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Solderless Protoboards

EECS 100

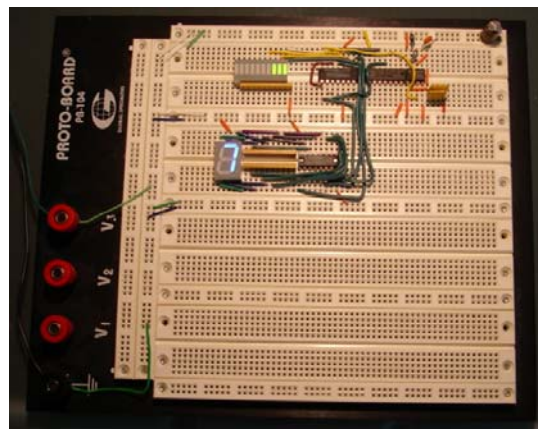


Figure 1 Circuit prototyping on a solderless protoboard.

Solderless protoboards are a convenient and quick way for prototyping electronic circuits. Circuit components and wires are placed by plugging their ends into small holes. Metal strips connect adjacent holes as illustrated in Figure 2. Some boards like the one in Figure 1 have wiring posts at the edge of the board, which are useful for making outside connections (e.g. to a power supply). The wiring posts are not connected to the breadboard internally; to use them, place wires between the posts and the breadboard.

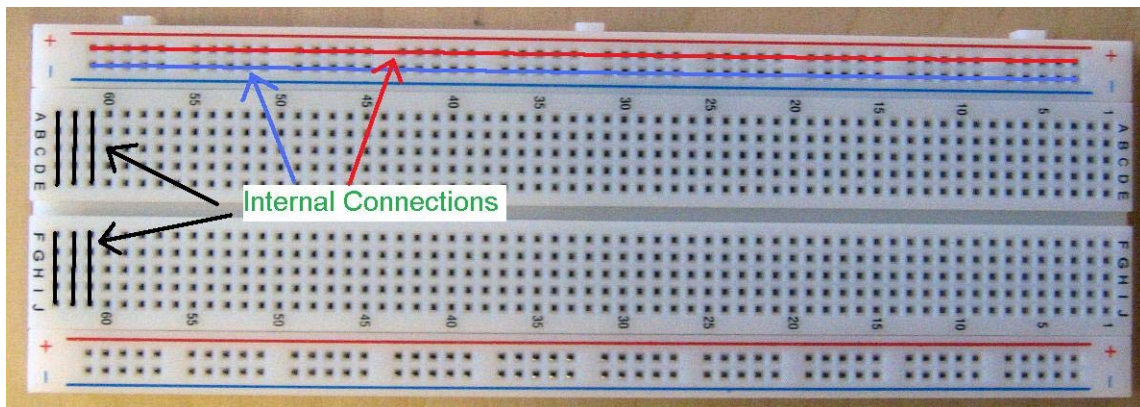


Figure 2 Electrical connections internal to the protoboard.

Careful organization pays when prototyping circuits. Some general rules to follow are:

- Use short wires and make sure the bare ends are properly inserted into the board. Tall loops of wires have a tendency to fall out when making other connections or measurements. Such errors can take a lot of time to track down. You can use the continuity test function of the multimeter if you are unsure about a connection.
- Avoid bare wires from touching and making unintended (or unreliable) connections.
- Consistency with wire colors (e.g. black for ground, red for the positive supply) helps when tracking down wiring errors.
- When prototyping large circuits it pays to proceed in sections and to thoroughly test each part of the circuit before adding components.

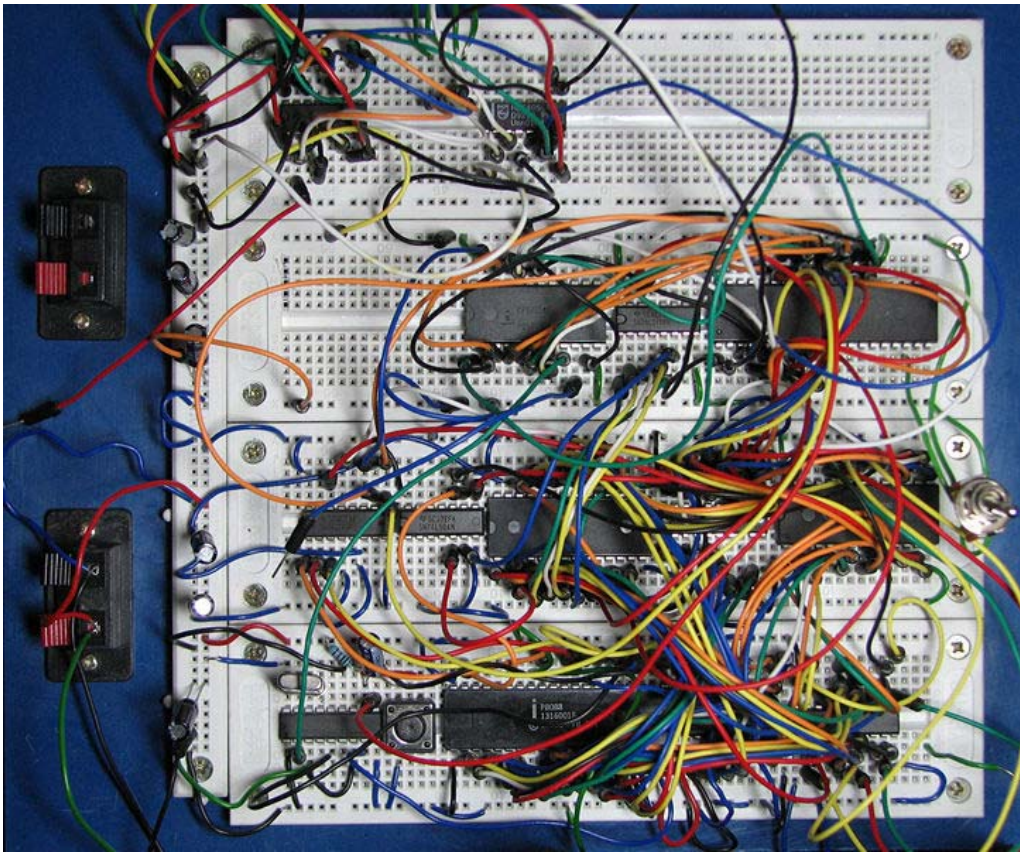


Figure 3 A wire falling out of this mess is extremely hard to find.

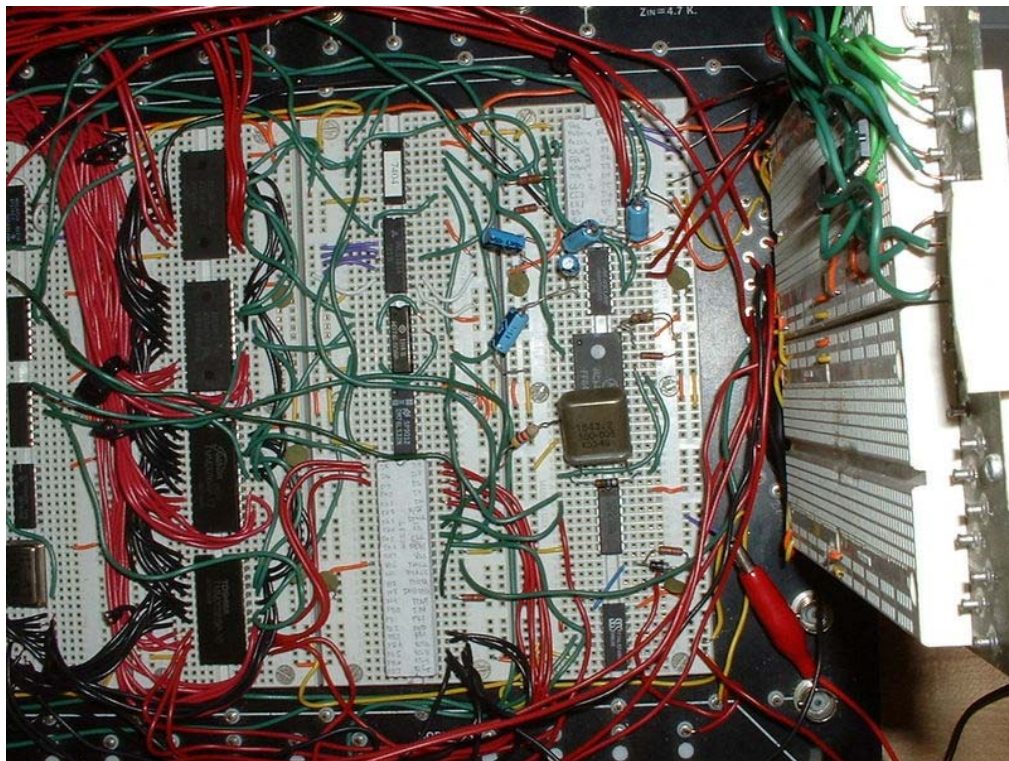


Figure 4 Entire computers can be prototyped on white boards with a little organization and care.