

Notes:

Pin names have been standardized to aid in comparing different project options side by side. Most of the individual pin assignments for the MCU can be changed in software. The project is using software SPI/I2C (AKA bitbanging) for the display on this version of the project (Atmega320). Use the "Pin Nomenclature" guide to figure out how to translate/connect the different pin names used on your hardware/datasheets.

"Buffer" can be CD4050/74HC4050 or others. This is used to connect the 5 volt I/O pins of the Atmega MCU to the 3.3V pins of the LCD.

The I2C connections require additional changes in the firmware. See Karl-Heinz's PDF guide.

Some Serial pins are not used. In this application the conversation is one sided. We don't care what the LCD has to say. This means we don't connect MISO even though there may be a pin or a datasheet goes on and on about it for pages. We are also bitbanging the serial protocol to the LCD (the hardware SPI pins are needed for other tasks). Bitbanging is slow. This means we are not going to use a bunch of other stuff on this bus. Infact, we are not going to use anything else on this bus. Why does this matter?

If we have a real (hardware) bus and different devices on it we must use a pin for each device to let everyone know who we are talking to. This is what the Slave Select pin is used for. If there is only one device to talk to, it's kinda pointless to use an I/O pin for this. Use the datasheet to determine if this pin is active high or low and connect it to power or ground.

Sometimes we don't need the reset pin either, but you need to look into the project code/controller IC datasheet to be sure about this one.

This circuit list includes the same connections listed in Karl-Heinz PDF documentation. I have also used the pinouts from Markus R's Read Me 1.29m documentation for all options that are unique to his firmware version.

I have tried to show what each LCD pinout is from but every device is unique, especially breakout modules. If you know the pin numbers, what they do, and all the different things they are called in different places, you can figure out the connections yourself using the pin names.

Connecting LCD's to projects is usually a bit more complicated than the "buy this"/"plug in that" type of DIY project. I have done my best to give you the references needed to understand what you're doing and why, so that you can build your own device or customize/repair a project clone more easily.

-Jake

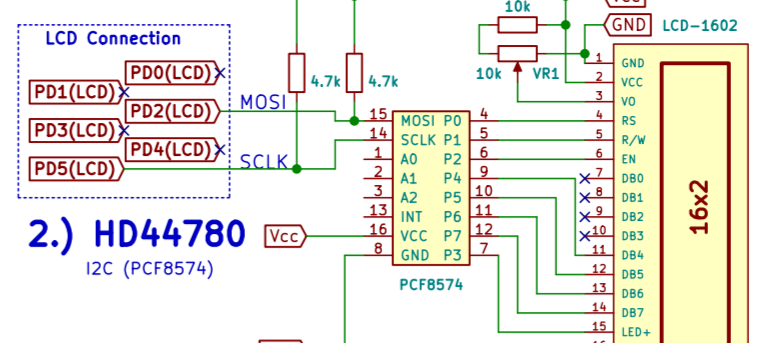
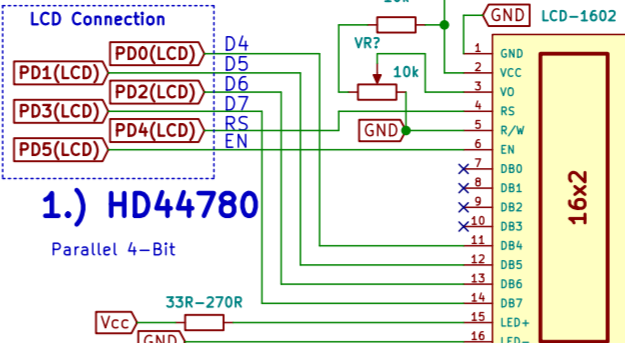
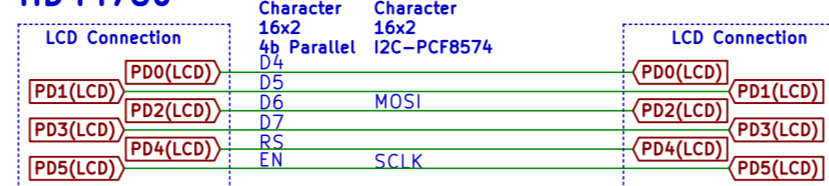
Serial Pin Names Standard

MOSI= M.O.S.I. // Master Output to Slave Input
MISO= M.I.S.O. // Master Input to Slave Output
SS= S.S. // Slave Select
SCLK= Serial Clock
RST= Reset
RS, AO, D/C, CS

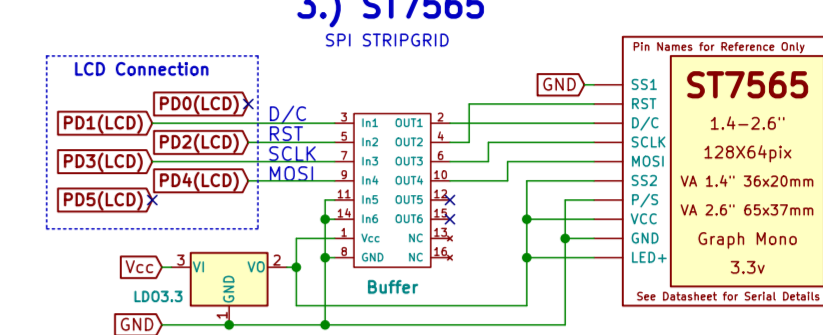
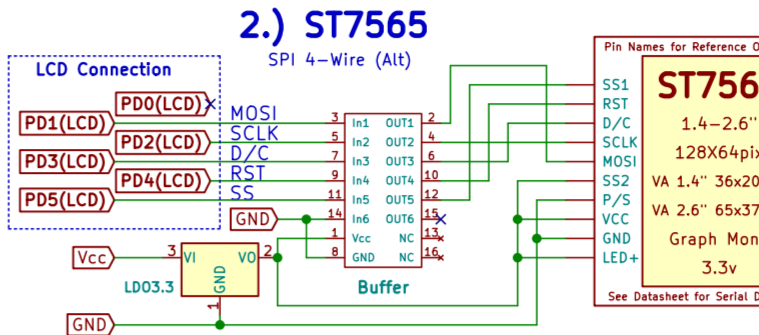
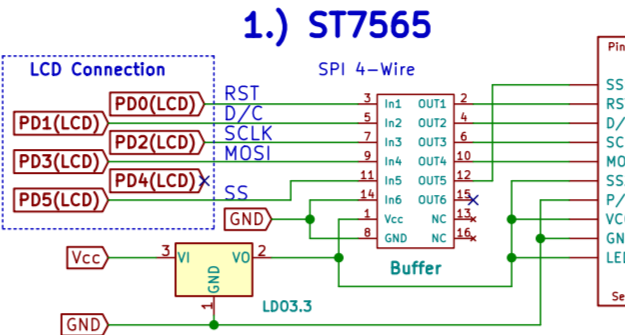
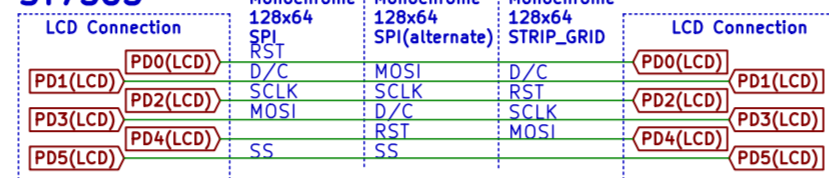
Pin Nomenclature

Serial Data Input
Serial Data Output
Serial Data Bidirectional Input/Output
Chip/Slave Select
Reset
Register Select Data/Command
Serial Clock
Read/Write
Enable Device
Positive Power Supply
Negative Power Supply
Synchronous Serial
SPI 4-Wire
SPI 3-Wire
I2C

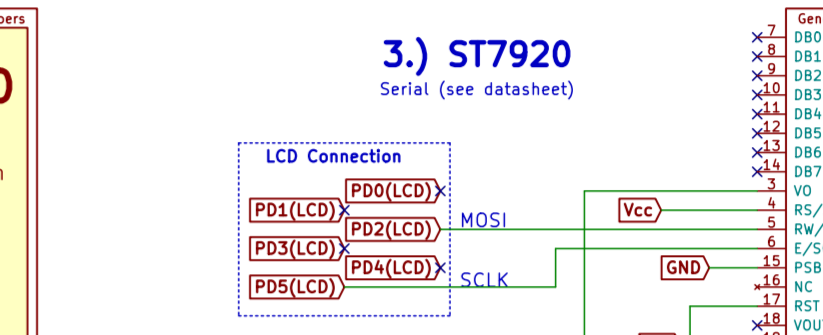
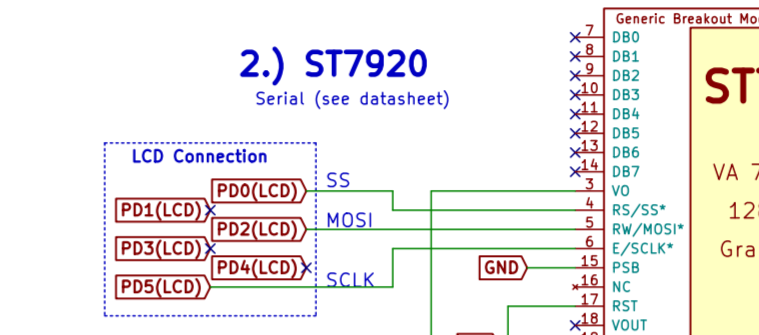
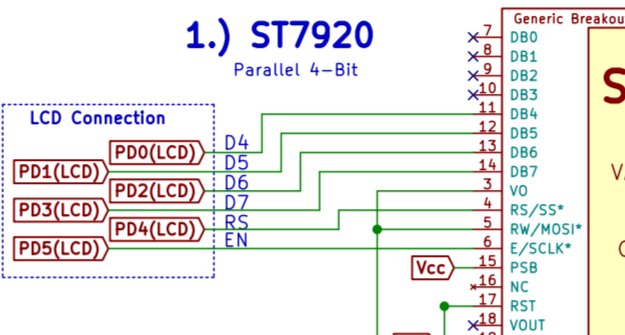
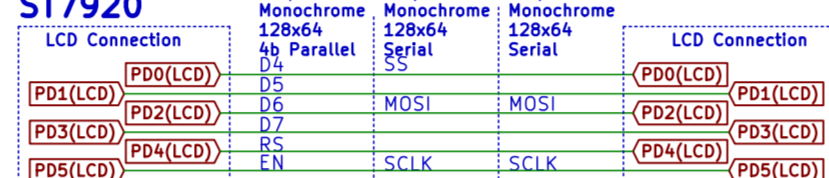
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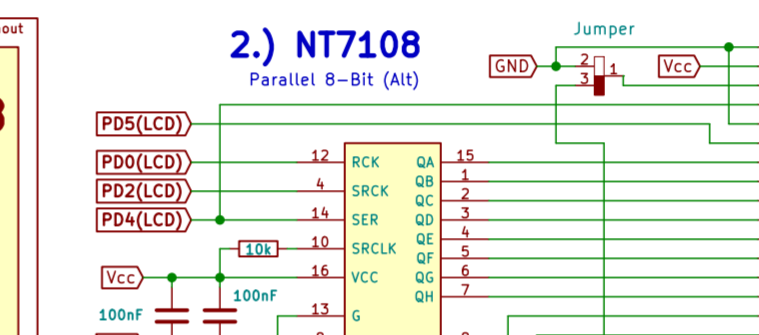
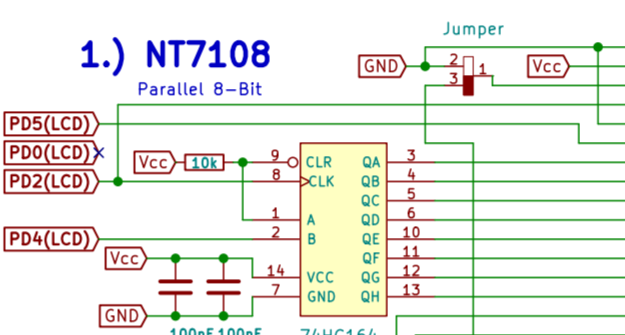
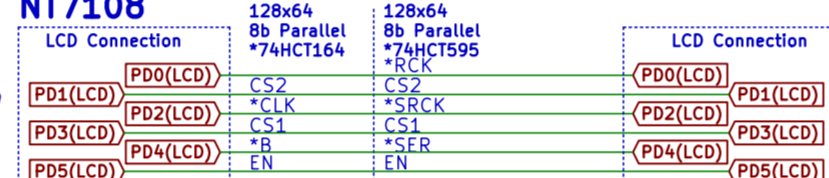
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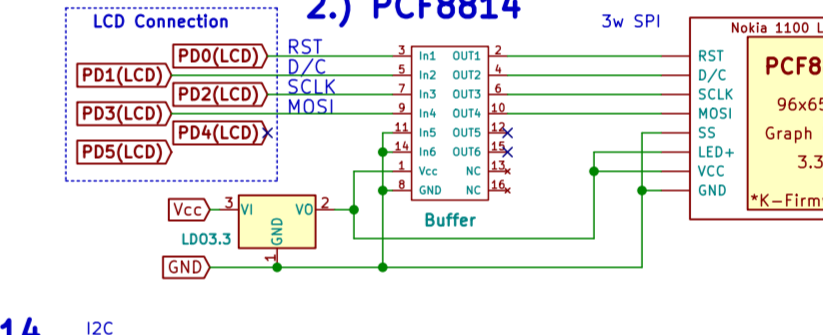
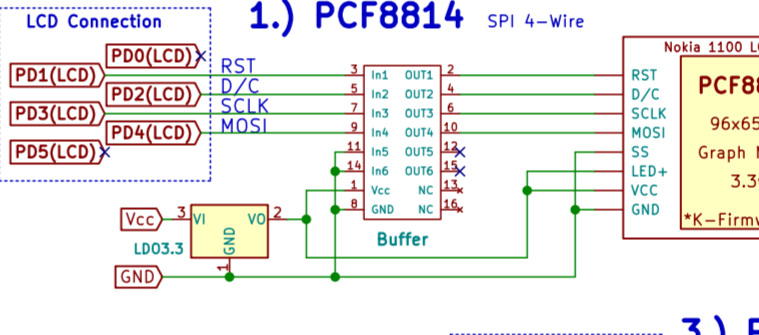
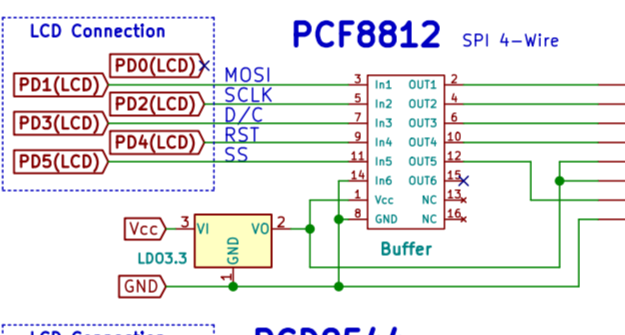
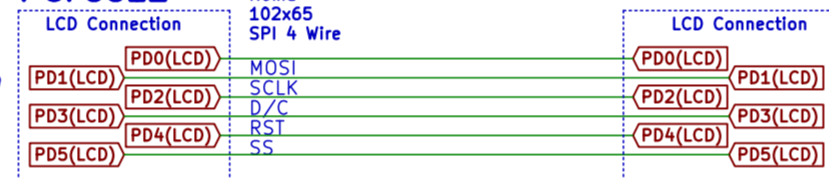
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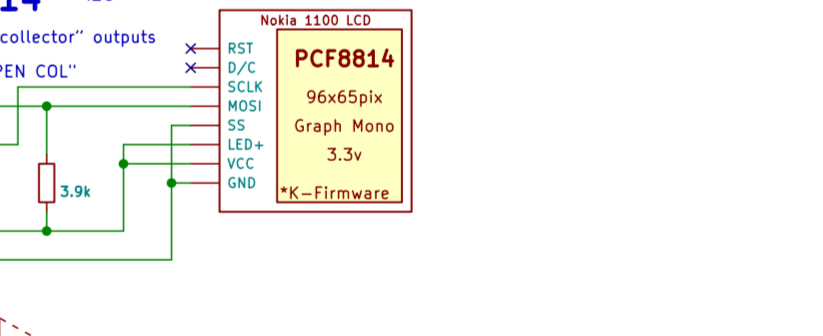
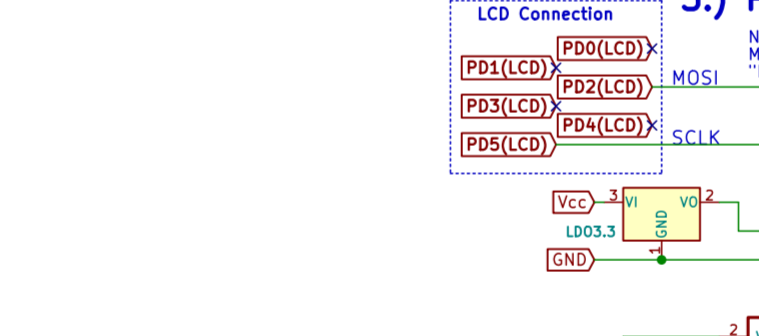
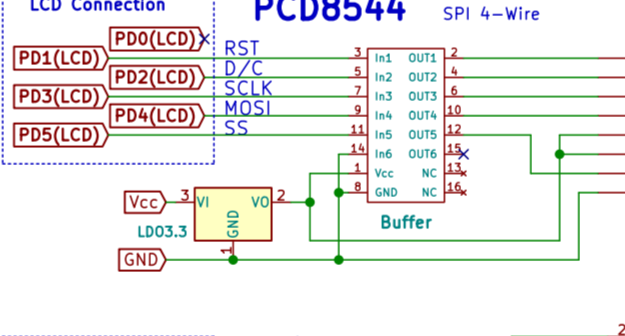
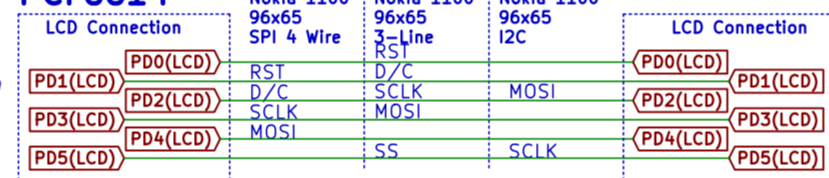
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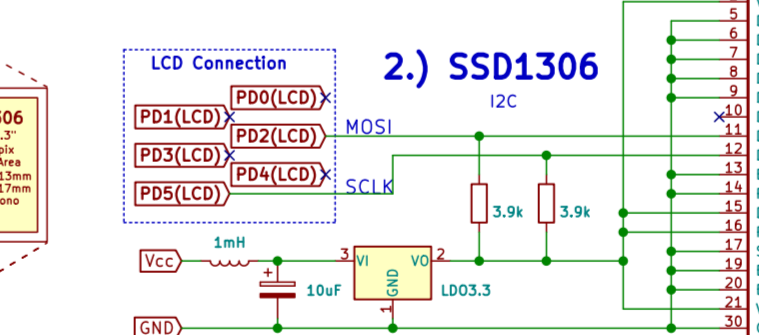
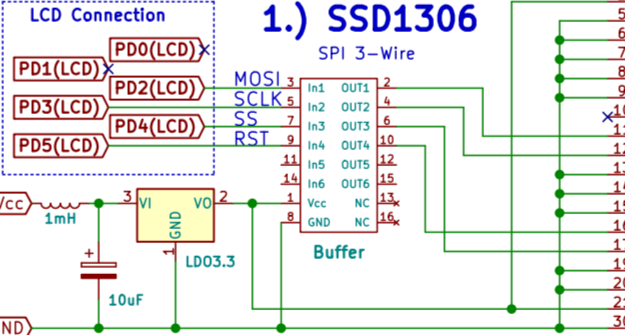
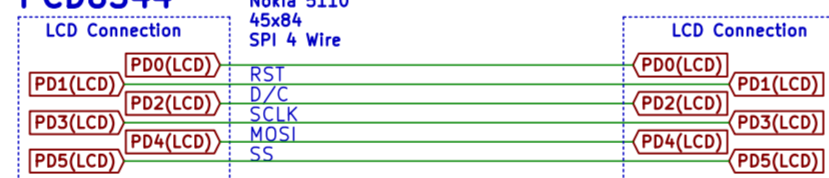
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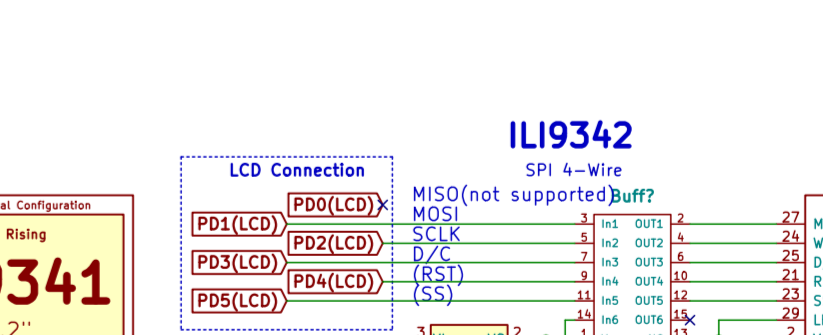
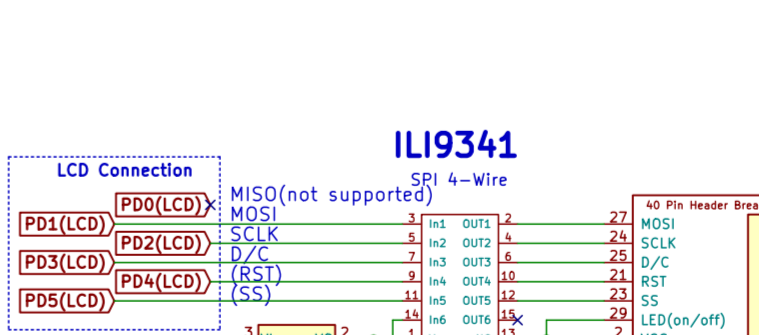
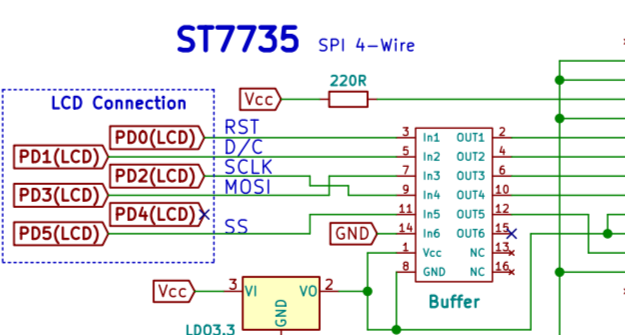
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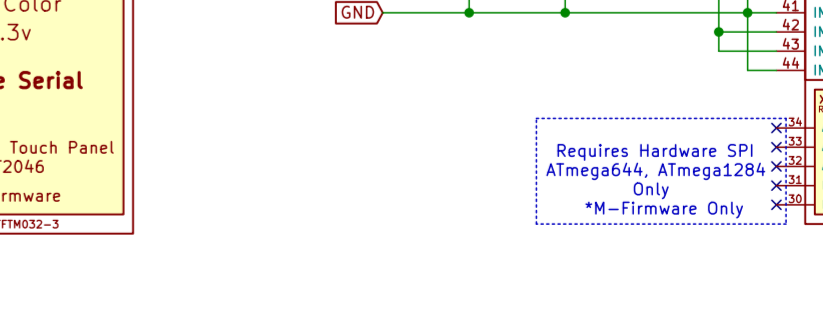
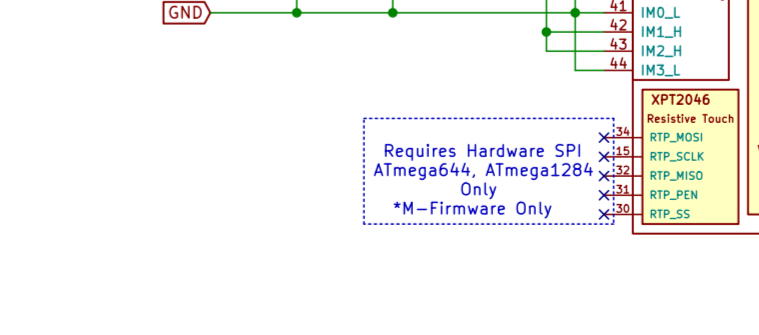
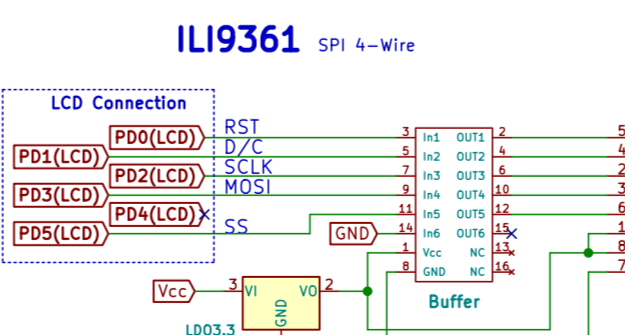
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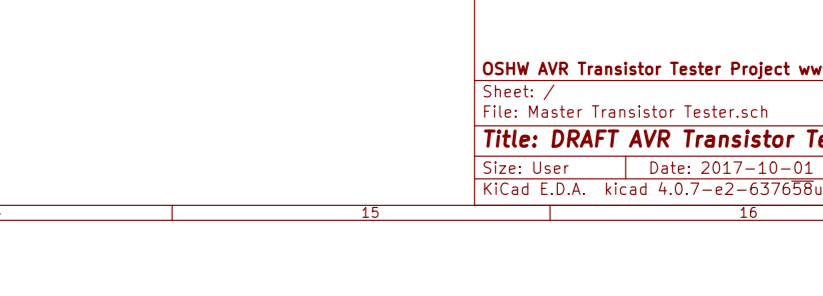
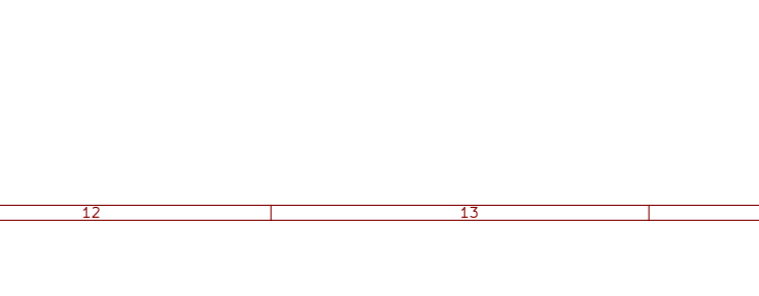
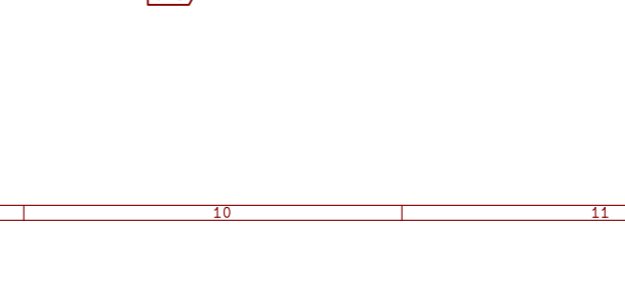
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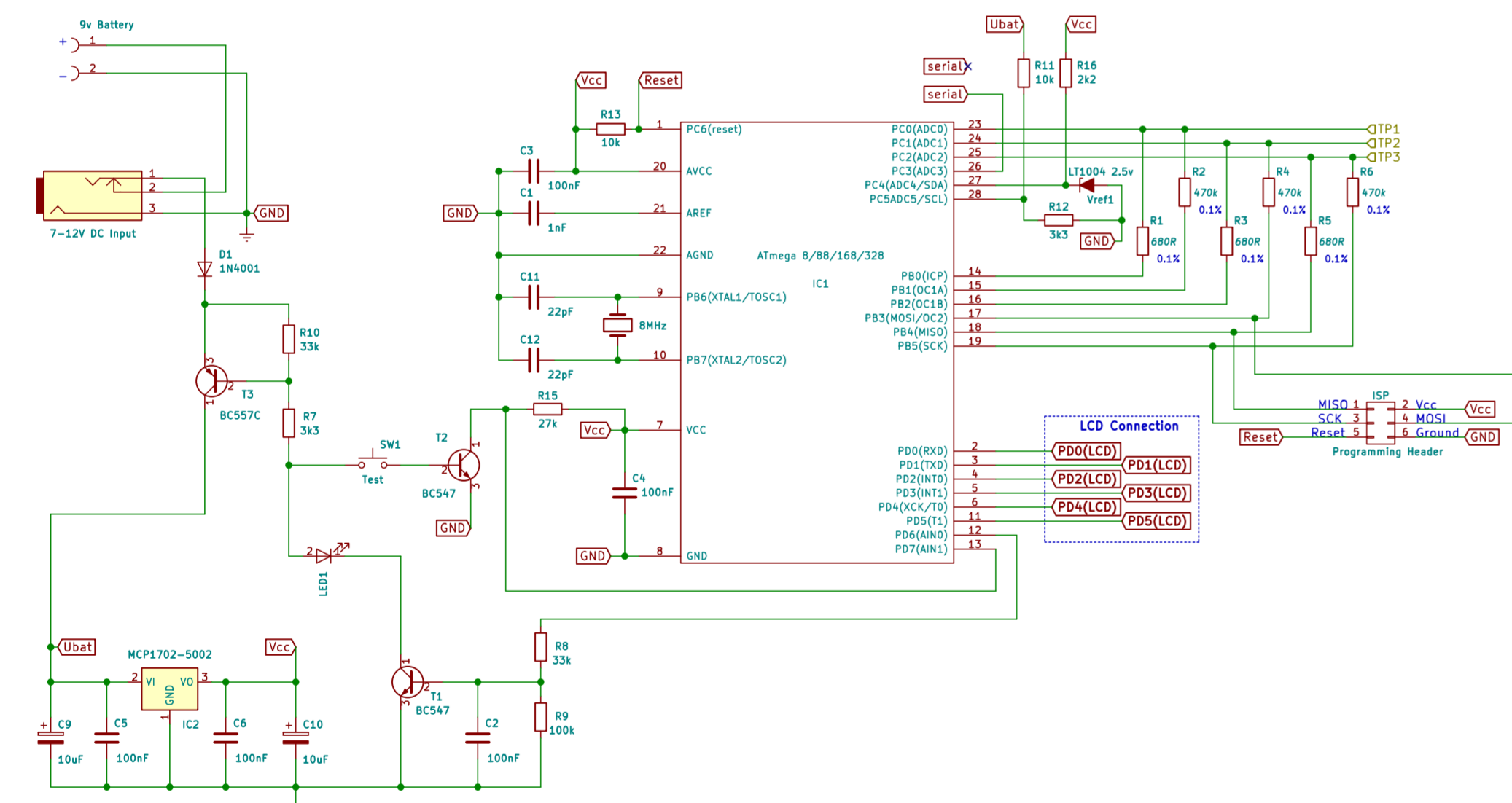
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ILI9163



ILI9341/ILI9342



K-FW

K-FW

K-FW

K-FW

K-FW

M-FW