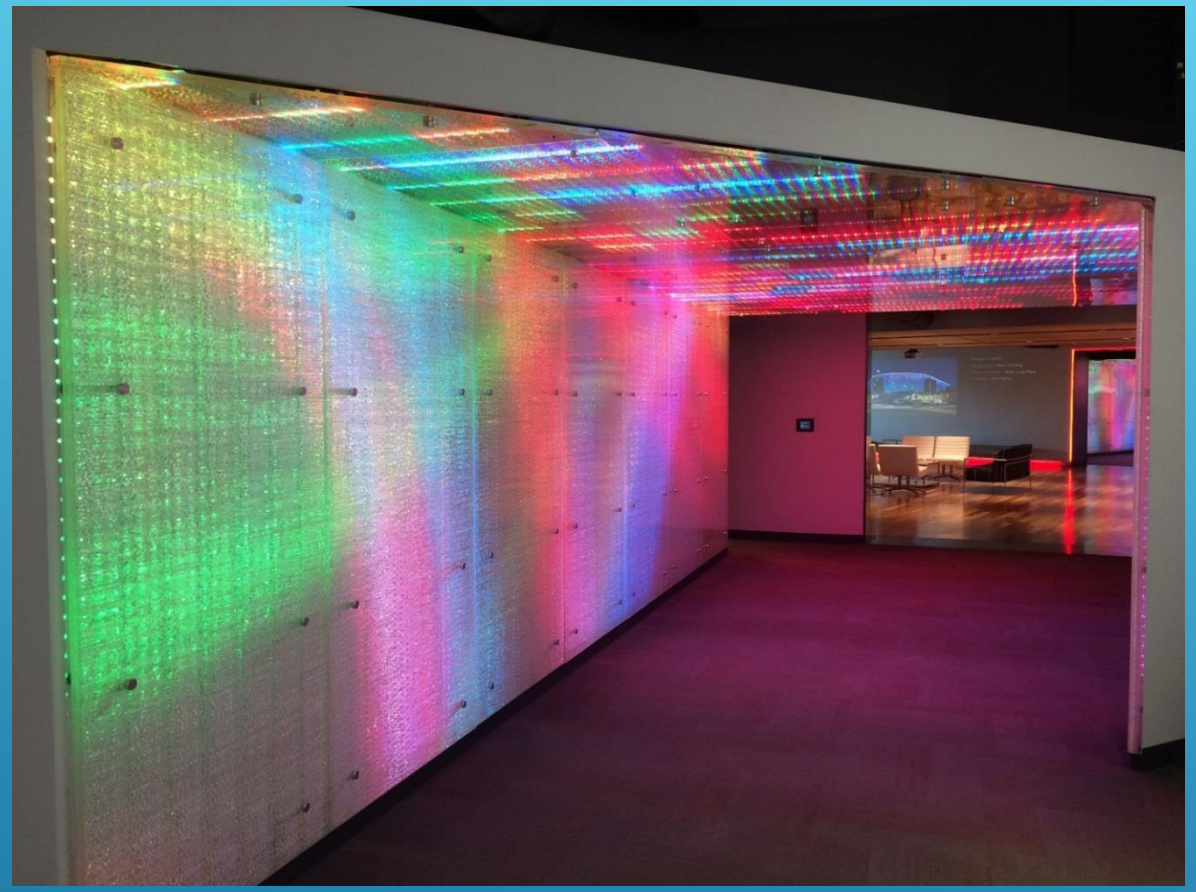
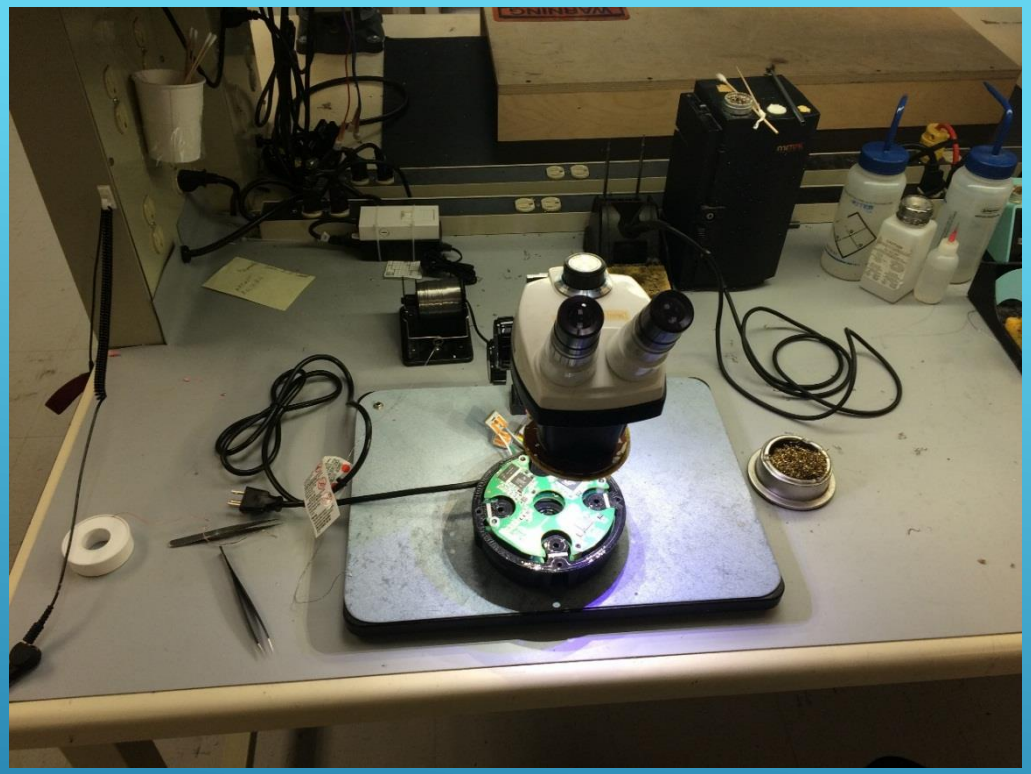


COOP PRESENTATION: ELECTRICAL ENGINEERING

By: Matthew Elia



- Soldering under the microscope
- PCB assembly
- Basic wiring and connection techniques
  - I.E. heat shrink, desoldering braid, use of the heat gun to remove components

SKILLS I LEARNED

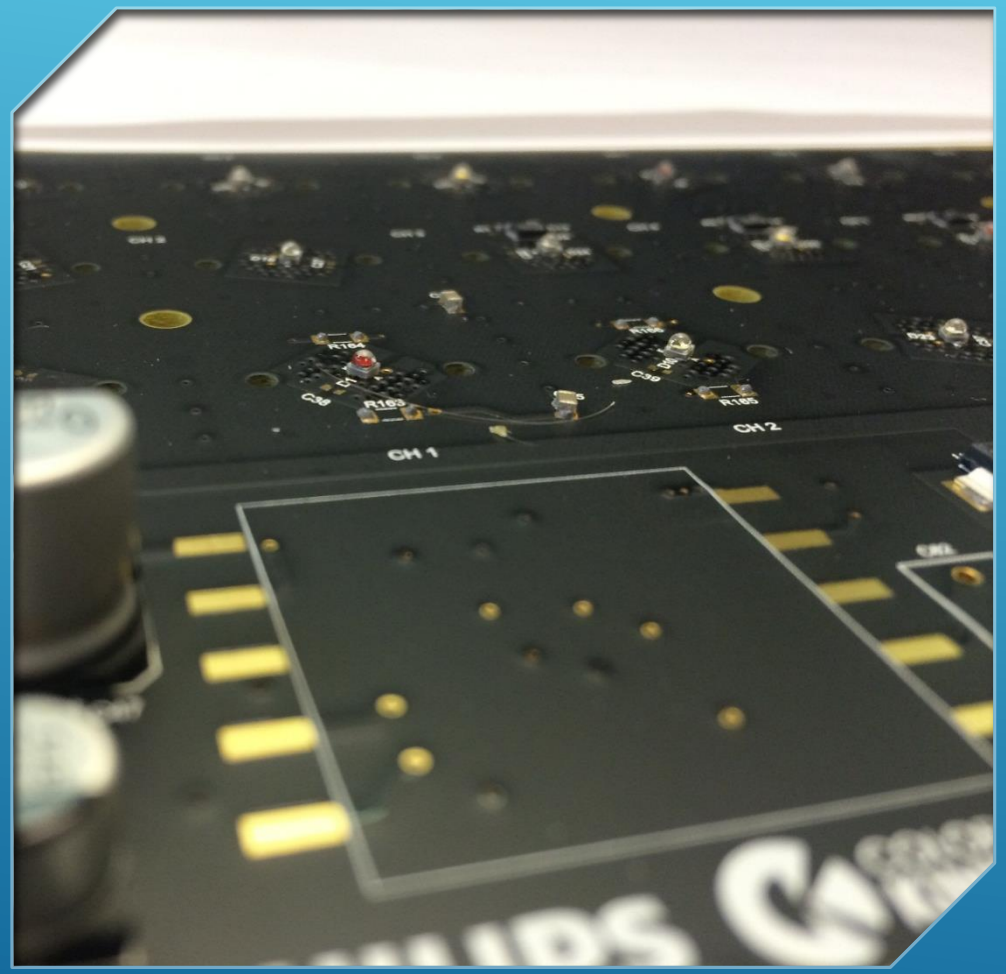
BOARD CONSTRUCTION

- Assembly of kits
- Organizing and reviewing a Bill of Materials
- Pasting and placing components on a board
- Baking and adding on of through- hole components

Reflow Oven

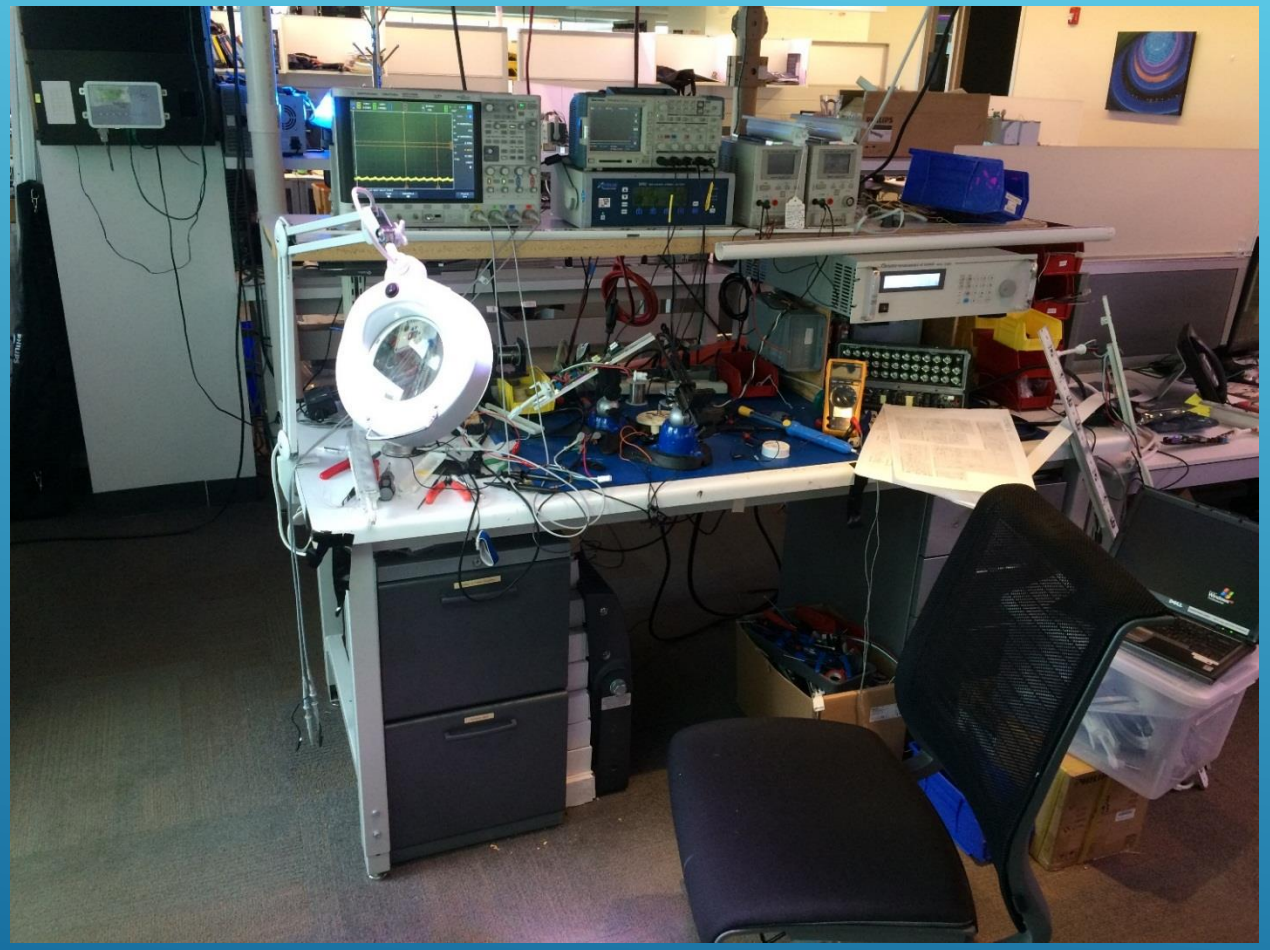
Capacitor

BOARD CONSTRUCTION (CONT.)



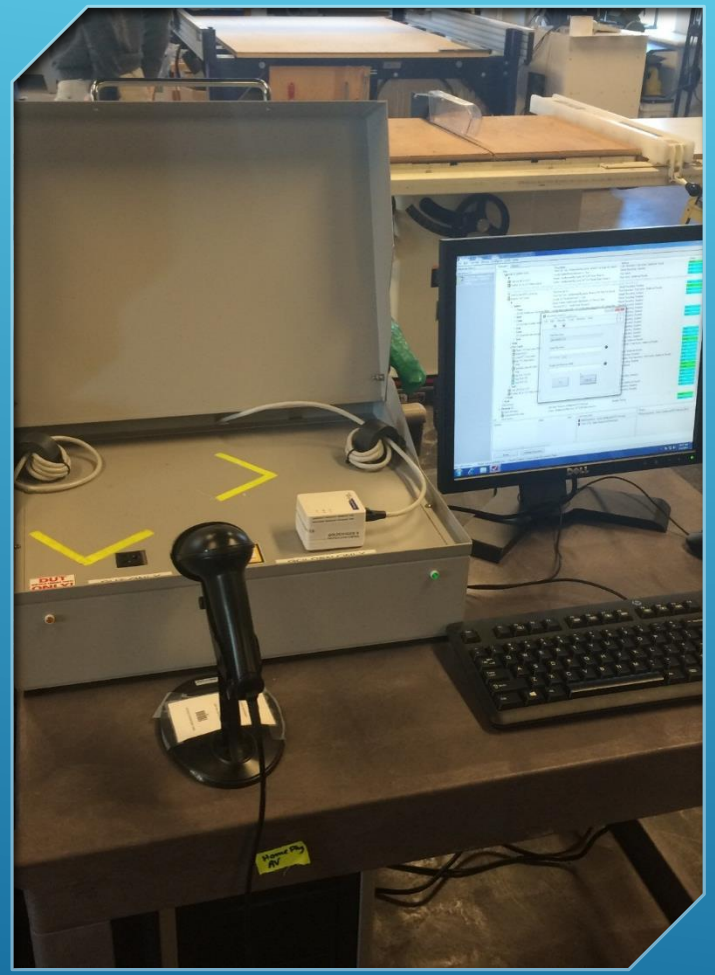
LEARNING ABOUT COMPONENTS

- Reviewing BOMs and ordering parts
- Placing components on new and old boards
- Learned about new components not seen before
- Absorbed the necessary jargon such as size and type



TESTING

- Checked basic functionality of built boards (voltage rails etc)
- Programmed boards by installing firmware
- Troubleshot boards when certain circuitry was not working properly
- Learned to use various testing equipment not used before

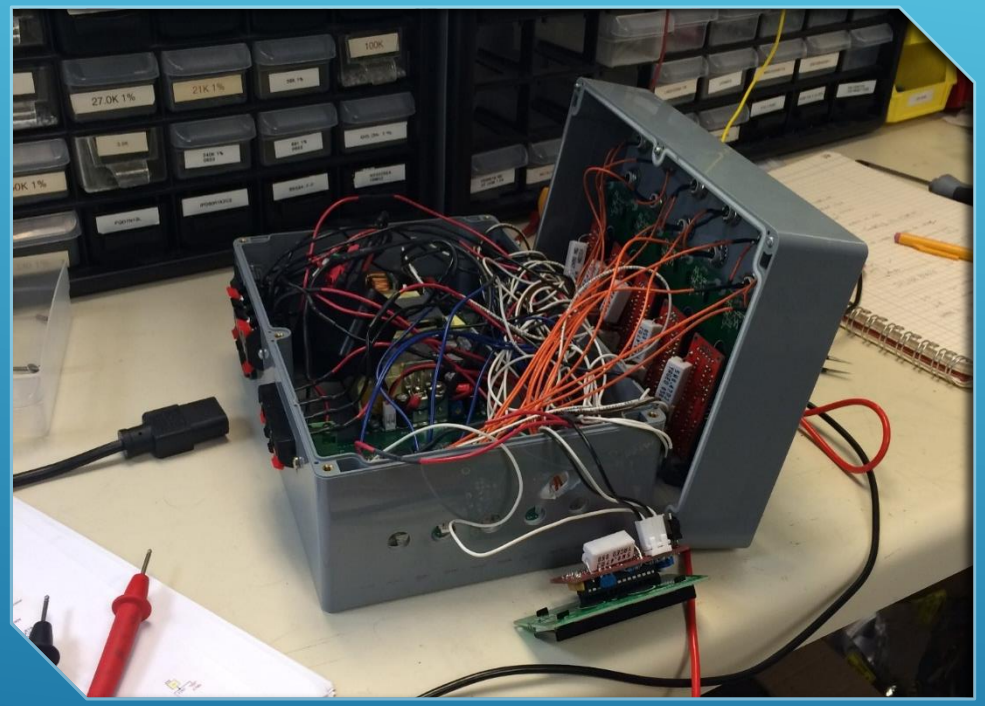


PLC TESTING

Tested both Power Line Communication Data Enabler and Reciever

Ran through testing with varying frequencies to make sure that it would operate at our specified frequency.

Used off the shelf PLC communication devices and



TROUBLE SHOOTING

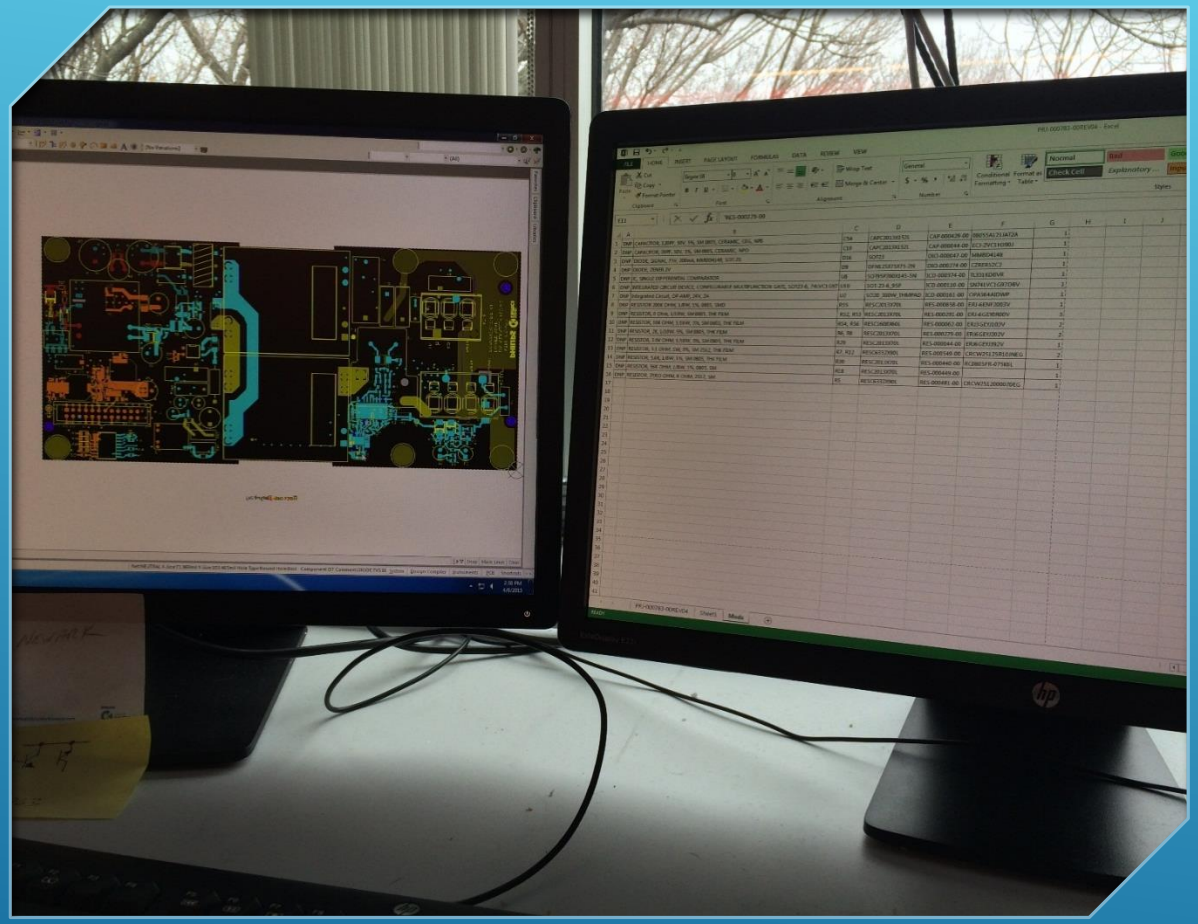
Learning techniques and tricks to more quickly and correctly identify the problem

Learned how to safely identify the problem without creating new problems in the process

Ex)

- Each board build
- 6 channel driver box
- Antumbra boards that would not program

LEARNING NEW SOFTWARE



- Learned about all the basic software used at Philips Color Kinetics

(Quickplay Pro, ColorPlay 3, KTP, CK Firmware Updater, Intellipower Manager)

- Learned other important software applicable elsewhere in my Electrical Engineering career

(Altium Designer, Arena, Perforce, Microsoft Office Suite, Avitar)

HOW A COMPANY RUNS

- Meetings
  - Weekly Team meetings
- Design Reviews
  - Working together to critique and bolster an engineers schematic, layout, etc.
- Communication between Engineers
  - Conversations to solve common issues the best way

TALKING WITH THE ENGINEERS

- Observing how Engineers interact and how they work to create the best product
- Asking questions and learning through the guidance of all the Engineers and Technicians who work at PCK
- Looking in on how an engineer might solve a problem he/she is often faced with