**Eli:**

<https://www.adafruit.com/product/2885>

How to daisy chain serial (one raspberry per layer)

<https://www.adafruit.com/product/2885>

Cheap raspberry PI 0’s

<https://www.amazon.com/UCTRONICS-Display-Touch-Screen-Raspberry/dp/B076M399XX/ref=sxin_9_ac_d_pm?ac_md=2-0-VW5kZXIgJDUw-ac_d_pm&cv_ct_cx=raspberry%2Bpi%2B4%2Btouchscreen&dchild=1&keywords=raspberry%2Bpi%2B4%2Btouchscreen&pd_rd_i=B076M399XX&pd_rd_r=05fc1173-bd2f-41e2-9632-6142750acbdb&pd_rd_w=8IRbB&pd_rd_wg=zg0fK&pf_rd_p=7bce1efb-5229-4289-8758-b64b1d02cfb8&pf_rd_r=JQJJ3KGR2GV8ZSWWPV1K&qid=1600871585&sr=1-1-22d05c05-1231-4126-b7c4-3e7a9c0027d0&th=1>

Screen which only uses select GPIO

<https://www.uctronics.com/download/Amazon/B0106.pdf>

Drivers for screen

<https://www.youtube.com/watch?v=_-mBeYC2KGc&t=893s>

Air conditioner theory

<https://www.seeedstudio.com/blog/2019/09/25/uart-vs-i2c-vs-spi-communication-protocols-and-uses/>

SPI basics

<https://jlcpcb.com/parts/componentSearch?searchTxt=led>

KT-0603R -> 520~625NM Red LED, $6.25 for 80W.

Other options can go up to $13 for 80W or higher for better toloranced parts

**John:**

**Max:**

<http://horticulturejournal.usamv.ro/pdf/2015/art69.pdf>

beneficial effects of pre-sowing treatments, lights effects on microgreens physiology