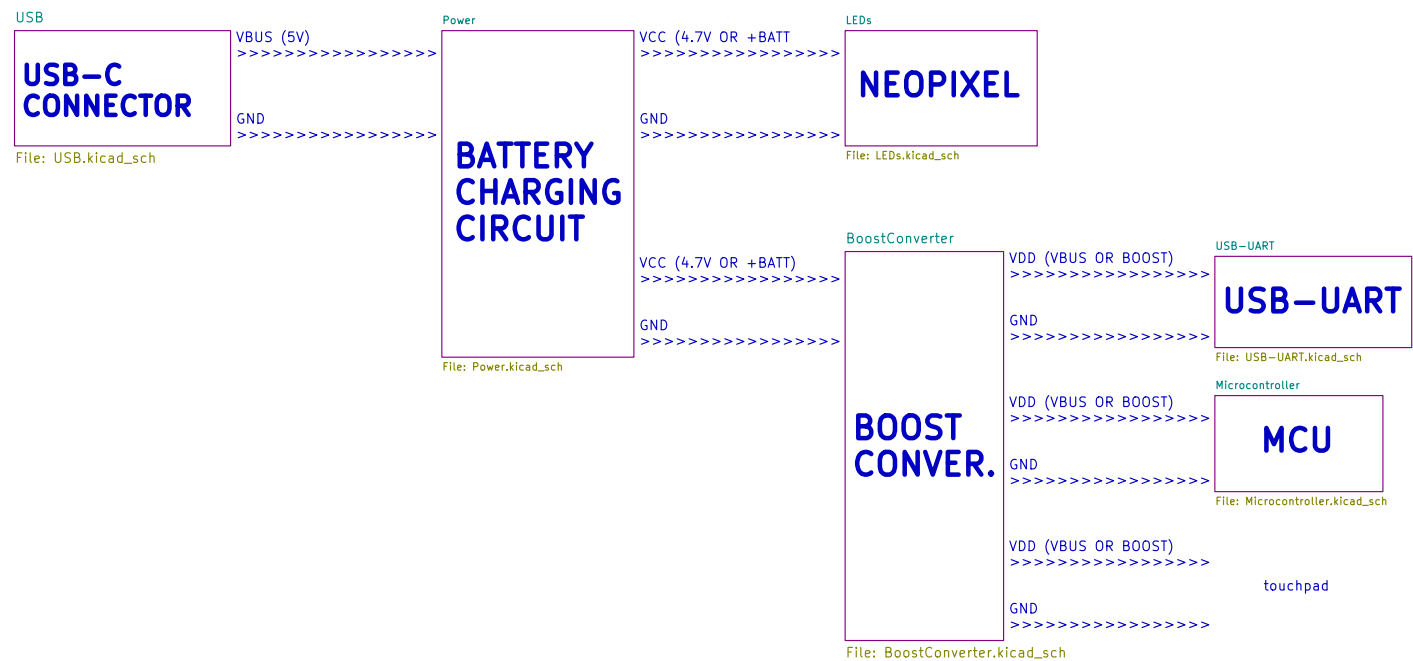


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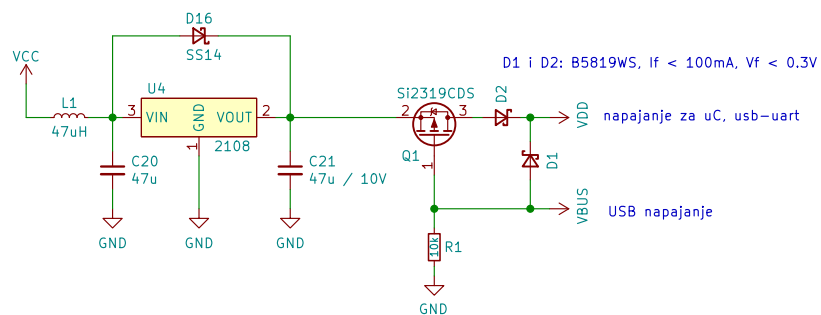
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Title: CNLJS

Size: A4 Date: 2021-12-22
KiCad E.D.A. kicad (6.0.0)

Rev: v0.01
Id: 1/7



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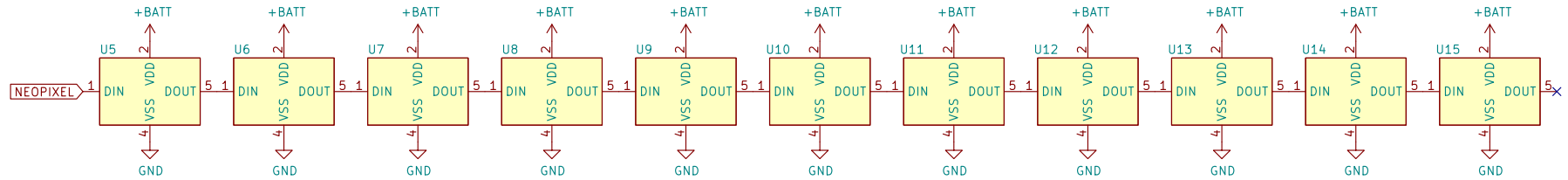
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Rev: v0.01

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WS2812-4020 already include 100nF caps, no need to add them

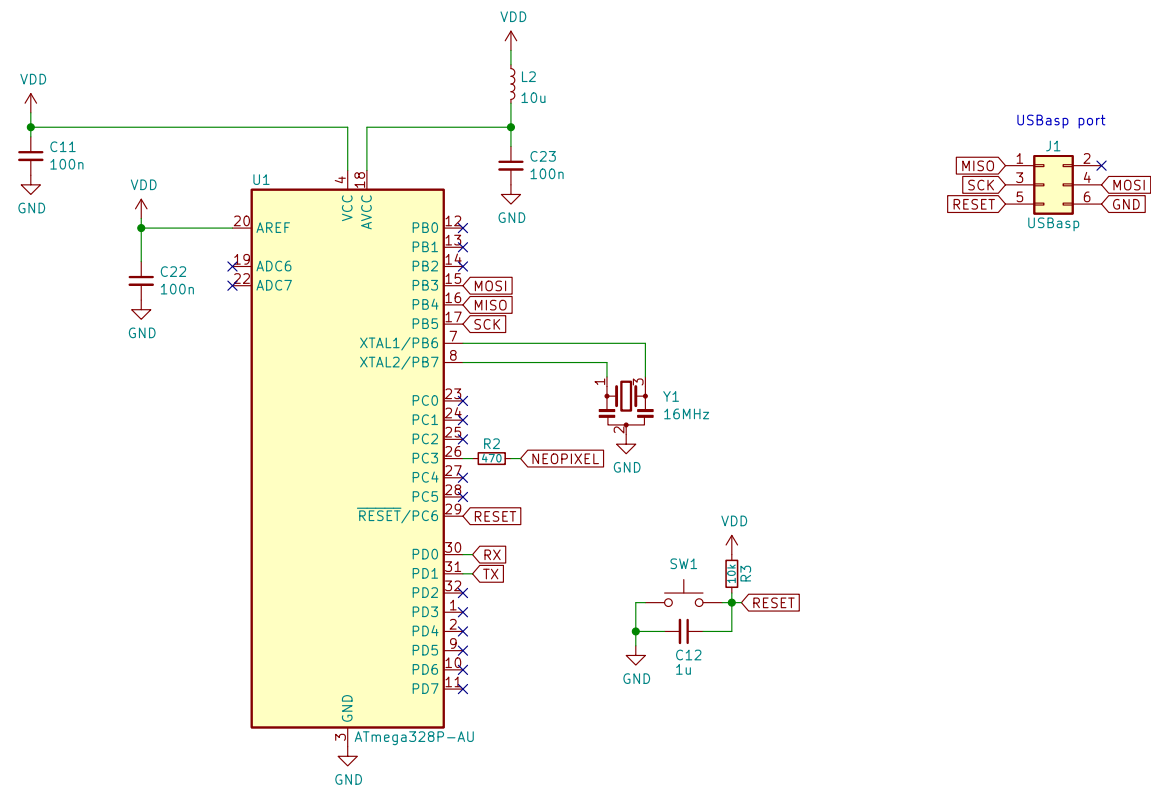
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Sheet: /Microcontroller/
File: Microcontroller.kicad_sch

Title: CNLJS

Size: A4 Date: 2021-12-22

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MCP73871

The schematic diagram illustrates the MCP73871 circuit. It features a USB power source (USB NAPAANJE) connected to VBUS through a TANTALUM KOND. (C13, 4.7u / 25V). The VBUS line is also connected to the VPCC pin (pin 2) of the MCP73871-2CC (U2). A main switch (Sw2) controls the connection between VBUS and the +BATT terminal. The battery pack (BT1, Battery_Cell) is connected to +BATT. The MCP73871-2CC has several pins: IN (pin 1), OUT (pin 14), VBAT (pin 16), Vbat_SENSE (pin 17), PG (pin 6), STAT1/LBO (pin 8), STAT2 (pin 7), CE (pin 9), TE (pin 10), THERM (pin 11), PROG3 (pin 12), PROG2 (pin 13), PROG1 (pin 14), SEL (pin 15), and VSS (pin 18). Various resistors (R1-R15) and capacitors (C1-C6) are used for timing and filtering. Status LEDs (D1-D3) indicate POWER, DONE, and CHARGE states.

For optimum voltage regulation, it is recommended to place the battery pack closest to the device's VBAT and VSS pins to minimize voltage drops along the high current-carrying PCB traces.
If the PCB layout is used as a heat sink, adding many vias in the heat sink pad can help conduct more heat to the PCB backplane, thus reducing the maximum junction temperature.

If temperature monitoring is not required, place a standard 10k resistor from THERM to VSS.

PG = POWER GOOD STATUS OUTPUT
STAT1 = CHARGE STATUS UPDATE 1
STAT2 = CHARGE STATUS UPDATE 2

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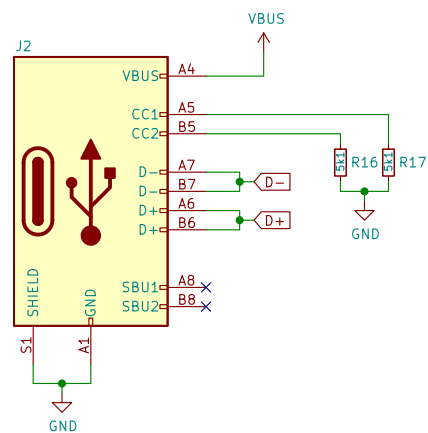
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The device must have 5.1k pull-down on the its port CC pin (on both pins).

Once the C-C cable is connected between two link partners, the DFP (host) will sense the drag by 5.1k resistor (from device side). As result, it will turn the VBUS on. This is how a host recognizes that a connection has been made. The connect event is essentially controlled by sink side having 5.1k Rd.

SBU1/SBU2: these are low-speed lines used only for Alternate Mode and accessory mode. For example, with DisplayPort, AUX+ /AUX- transmit over the SBU lines. For audio adapter accessory mode, these lines are used for the microphone input and analog GND.

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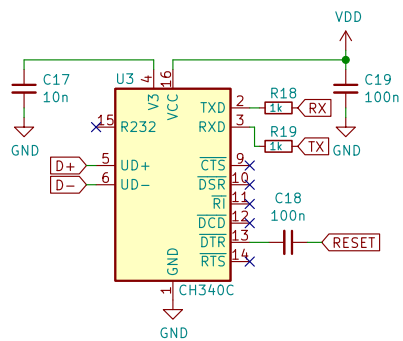
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