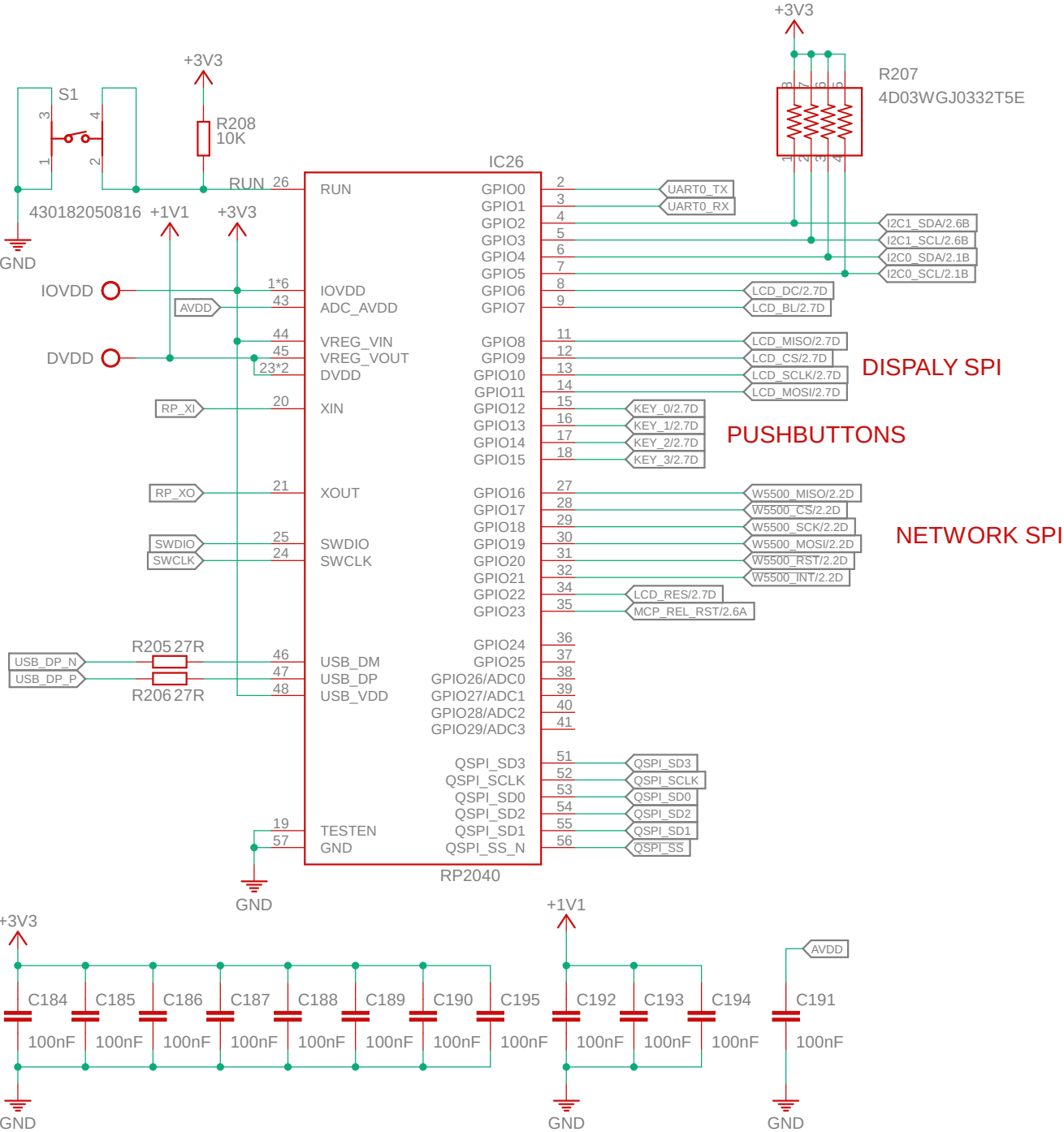


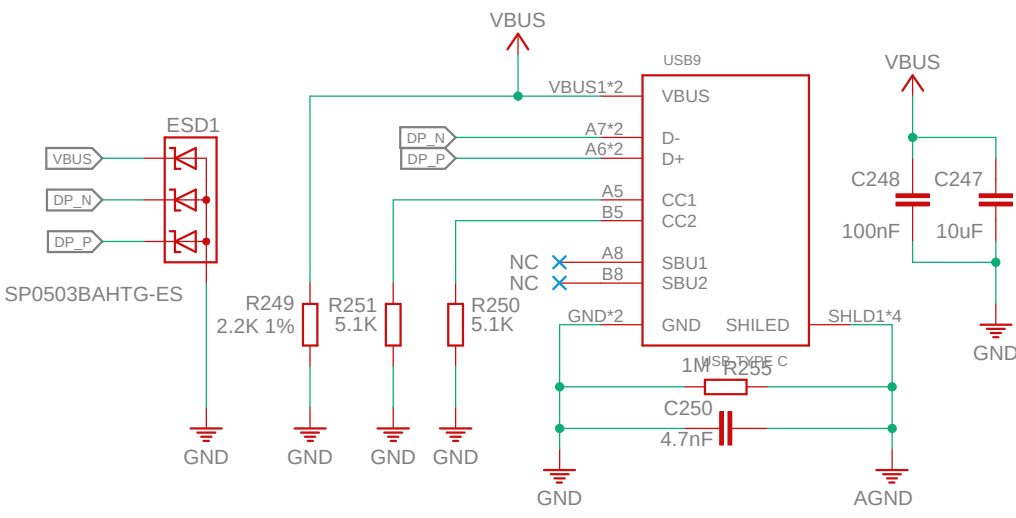
RP2040 MCU



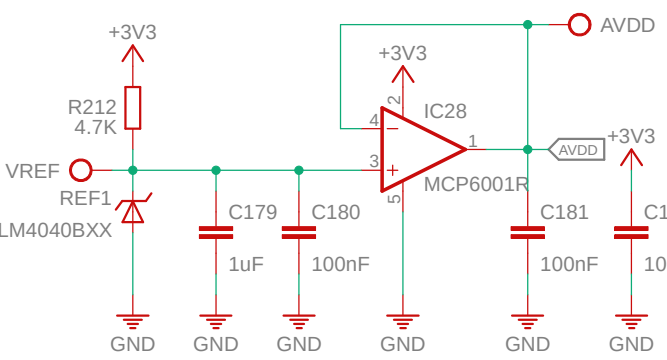
RP2040 I2C0 BUS MAP (via TCA9548A @ 0x70):
Port 0:
- 2× STUSB4710 @ 0x28, 0x29
Port 1:
- 2× STUSB4710 @ 0x28, 0x29
Port 2:
- 2× STUSB4710 @ 0x28, 0x29
Port 3:
- 2× STUSB4710 @ 0x28, 0x29
Port 4:
- 4× INA219 @ 0x40, 0x41, 0x42, 0x43
Port 5:
- 4× INA219 @ 0x40, 0x41, 0x42, 0x43
Port 6–7:
- UNUSED

RP2040 I2C1 BUS MAP:
- CAT24C512HU5IGT3 @ 0x50 (A0:A1:A2 = 0)
- MCP23017-E/ML @ 0x20 (A0:A1:A2 = 0)

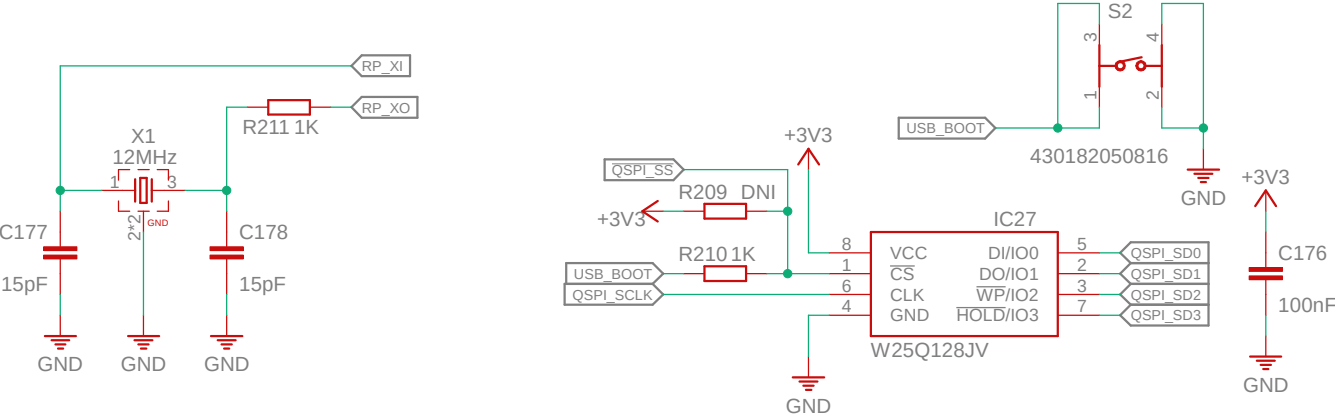
USB-C CONNECTOR



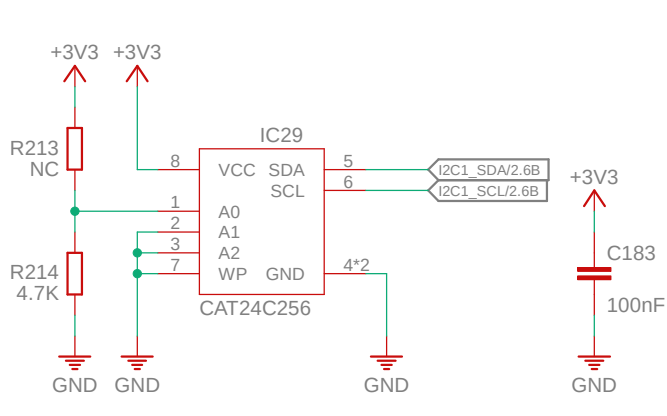
ADC VREF



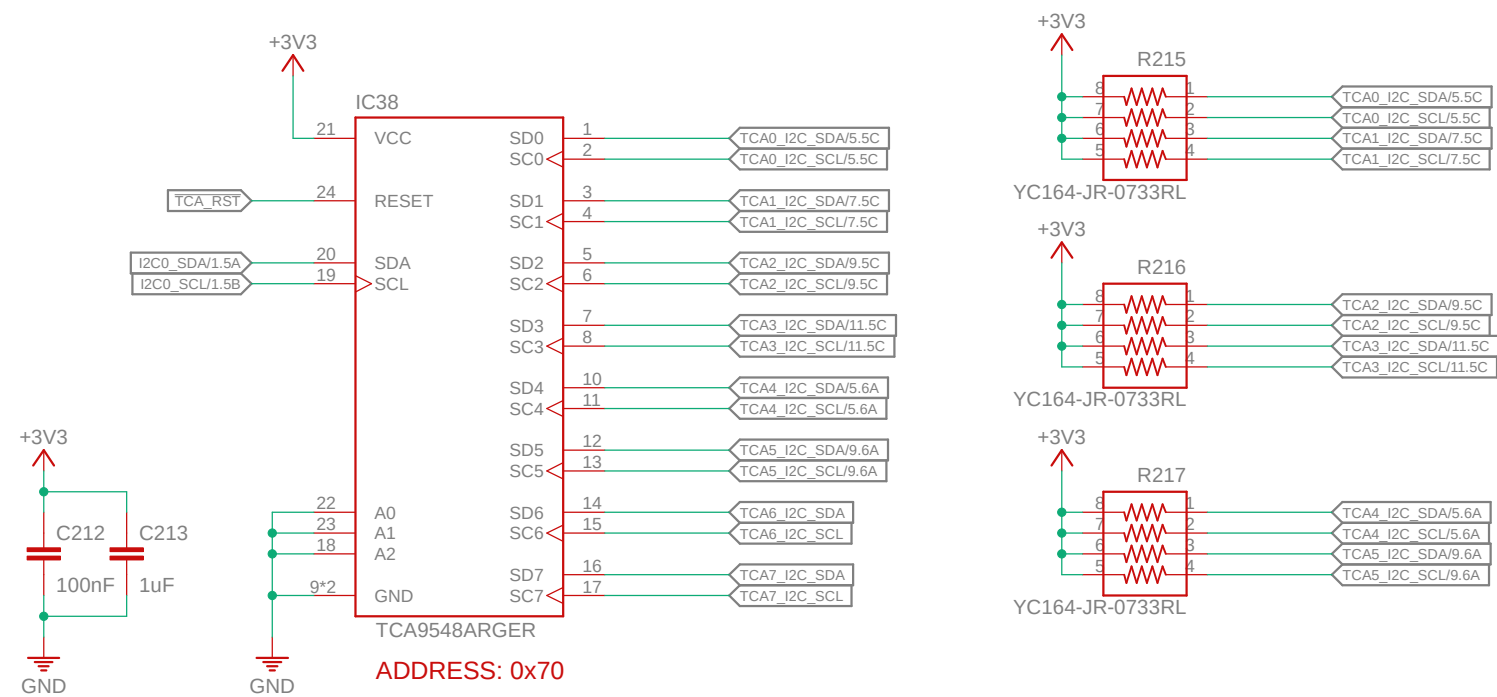
12MHZ CRYSTAL RP2040 FLASH



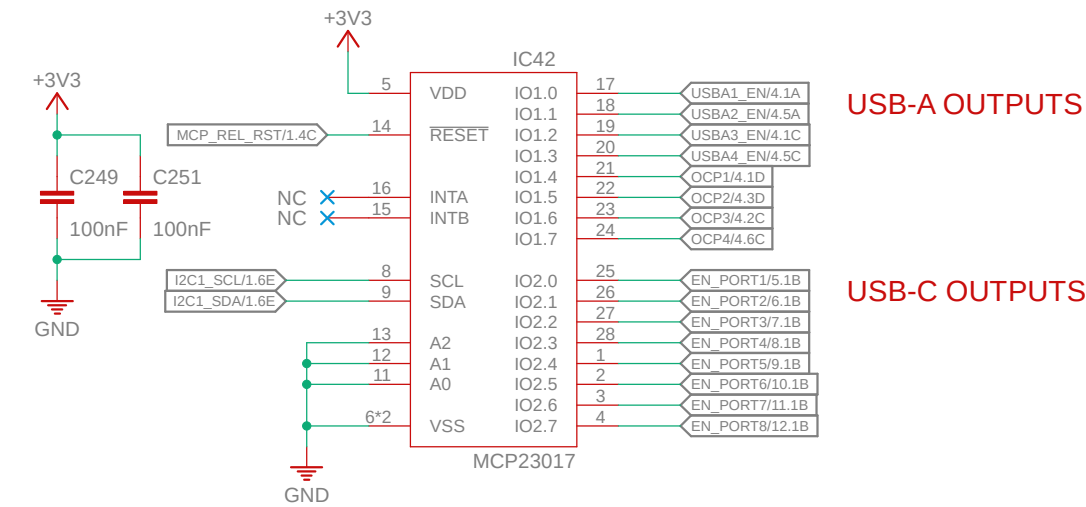
USER MEMORY



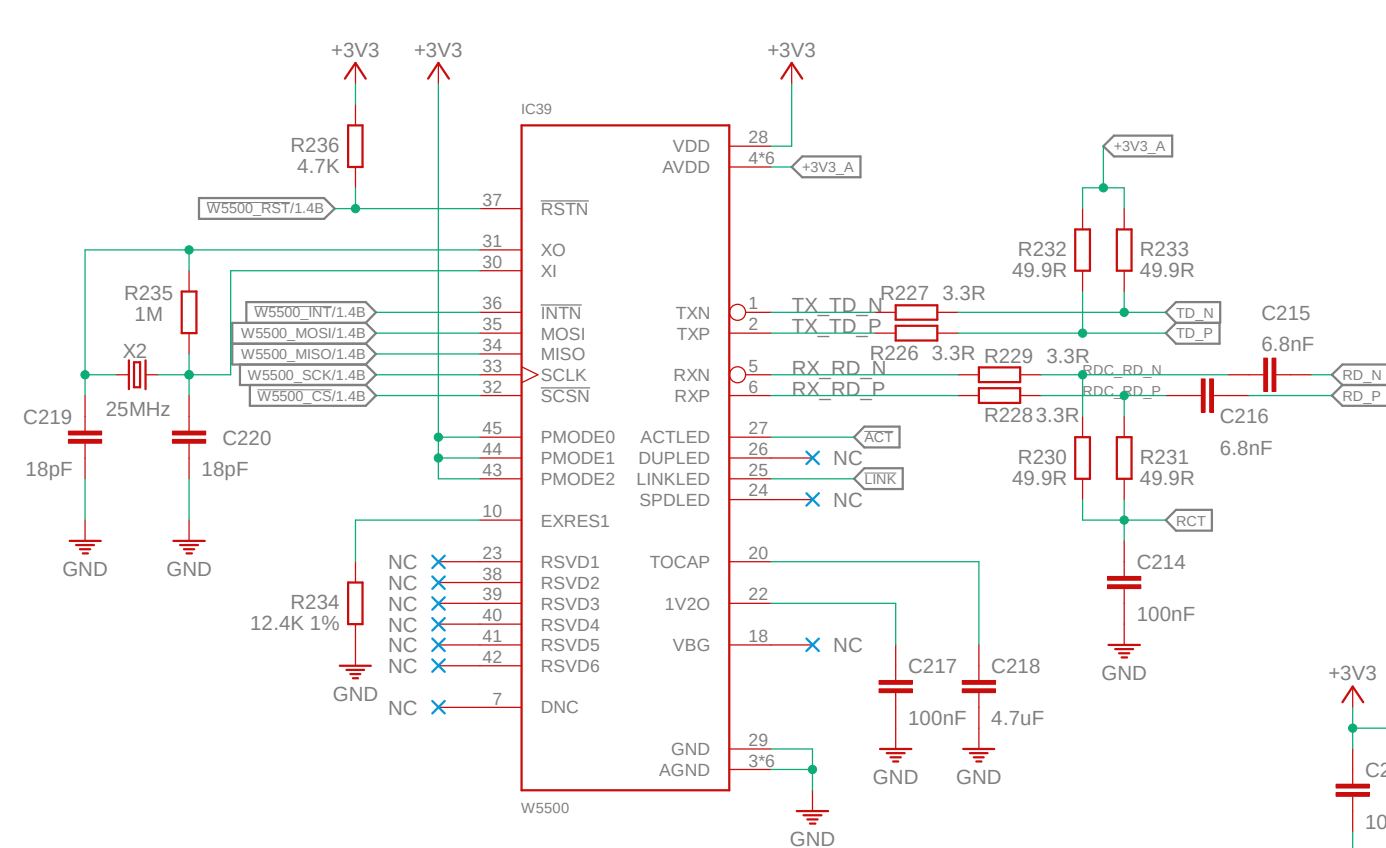
8-Channel I2C Switch



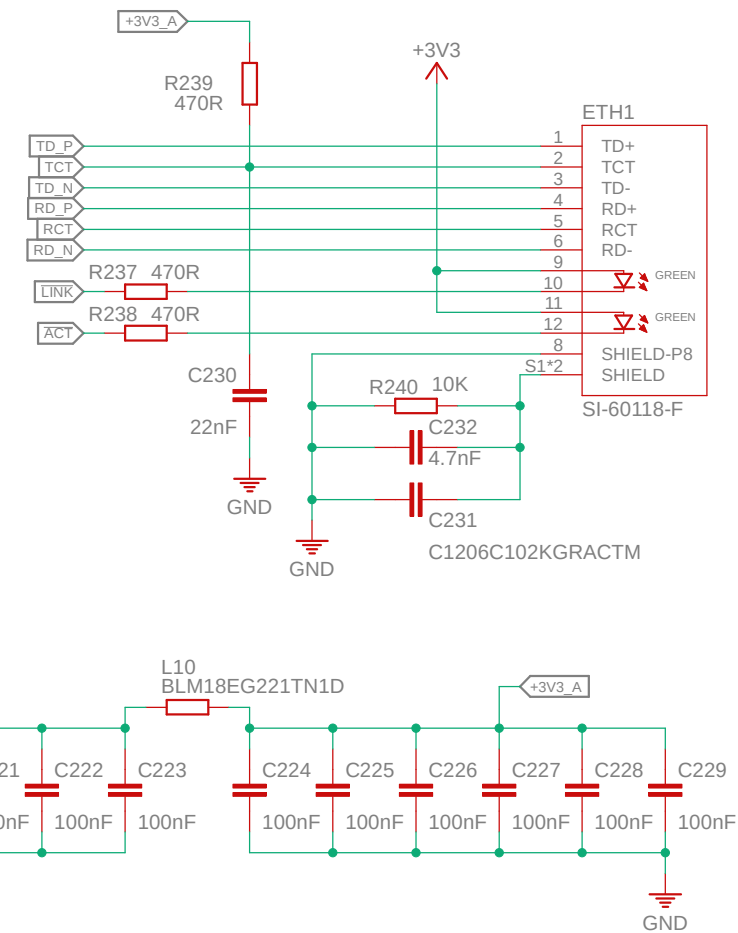
IO DRIVER



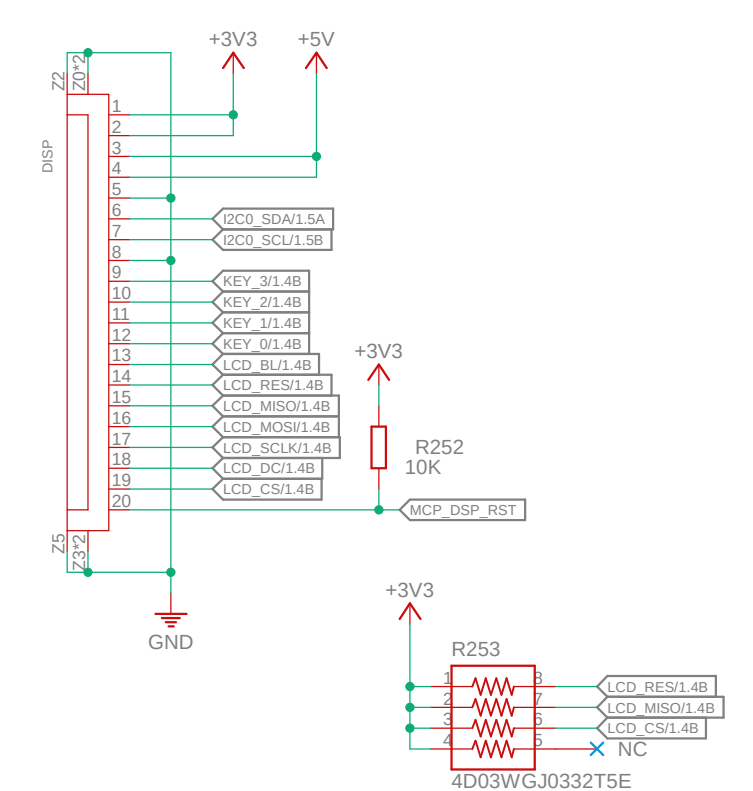
W5500 ETHERNET CONTROLLER



RJ45-CAT5

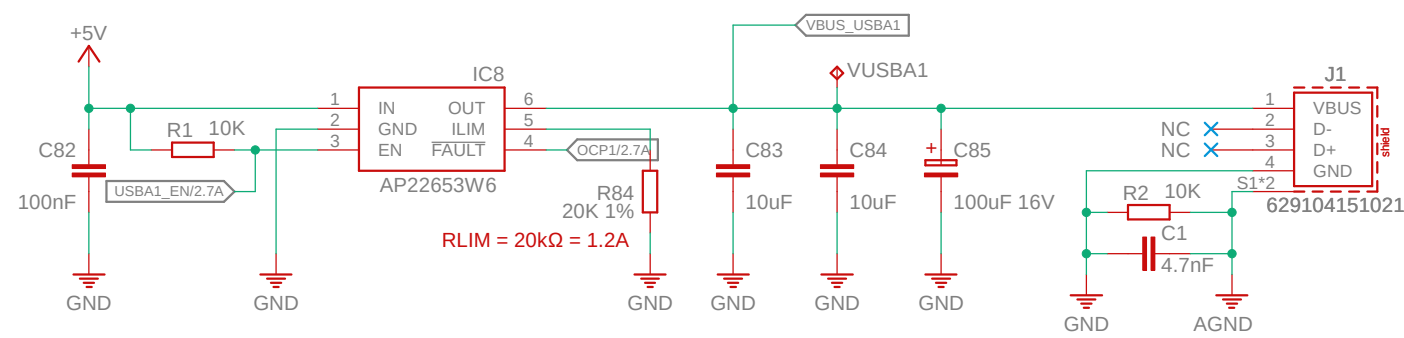


BOARD CONNECTOR

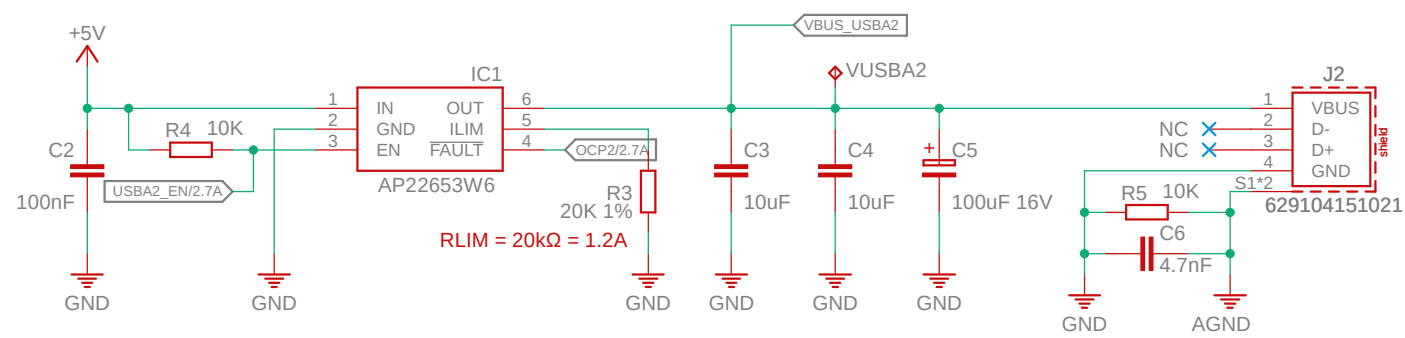


| | | |
|----------------|----------------|--------|
| PDNode-600 Pro | PERIPHERALS | |
| | PDNode-600 Pro | |
| | not saved! | |
| | Sheet: 2/12 | v0.1.0 |

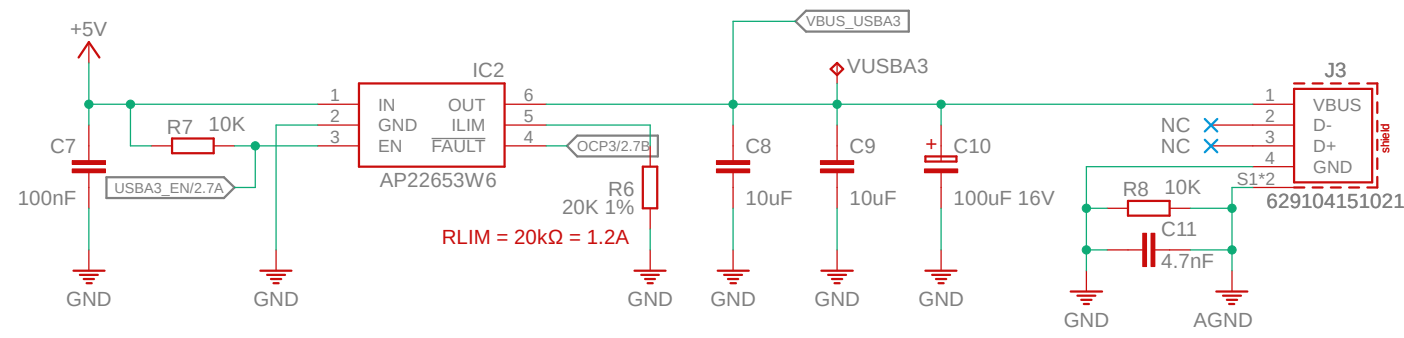
OUTPUT USB-A1



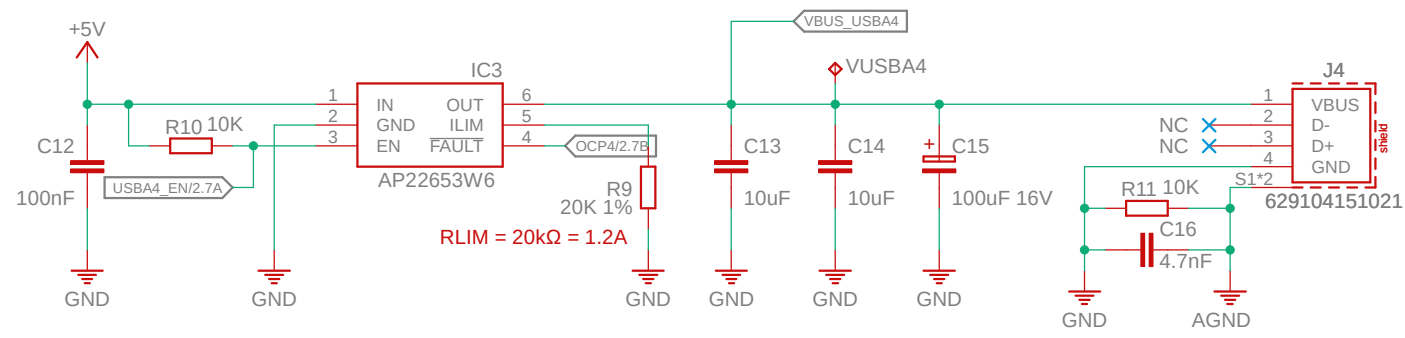
OUTPUT USB-A2



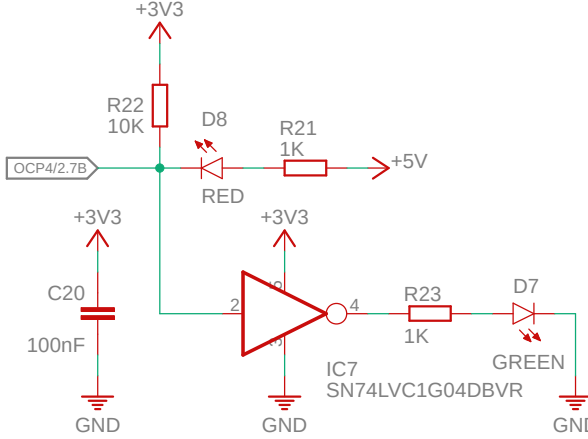
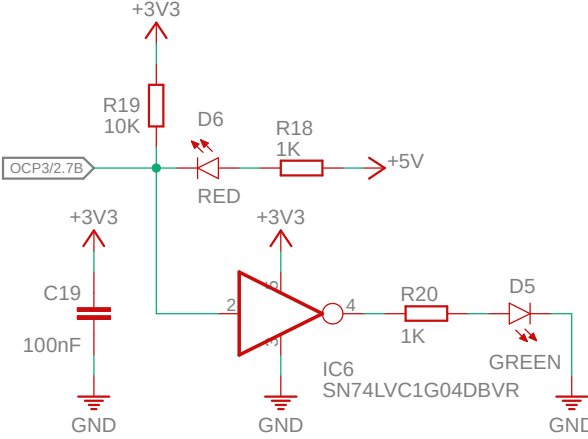
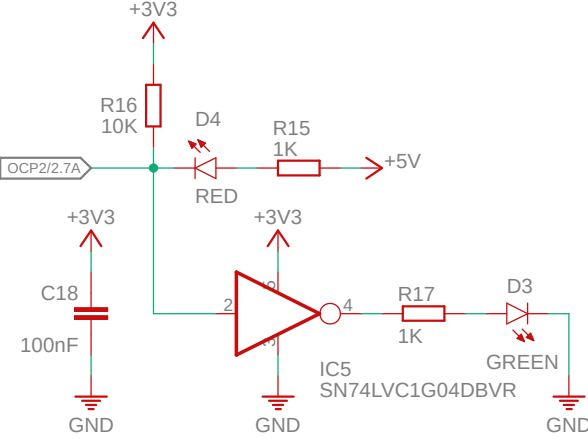
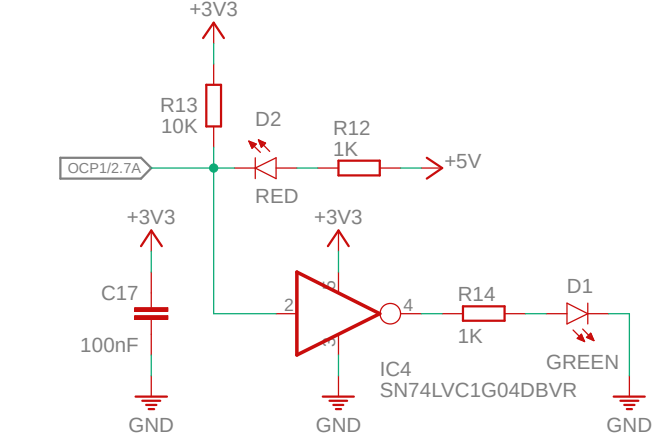
OUTPUT USB-A3



OUTPUT USB-A4

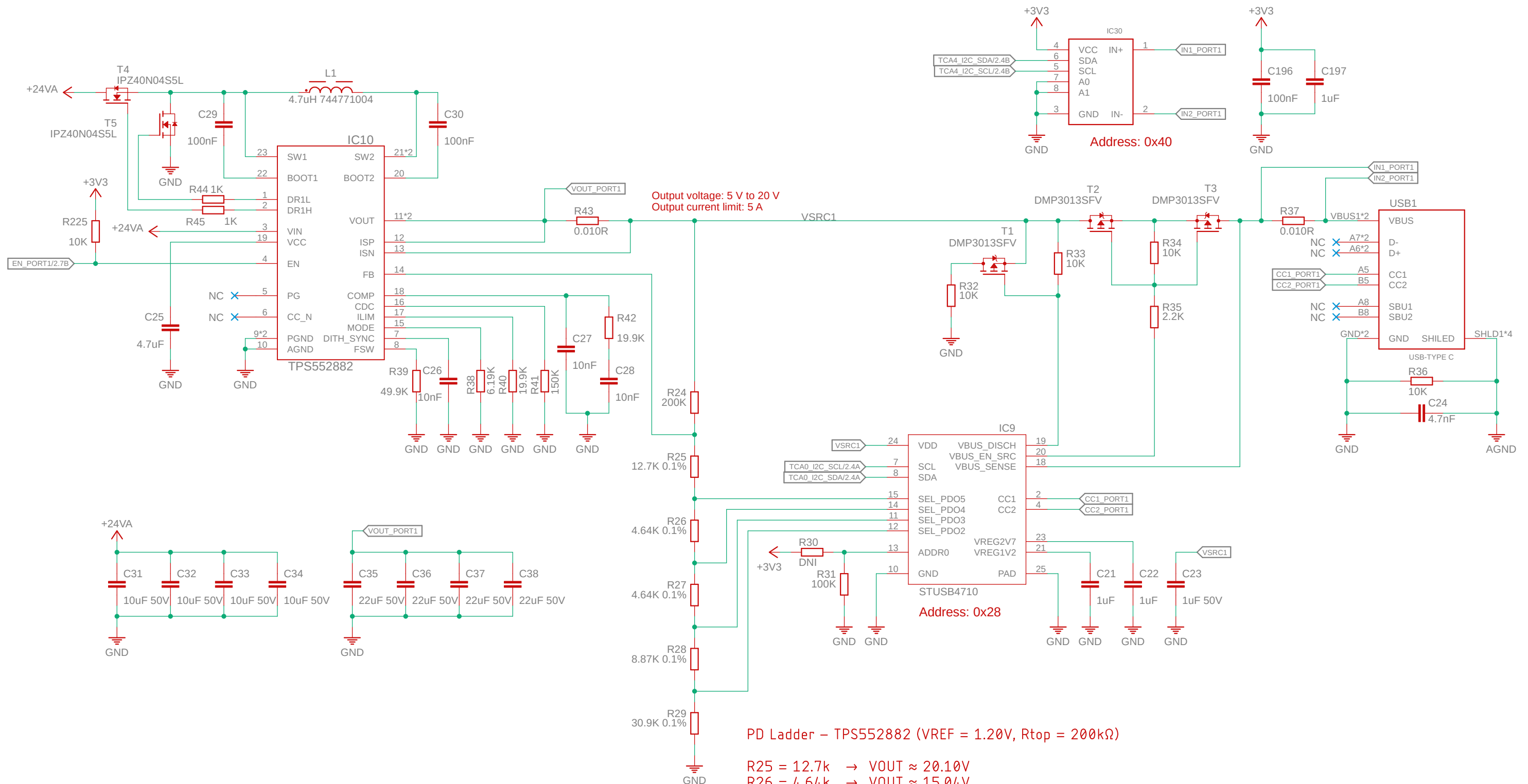


FAULT INDICATORS



USB-C PD SOURCE PORT1

CURRENT MEASUREMENT



PD Ladder – TPS552882 (VREF = 1.20V, Rtop = 200kΩ)

R25 = 12.7k → VOUT ≈ 20.10V
R26 = 4.64k → VOUT ≈ 15.04V
R27 = 4.64k → VOUT ≈ 12.12V
R28 = 8.87k → VOUT ≈ 8.98V
R29 = 30.9k → VOUT ≈ 5.09V

Cumulative Rbottom = 61.75kΩ

PDNode-600 Pro

DvidMakesThings
David Sipos @2025

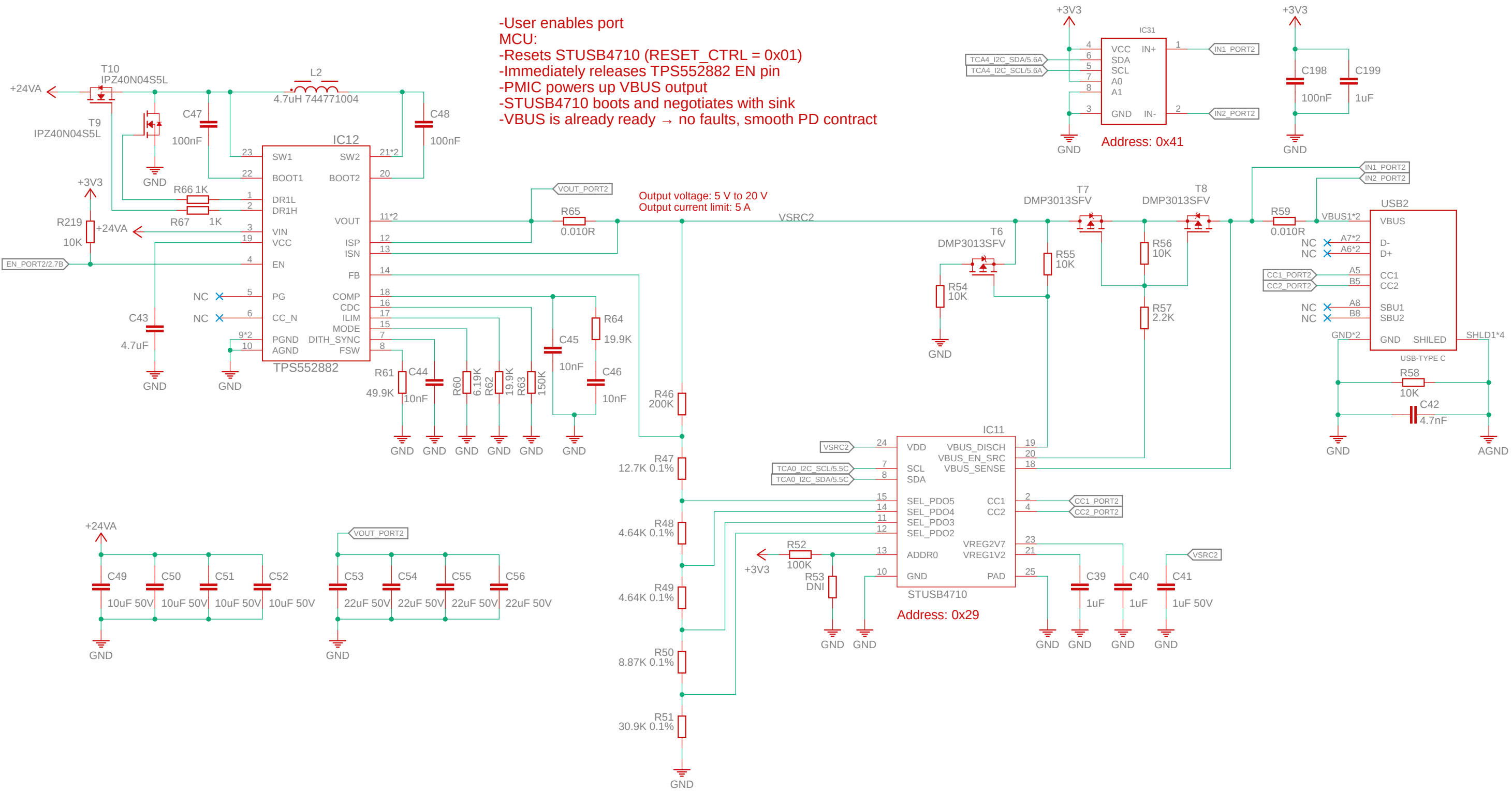
| | |
|----------------|--------|
| USB-C PD PORT1 | |
| PDNode-600 Pro | |
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| Sheet: 5/12 | v0.1.0 |

USB-C PD SOURCE PORT2

CURRENT MEASUREMENT

Manual Mode Flow:

- User enables port MCU:
- Resets STUSB4710 (RESET_CTRL = 0x01)
- Immediately releases TPS552882 EN pin
- PMIC powers up VBUS output
- STUSB4710 boots and negotiates with sink
- VBUS is already ready → no faults, smooth PD contract



PDNode-600 Pro

DvidMakesThings

David Sipos @2025

USB-C PD PORT2

PDNode-600 Pro

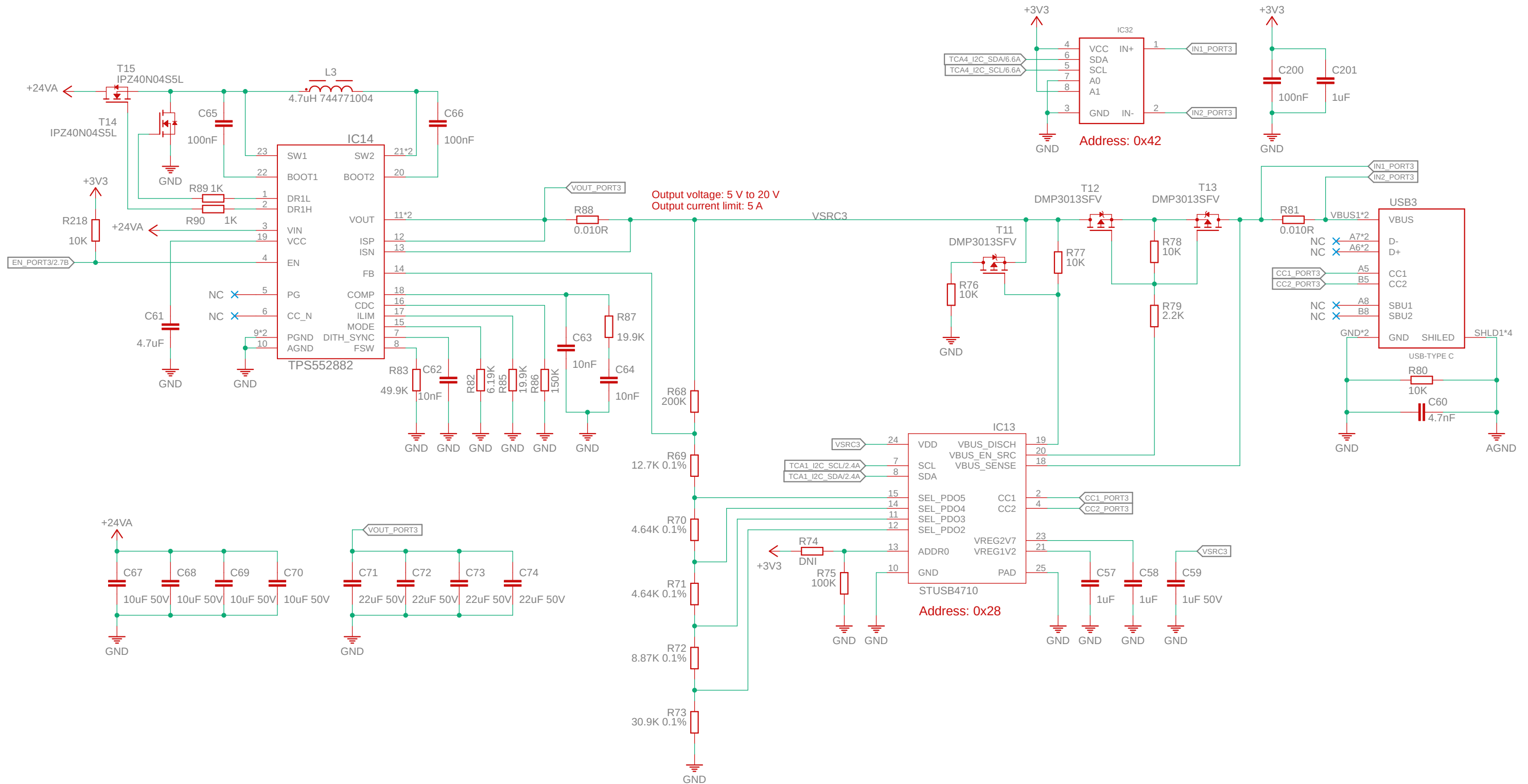
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Sheet: 6/12

v0.1.0

USB-C PD SOURCE PORT3

CURRENT MEASUREMENT



PDNode-600 Pro

DvidMakesThings
David Sipos @2025

USB-C PD PORT3

PDNode-600 Pro

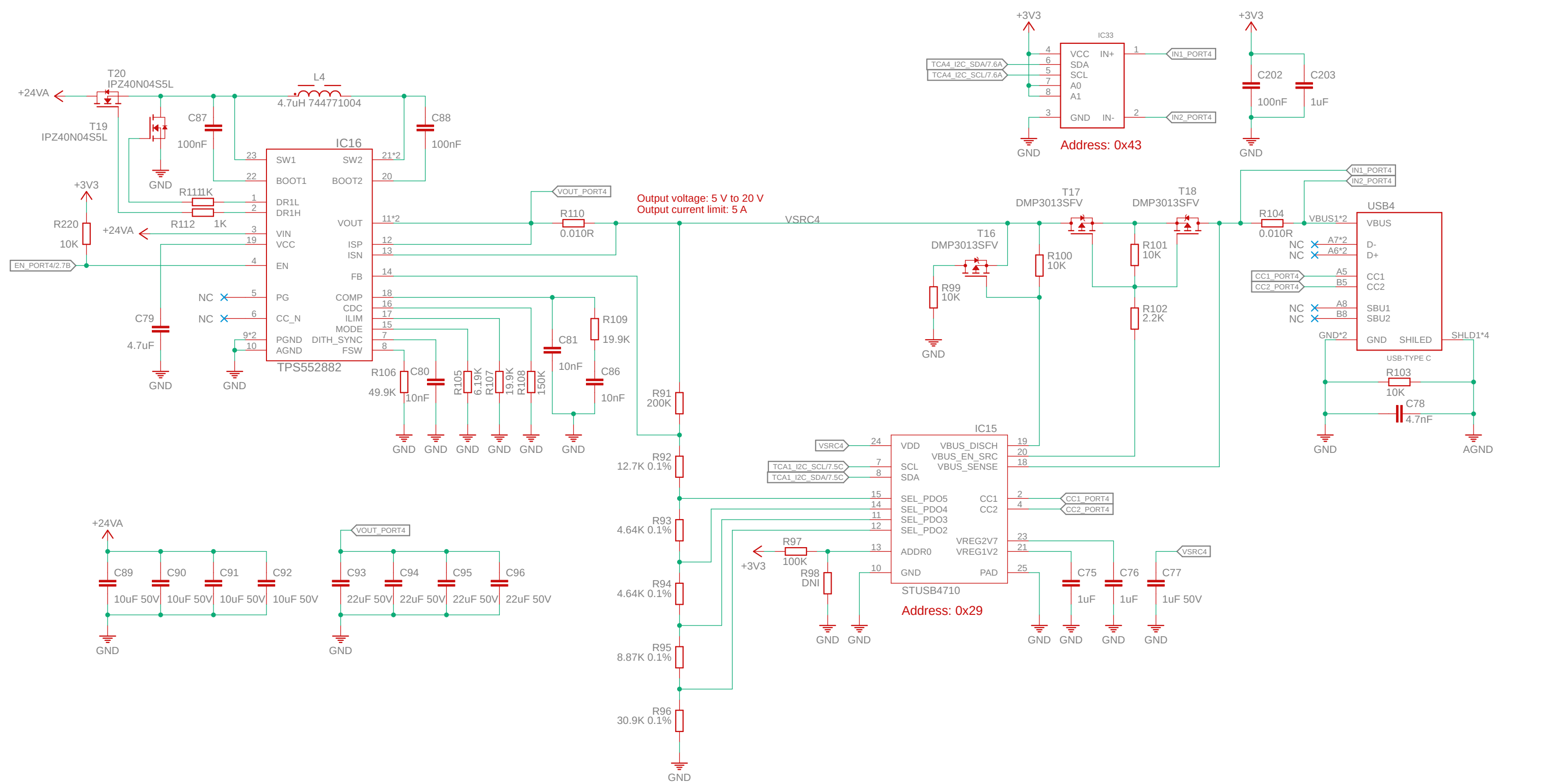
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v0.1.0

USB-C PD SOURCE PORT4

CURRENT MEASUREMENT



A

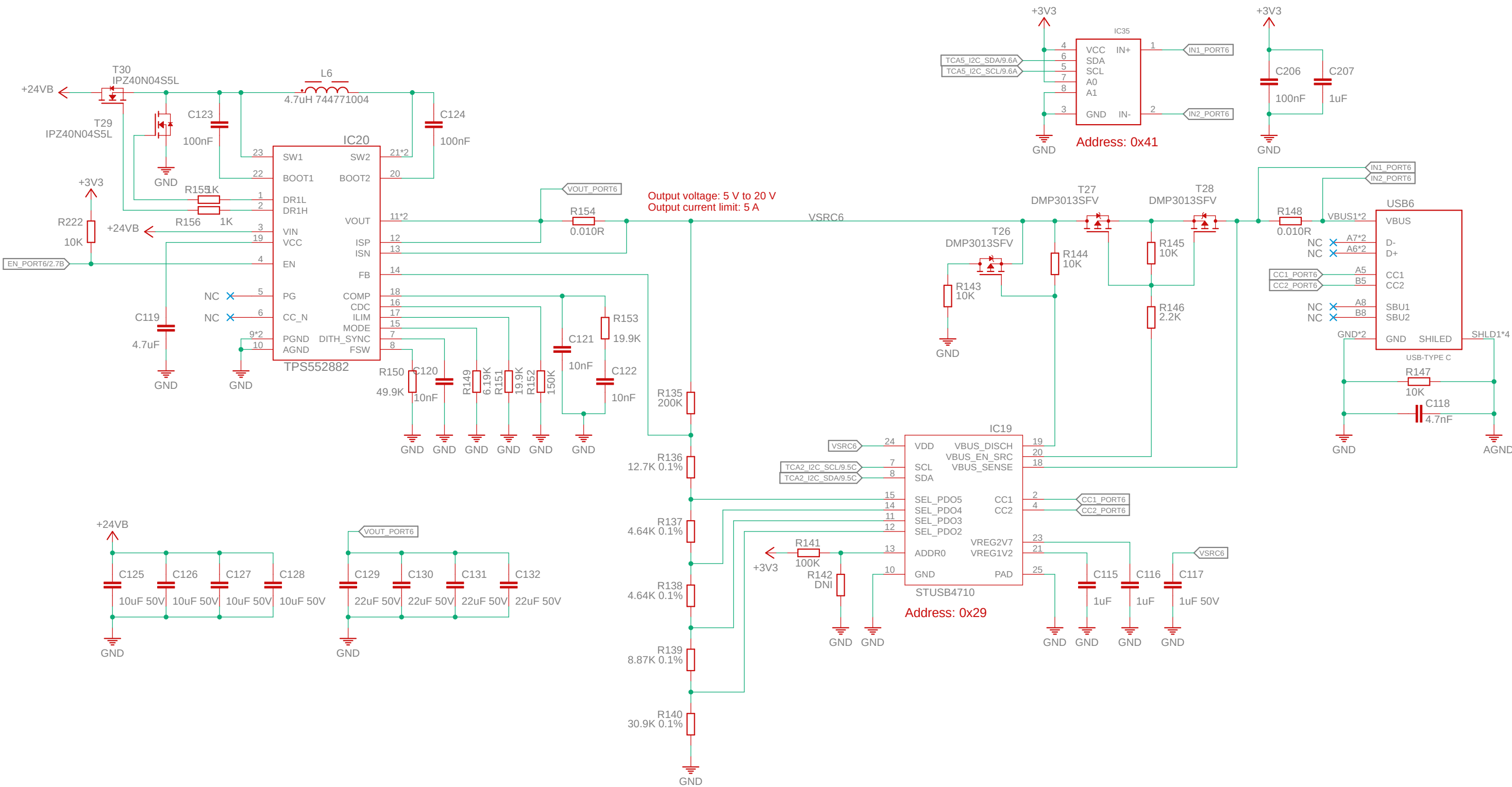


A



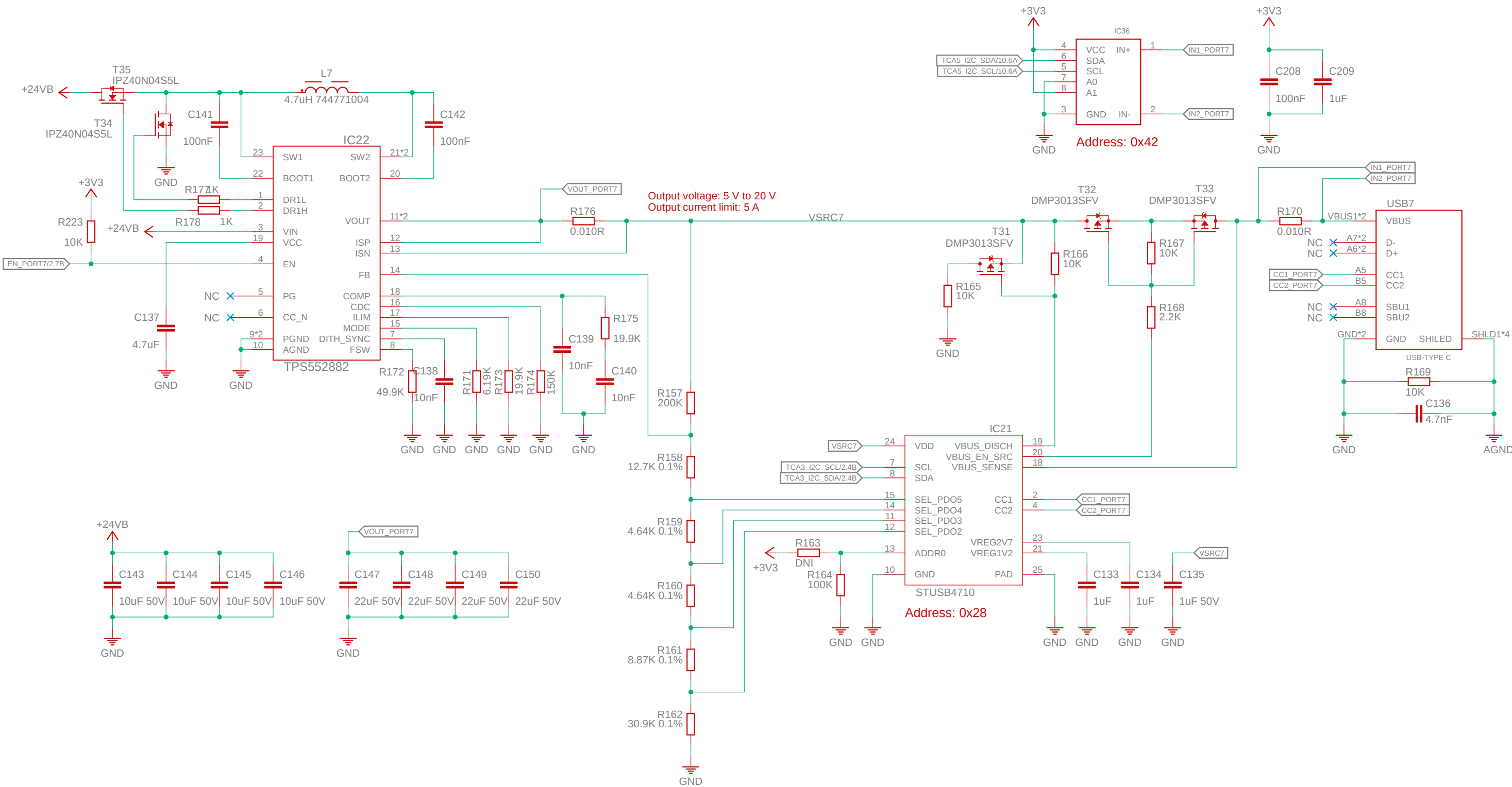
USB-C PD SOURCE PORT6

CURRENT MEASUREMENT



USB-C PD SOURCE PORT7

CURRENT MEASUREMENT



PDNode-600 Pro

DvidMakesThings

David Sipos @2025

USB-C PD PORT7

PDNode-600 Pro

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v0.1.0

USB-C PD SOURCE PORT8

CURRENT MEASUREMENT

