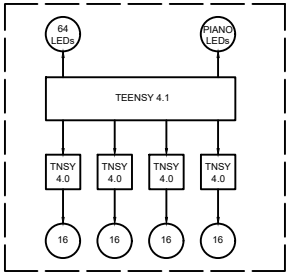
CONCEPTUAL FLOW

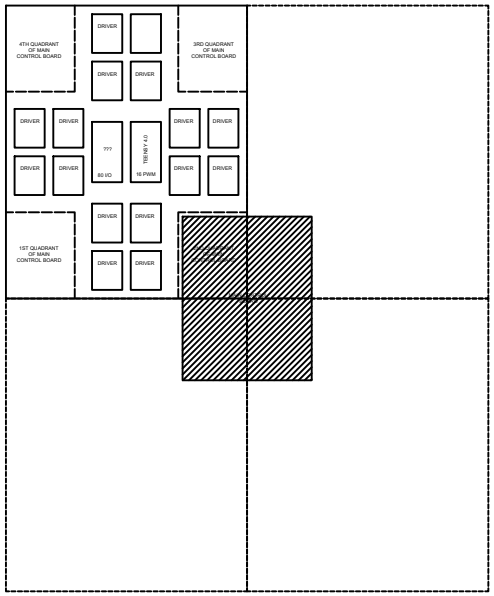


NOTES AND CONSIDERATIONS

- 64 stepper drivers
- Maximum PCB sizes:
  - -- 100x100mm 2 layer
  - -- 50x50mm 4 layer
  - -- no 6+ layers
- i/o to consider per stepper motor:
  - -- 1 step pin (direct contact with microcontroller)
  - -- 3 microstep pins (volume control)
  - -- 1 enable pin
- direction pin optional or net tied, not individual

PCB LAYOUT CONCEPT 1

- 5 PCBs in total - 4 driver boards, one control board.
- 4 teensy 4.0's, 1 teensy 4.1
- Design allows for all 4 driver boards to be identical, changing usage according to position



NOT VIABLE - CANNOT PLACE COMPONENTS ACCORDING TO CONSTRAINTS

PCB LAYOUT CONCEPT 2

- 3 different types of PCB's, stepper cards, 2 driver boards, and a control board
- 2 teensy 4.0's, 1 teensy 4.1
- control board connected to 2 driver boards with cable harnesses
- each driver board has several stepper cards, containing multiple stepper motor drivers.
- These stepper cards are inserted vertically with pin headers, and act like cartriges