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Sheet: /

File: Multiport USB-C 2.0 hub.kicad\_sch

**Title: Multiport USB-C 2.0 hub**

Size: A4

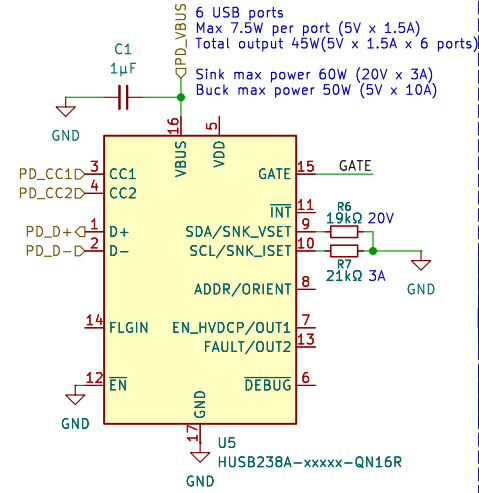
Date: 2025-12-10

Rev: R1

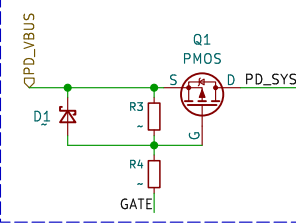
KiCad E.D.A. 9.0.3

Id: 1/5

## PD Sink Controller



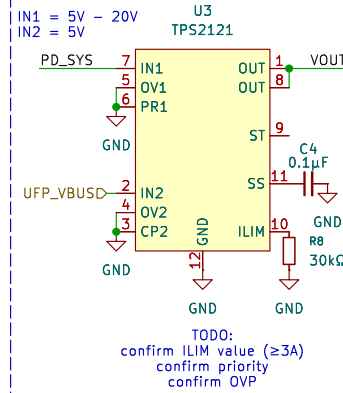
## PD VBUS Switching



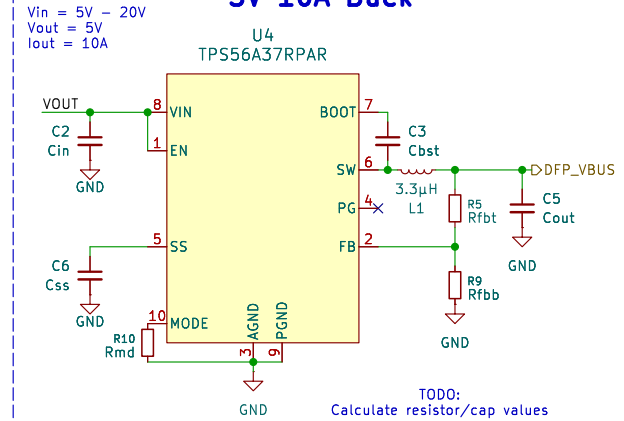
R_VSET kΩ	Voltage
6	12V
11	15V
19	20V
float	28V

R_ISET kΩ	Amperage
21	3A
float	3.25A

## Power MUX



## 5V 10A Buck



## TYPICAL APPLICATION CIRCUITS

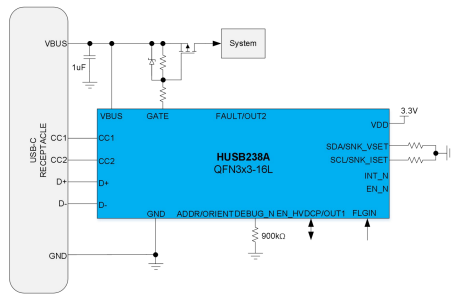
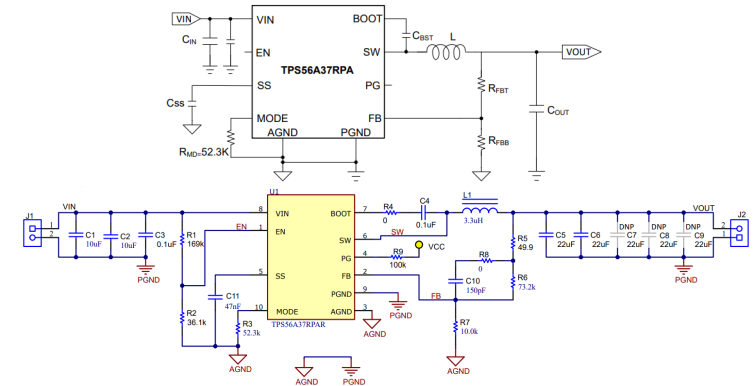


Figure 4: HUSB238A configured as GPIO mode (Maximum 28V)



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Sheet: /Power management/

File: PD.kicad\_sch

**Title: Power delivery components**

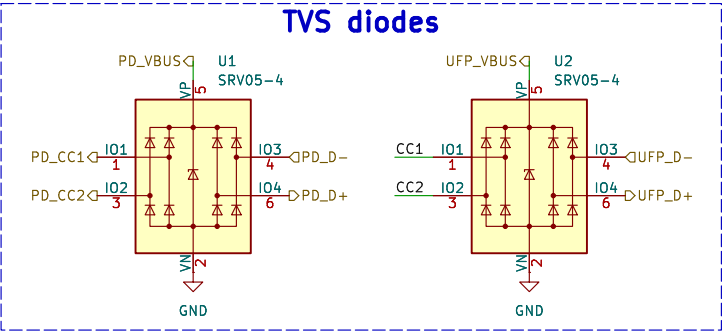
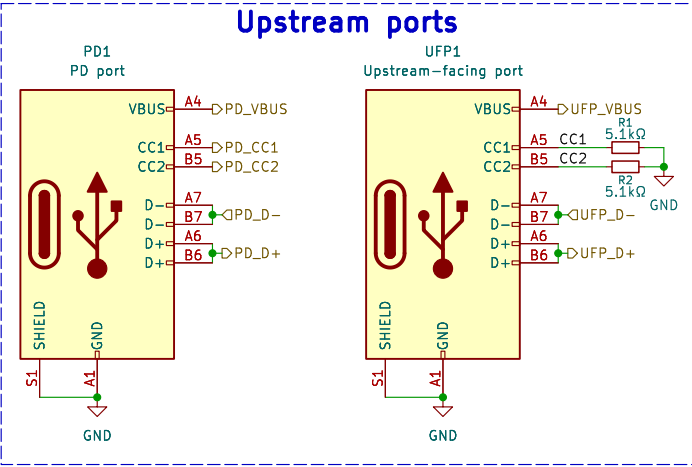
Size: A4

Date: 2025-12-10

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Sheet: /Upstream-facing ports/  
File: UFP.kicad\_sch

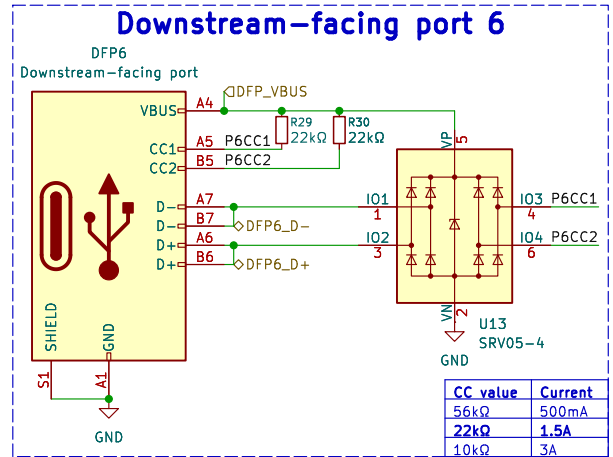
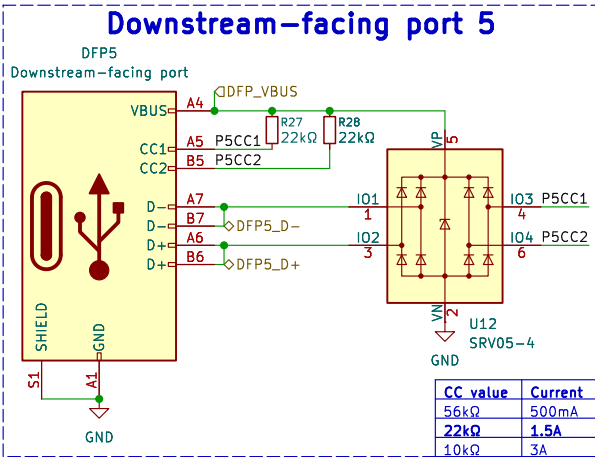
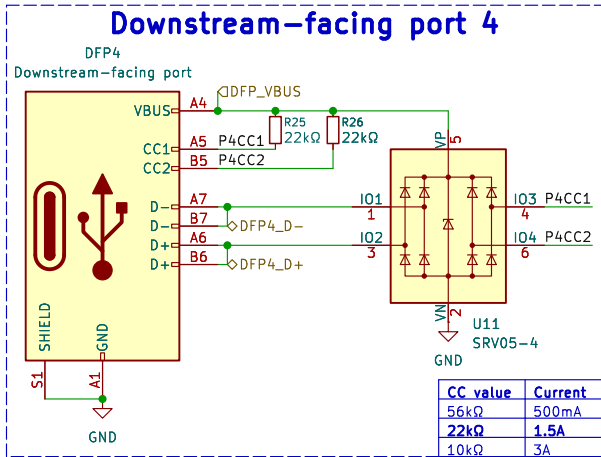
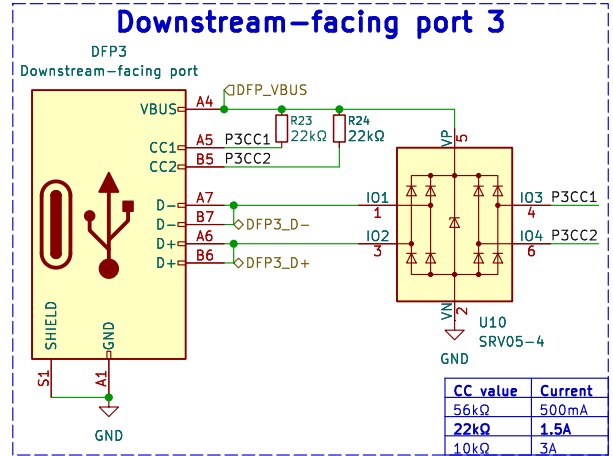
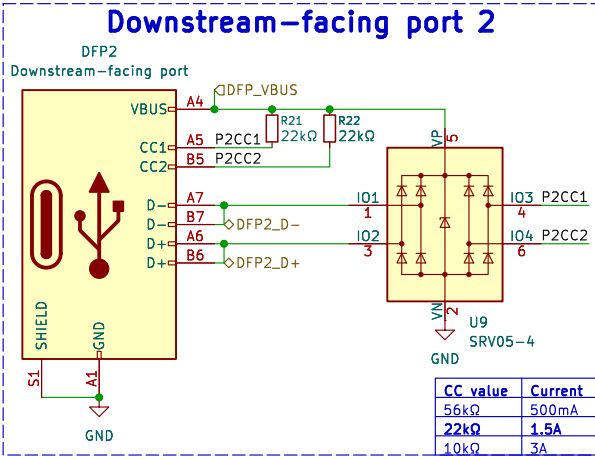
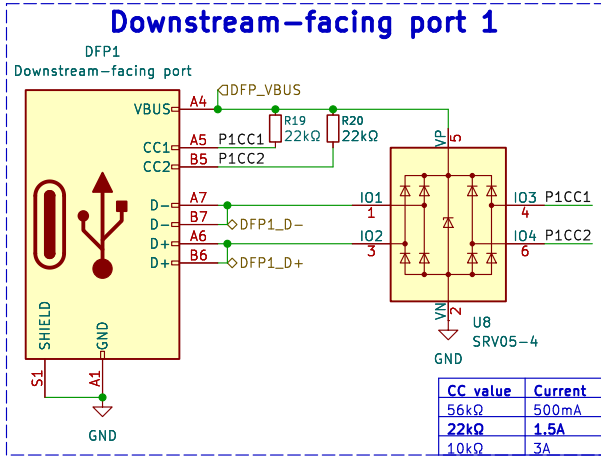
**Title: Upstream-facing ports**

Size: A4 Date: 2025-12-10

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Rev: R1

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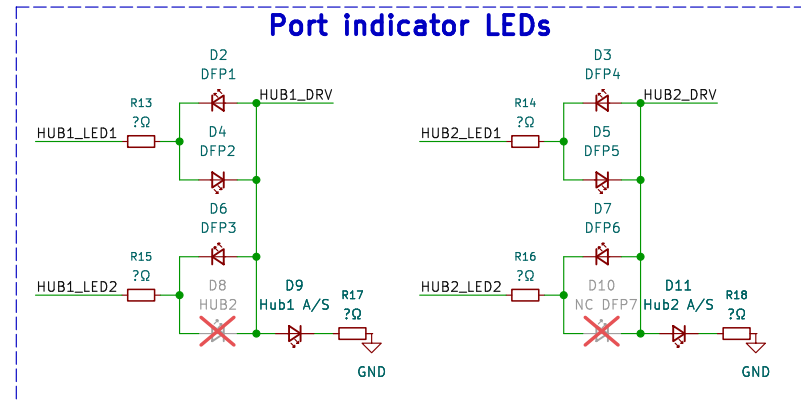
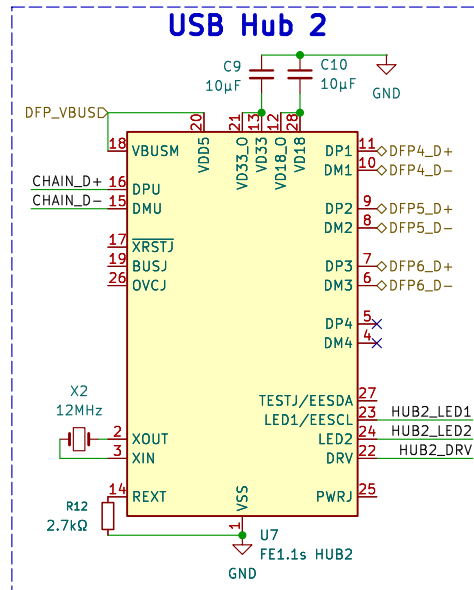
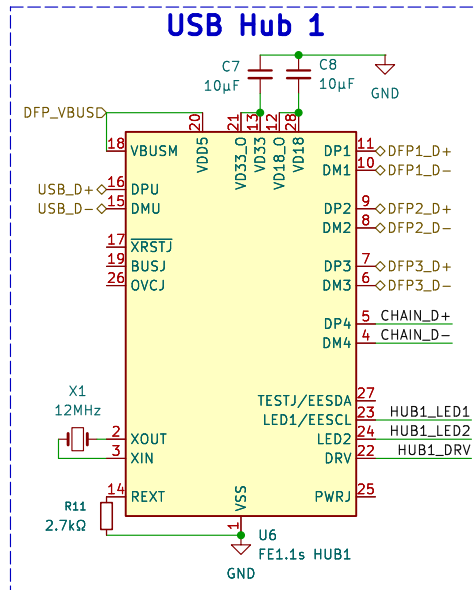
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Sheet: /Downstream-facing ports/  
File: DFPs.kicad\_sch

**Title: Downstream-facing ports**

Size: A4 Date: 2025-12-10  
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Pin Description Table

Pin Name	LQFP Pin No.	SSOP Pin No.	Type	Function	Note
VSS	10	1	P	Ground.	
XOUT	11	2	OSC	12 MHz Crystal Oscillator output.	
XIN	12	3	OSC	12 MHz Crystal Oscillator input.	
DM4	14	4	UT	The D- pin of the 4 <sup>th</sup> Downstream Facing Port.	
DP4	15	5	UT	The D+ pin of the 4 <sup>th</sup> Downstream Facing Port.	
DM3	17	6	UT	The D- pin of the 3 <sup>rd</sup> Downstream Facing Port.	
DP3	18	7	UT	The D+ pin of the 3 <sup>rd</sup> Downstream Facing Port.	
DM2	20	8	UT	The D- pin of the 2 <sup>nd</sup> Downstream Facing Port.	
DP2	21	9	UT	The D+ pin of the 2 <sup>nd</sup> Downstream Facing Port.	
DM1	23	10	UT	The D- pin of the 1 <sup>st</sup> Downstream Facing Port.	
DP1	24	11	UT	The D+ pin of the 1 <sup>st</sup> Downstream Facing Port.	
VD18_O	26	12	P	1.8V power output from 3.3V→1.8V integrated regulator – a 10µF decoupling capacitor is required.	
VD33	27	13	P	3.3V power input for 3.3V→1.8V integrated regulator.	
REXT	28	14		A 2.7kΩ (± 1%) resistor should be connected to VSS to provide internal bias reference.	
DMU	30	25	UT	The D- pin of the Upstream Facing Port.	
DPU	31	16	UT	The D+ pin of the Upstream Facing Port.	
XRSTJ	34	17	I	External Reset, active low, is an optional source of chip reset signal, beside the build-in Power-On-Reset. The minimum low pulse width is 10 µs.	
VBUSM	35	18	I	The V <sub>bus</sub> Monitor of upstream facing port.	
BUSJ	36	19	I	Bus power indicator: 0 – Bus Powered; 1 – Self Powered.	
VDD5	38	20	P	5V power input for integrated 5V→3.3V regulator.	
VD33_O	39	21	P	3.3V power output from 5V→3.3V integrated regulator – a 10µF decoupling capacitor is required.	
TEST	40	—	I	Test Mode Enable – should be tied to ground for normal operation.	
DRV	42	22	I/O	LED Drive Control	1
LED1/ EESCL	43	23	I/O	Port 1 and Port 3 Enabled Indicator (LED) Control, and external Serial EEPROM Clock.	1
LED2	44	24	I/O	Port 2 and Port 4 Enabled Indicator (LED) Control	1
PWRJ	47	25	O	Downstream Device Power Enable, active low, for <i>Gauged Power Switching</i> .	
OVCJ	48	26	I	Over Current Indicator, active low, for <i>Global Over-Current Protection</i> .	
TESTJ/ EESDA	2	27	I/O	Test Mode Enable, active low with internal pull-up, and external Serial EEPROM Data/Address.	1
VD18	9	28	P	1.8V power input.	

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Sheet: /USB hub/  
File: USB hub IC.kicad\_sch

**Title: USB 2.0 hub controllers + LEDs**

Size: A4 Date: 2025–12–10

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Rev: R1

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