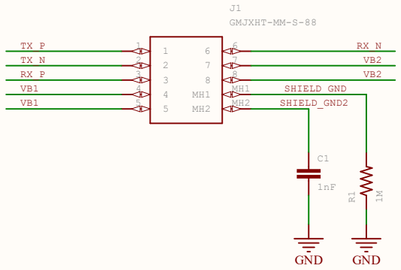
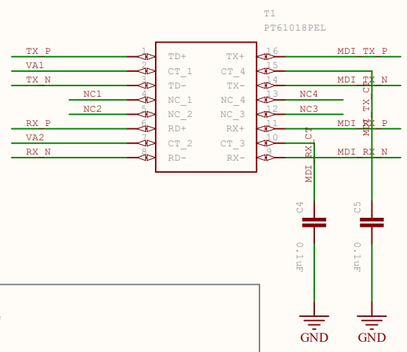
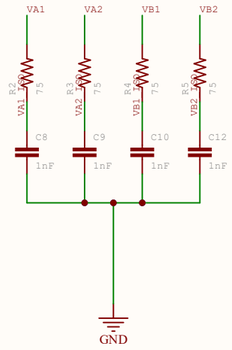
Ethernet Interface

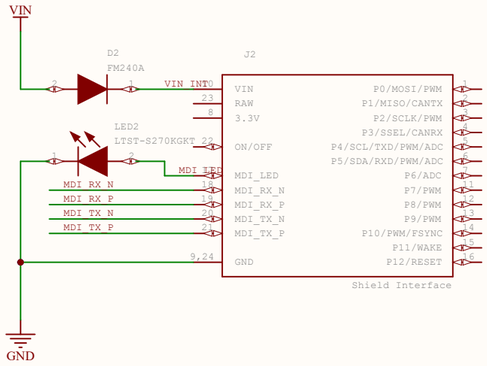






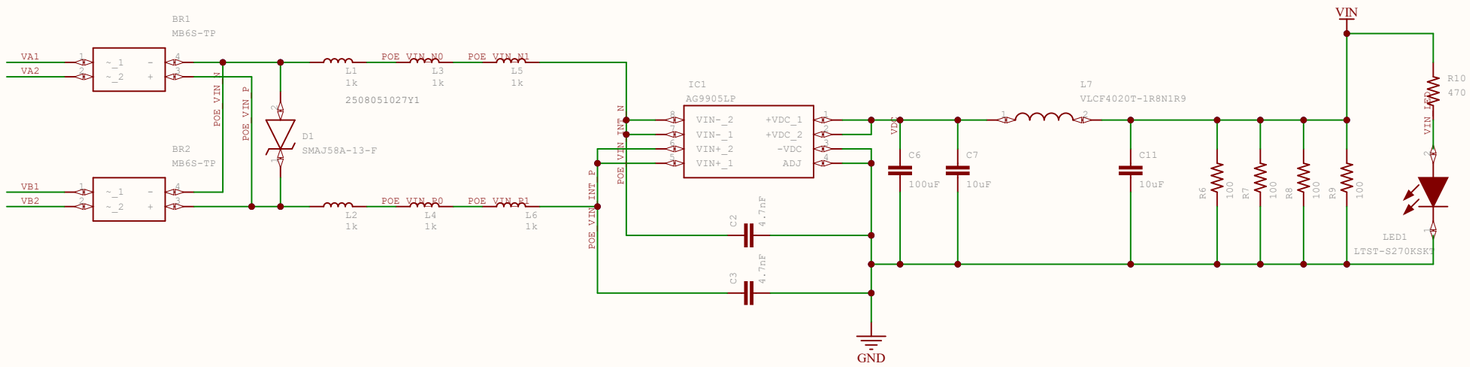
* We are using a low-profile ethernet jack to fit within the 11mm height limit of the shields. However, low-cost and low-profile ethernet jacks do not have integrated magnetics.

Shield Interface



* The diode prevents reverse-current and reverse-voltage from going backwards into the PoE Shield. Since the minimum current requirment of the PoE Shield already burns 200mA constantly, there is no point in using an ideal diode to improve the design efficency.

PoE Interface



* There is a minimum current requirment on the PoE Module which requires us to draw 200mA at 5V (1W) at all times. To meet this we use four 100ohm resistors in parallel for 25ohms of effective resistance which draws 5/25=200mA. However, this does drop 1W of power constantly into the PCB which will cause the PoE shield to get warm.

Mechanical

TITLE:	OpenMV5 PoE Shield
Document Number:	REV: 1
Date: 4/10/2023 8:38:09 AM	Sheet: 1