

ChipWhisperer CW340 "Luna Board" - Xilinx Kintex Ultrascale Target Board

NewAE Technology Inc.

Revision Summary

- 00: Ultra-alpha.
- 02: Test version.
- 03: First Beta
- 04: RC
 - * Add HD connections, including reset
 - * Fix VCCINT led
 - * Add PLL2 header & selection
- 05: Production
 - * R187 - 3.3V from HD board instead

Known Issues / Mods

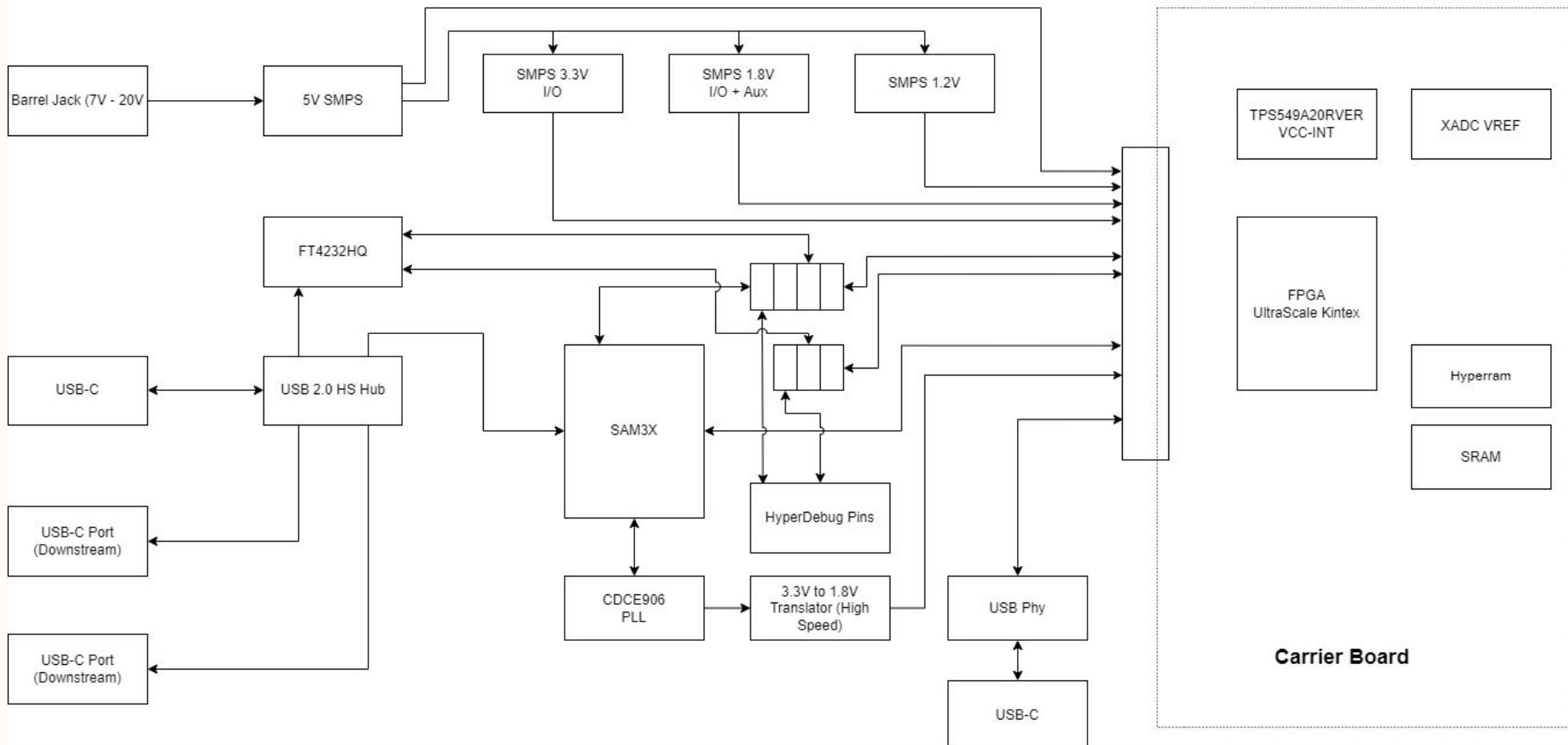
- on 05:
 - * Add pull-down on Q24/Q25 using 10K
 - * Change R260/R261 to 33 Ohm.

Title: Luna Board - The Cover Sheet		Approved: Yes	
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File: CW340_Cover_Page.SchDoc			

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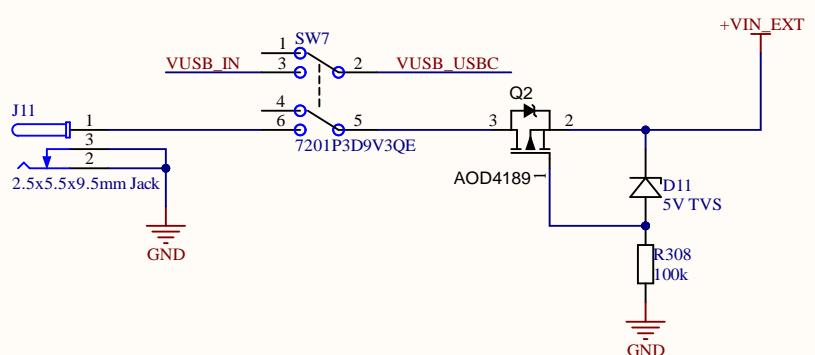
Block Diagram


Carrier Board

Title: Block Diagram		Approved: *	
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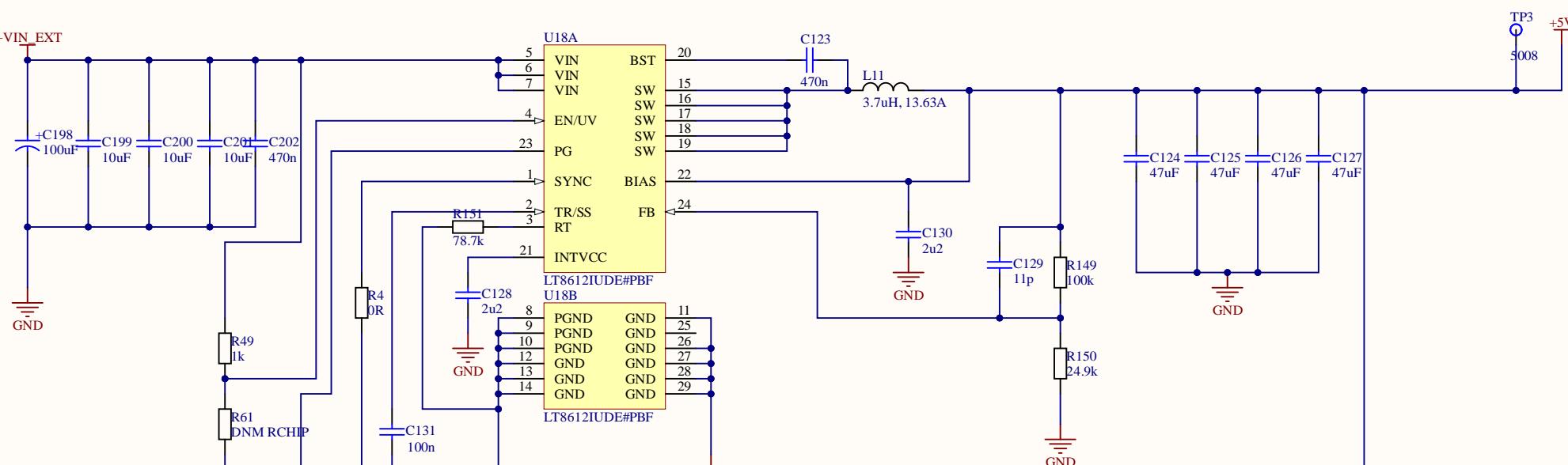
INPUT POWER

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△ Check R149/R150!

△ Based on design from
<https://webench.ti.com/appinfo/webench/scripts/SDP.cgi?ID=9C49F428E2C4FF82>

Title: **5V Regulator**

Approved: Yes

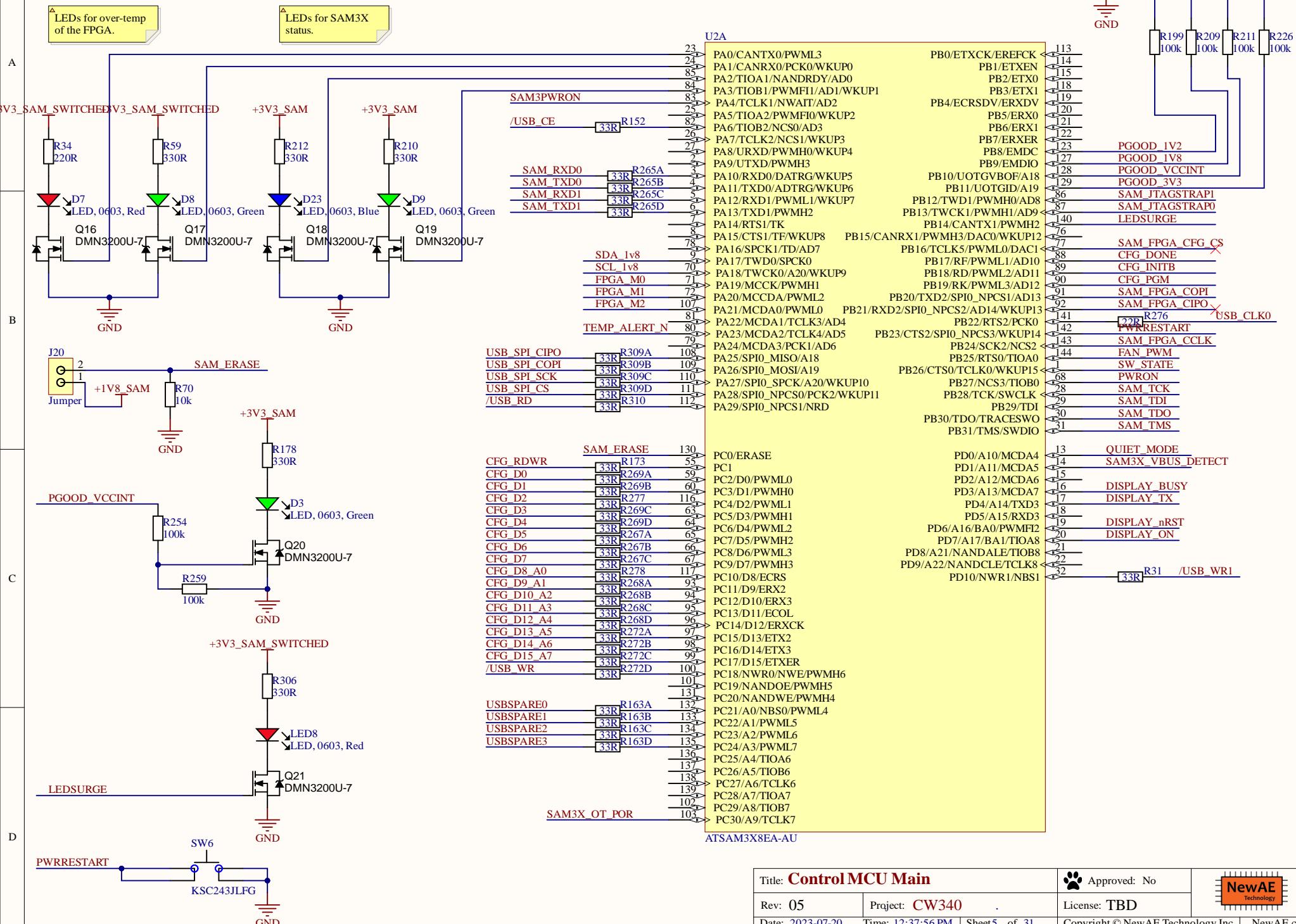


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SAM3X CPU



Title: Control MCU Main

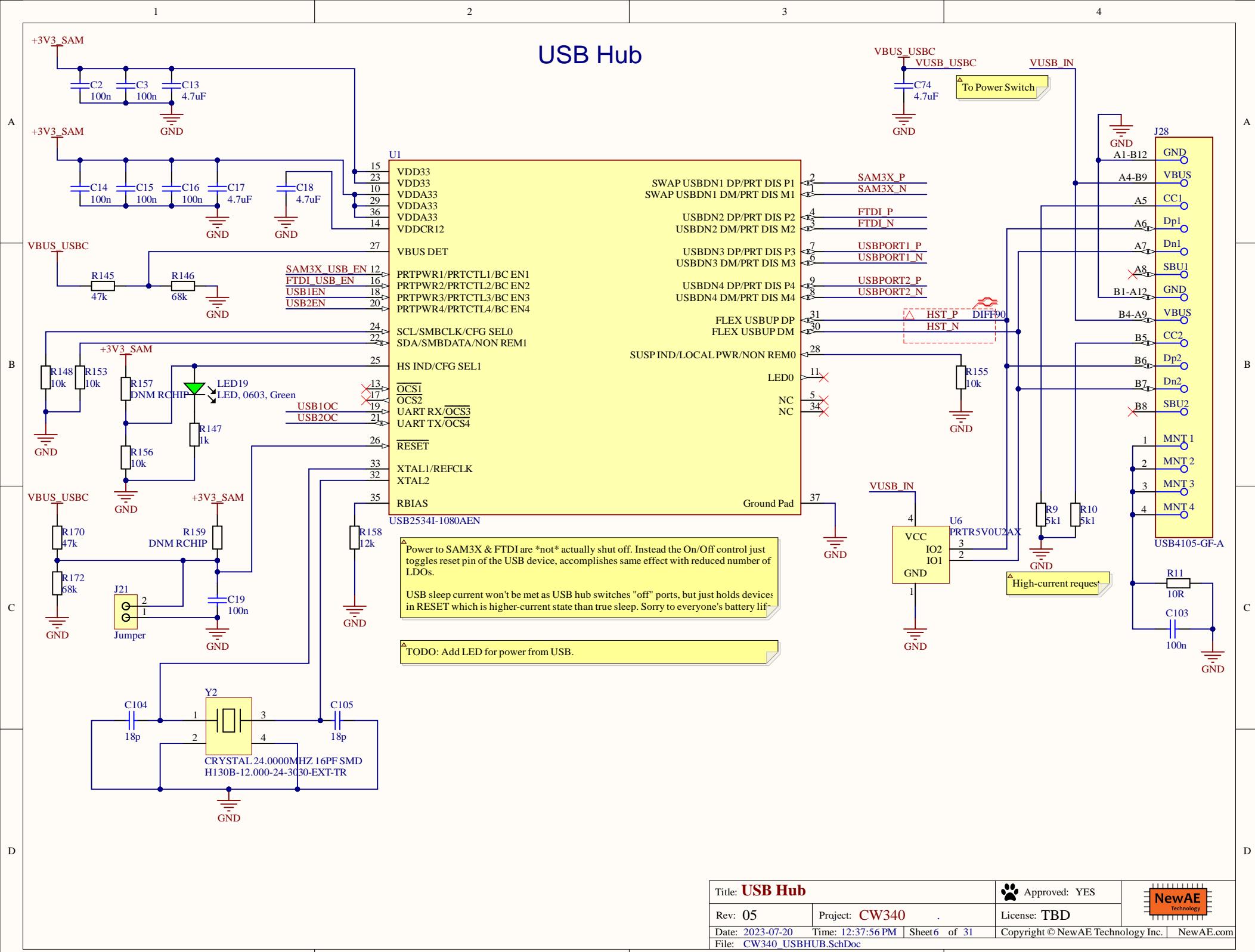
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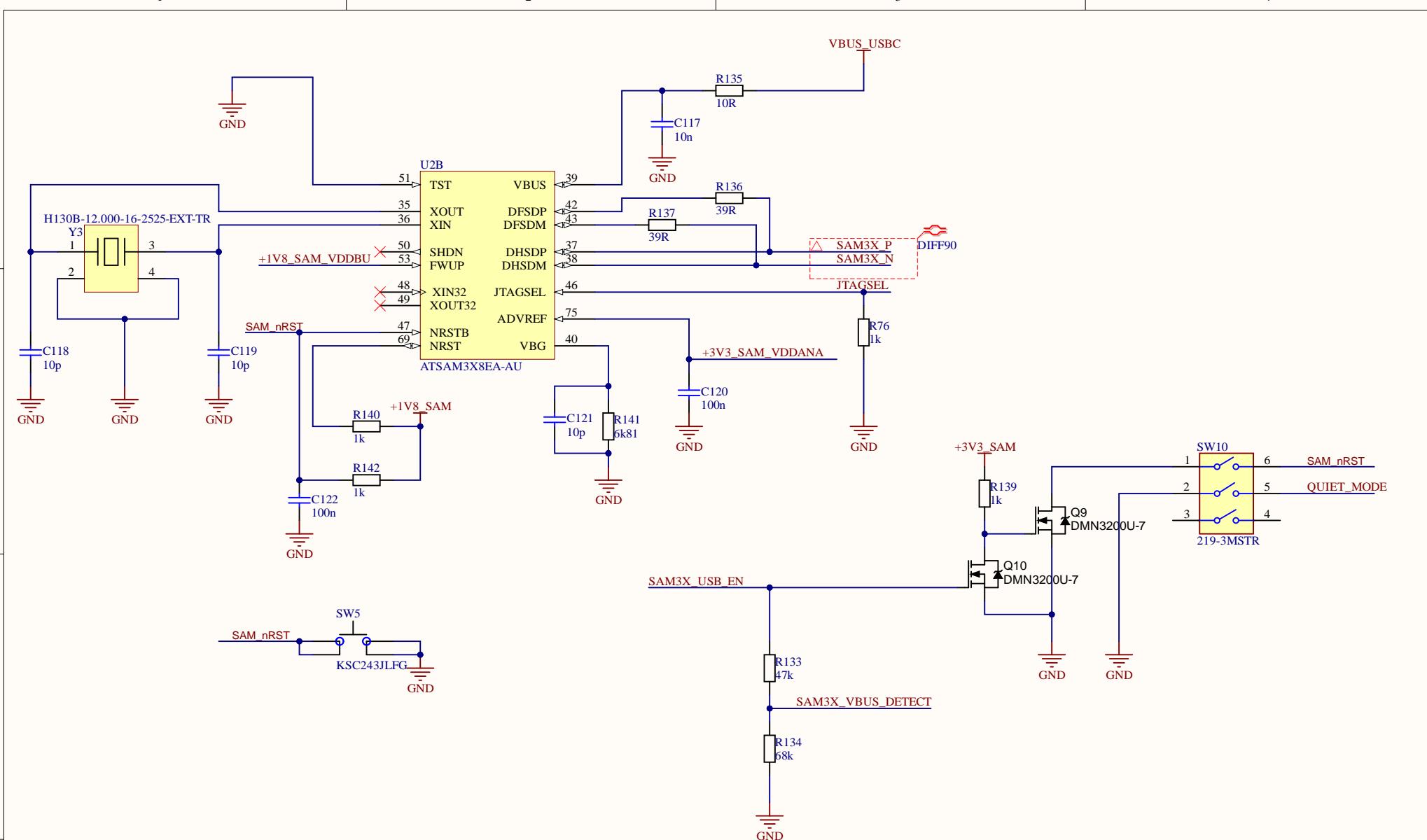
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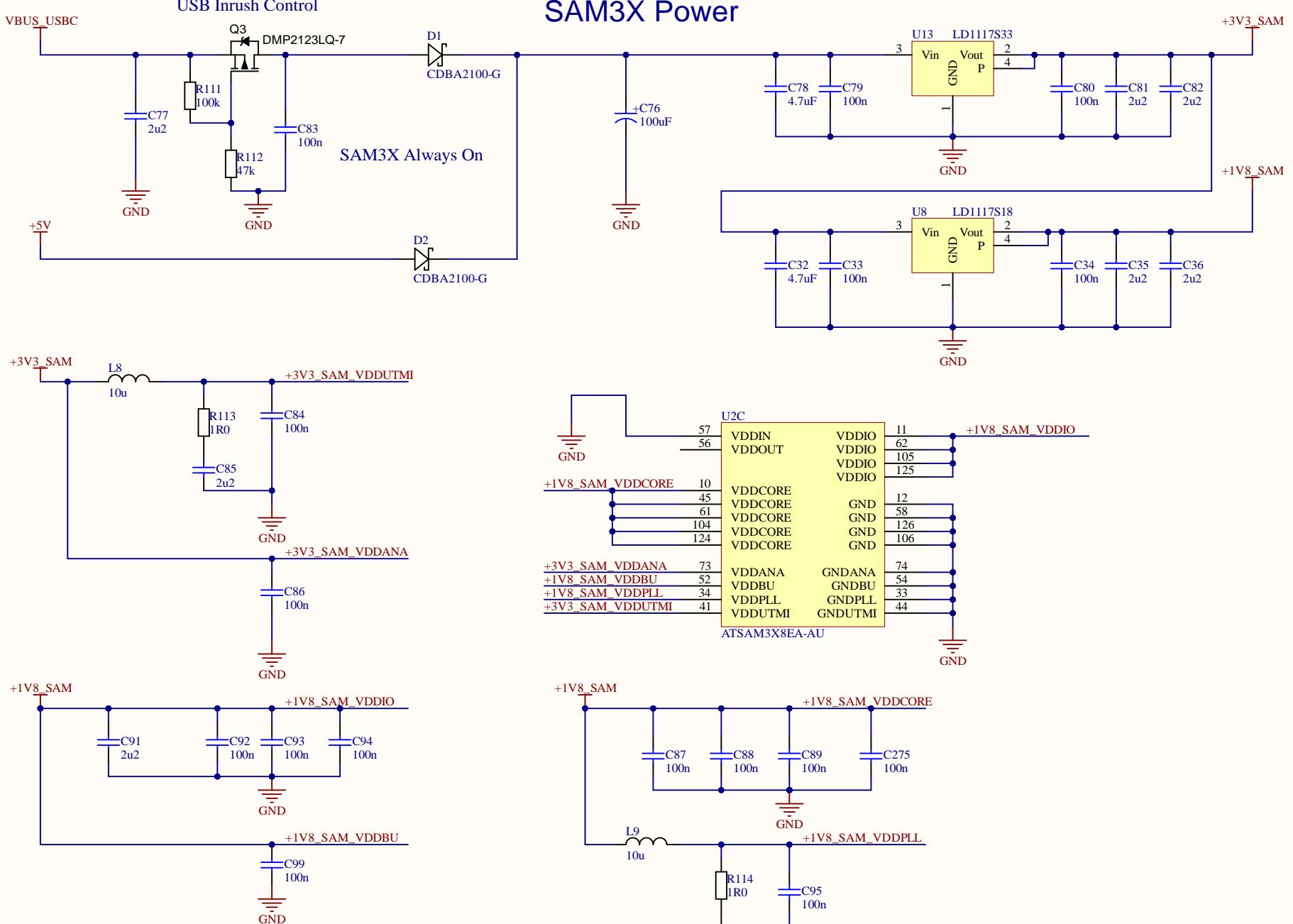
Approved: No



USB Hub





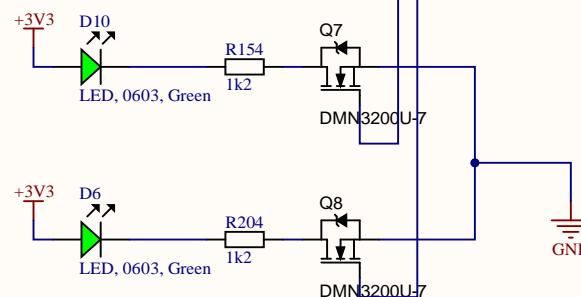
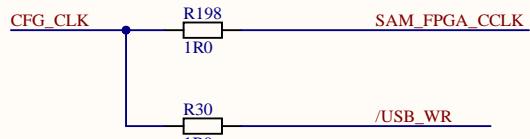
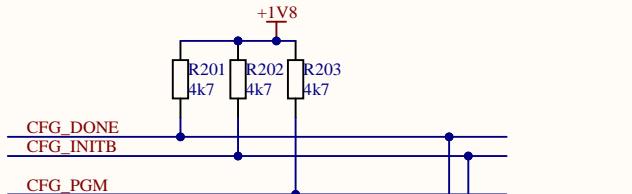
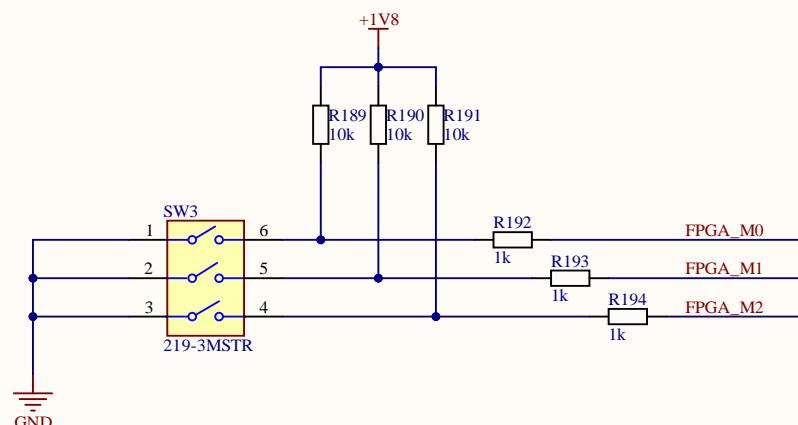


MCU Power Approved: YES 

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D

Title: Configuration Routing		Approved: NO	NewAE Technology
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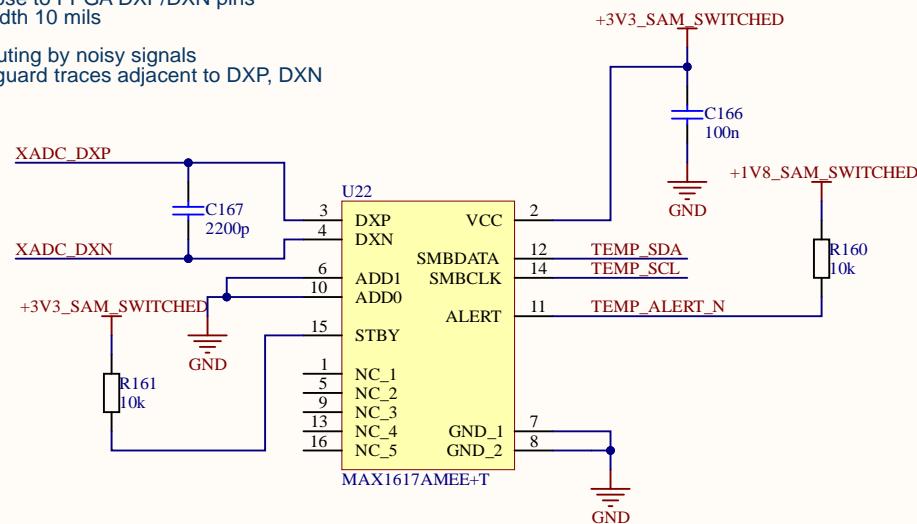
Thermal Diode Temp Sensor

B

B

Place close to FPGA DXP/DXN pins
Trace width 10 mils

Avoid routing by noisy signals
Include guard traces adjacent to DXP, DXN



I2C Address = 0x18

Temperature diode ideality factor = 1.010

Temperature diode series resistance = 2

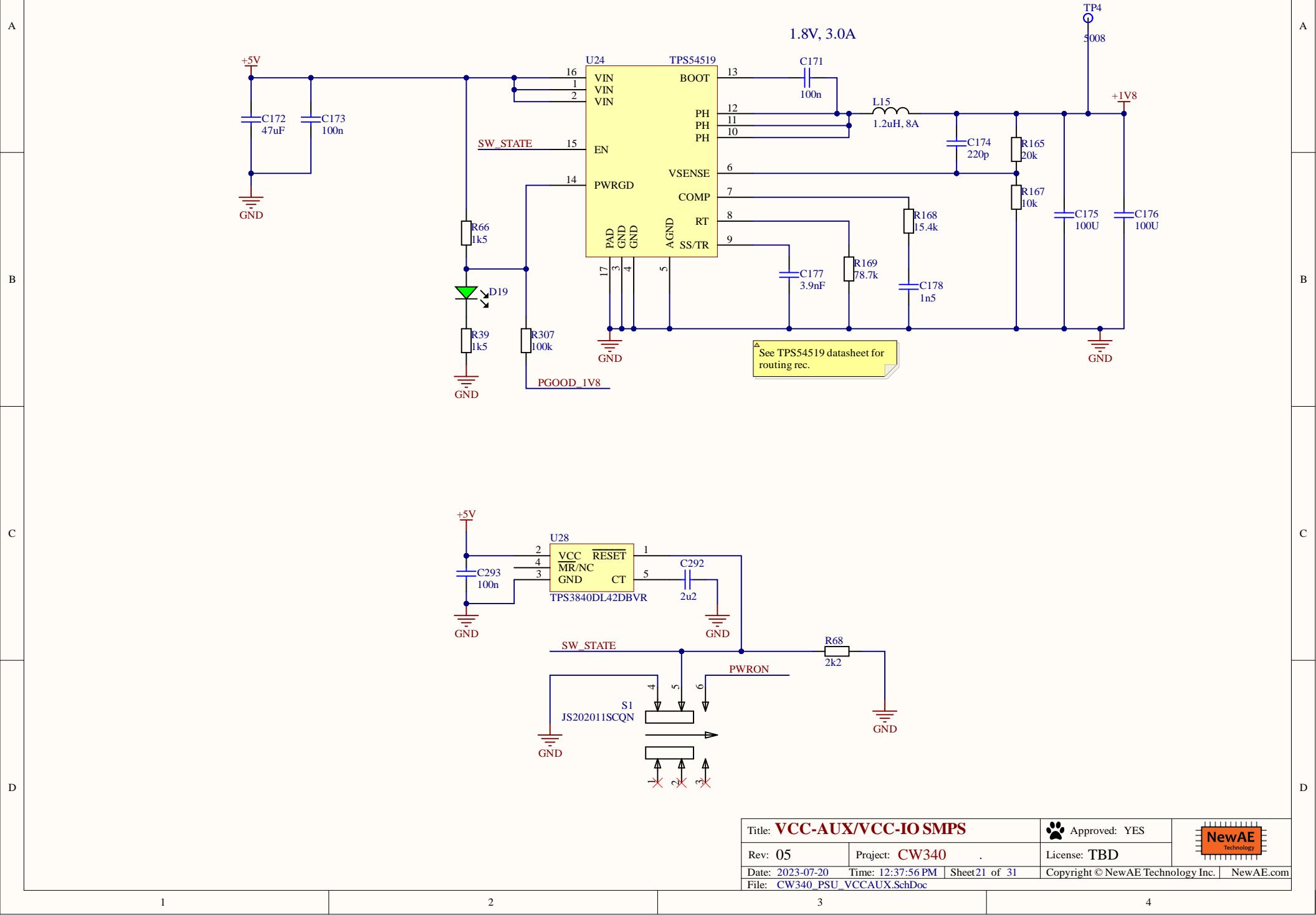
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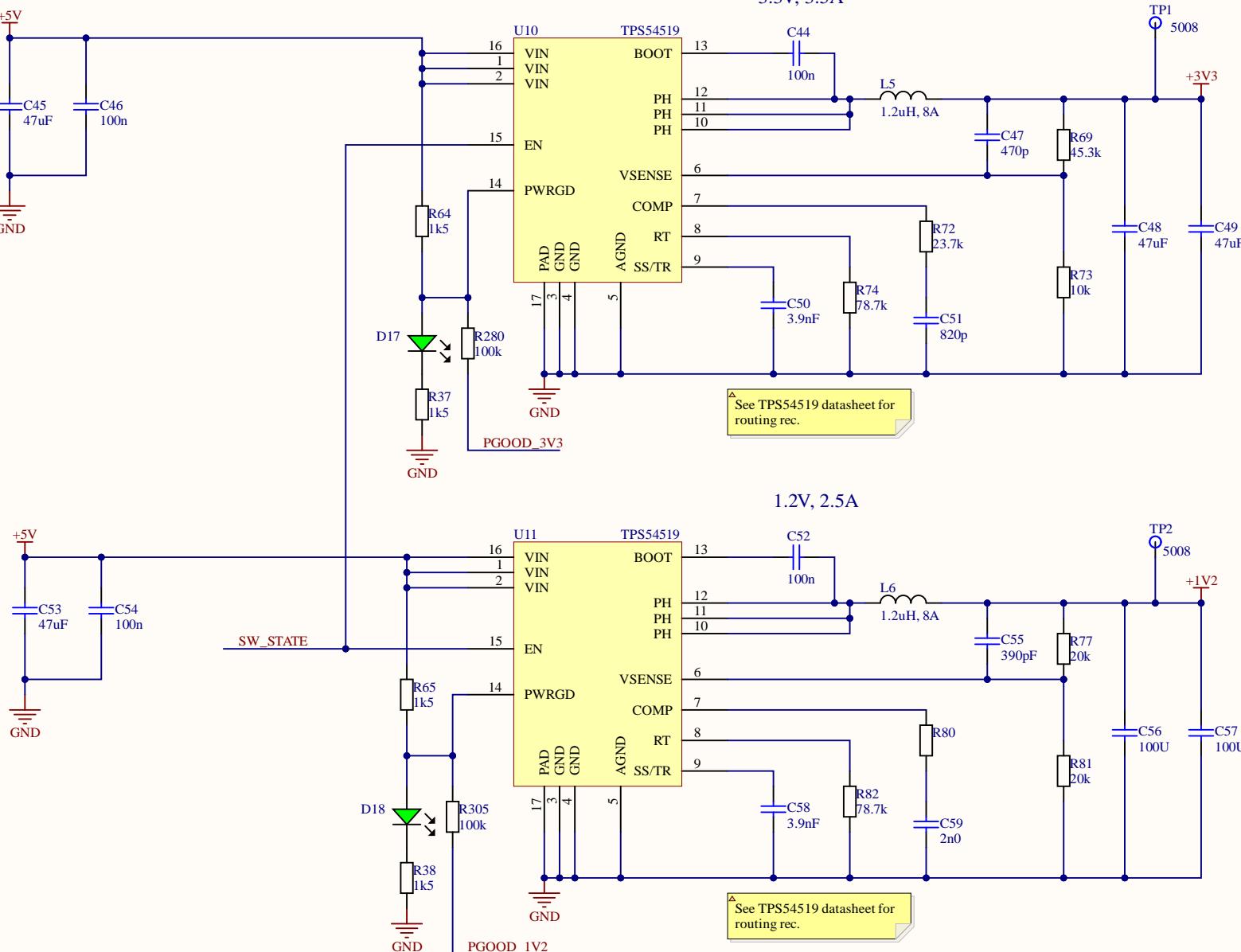
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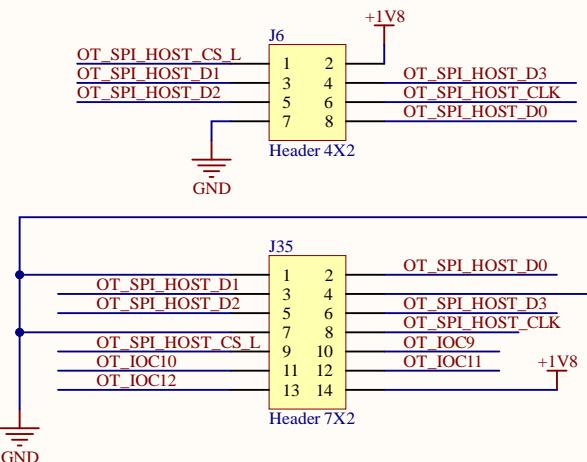
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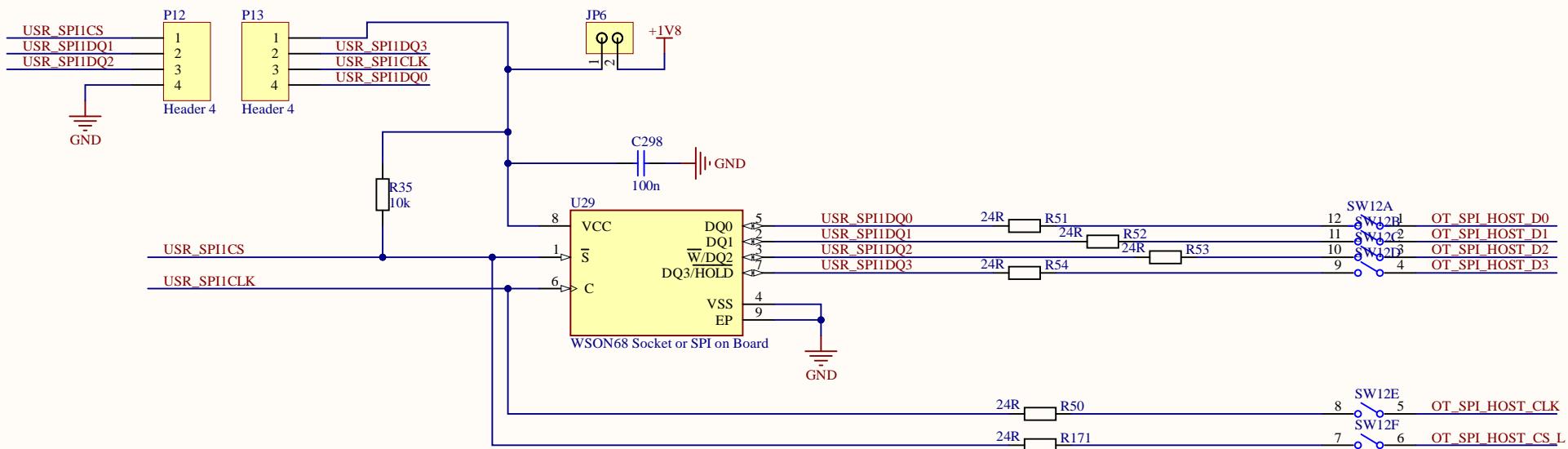
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Rev: 05	Project: CW340	License: TBD	
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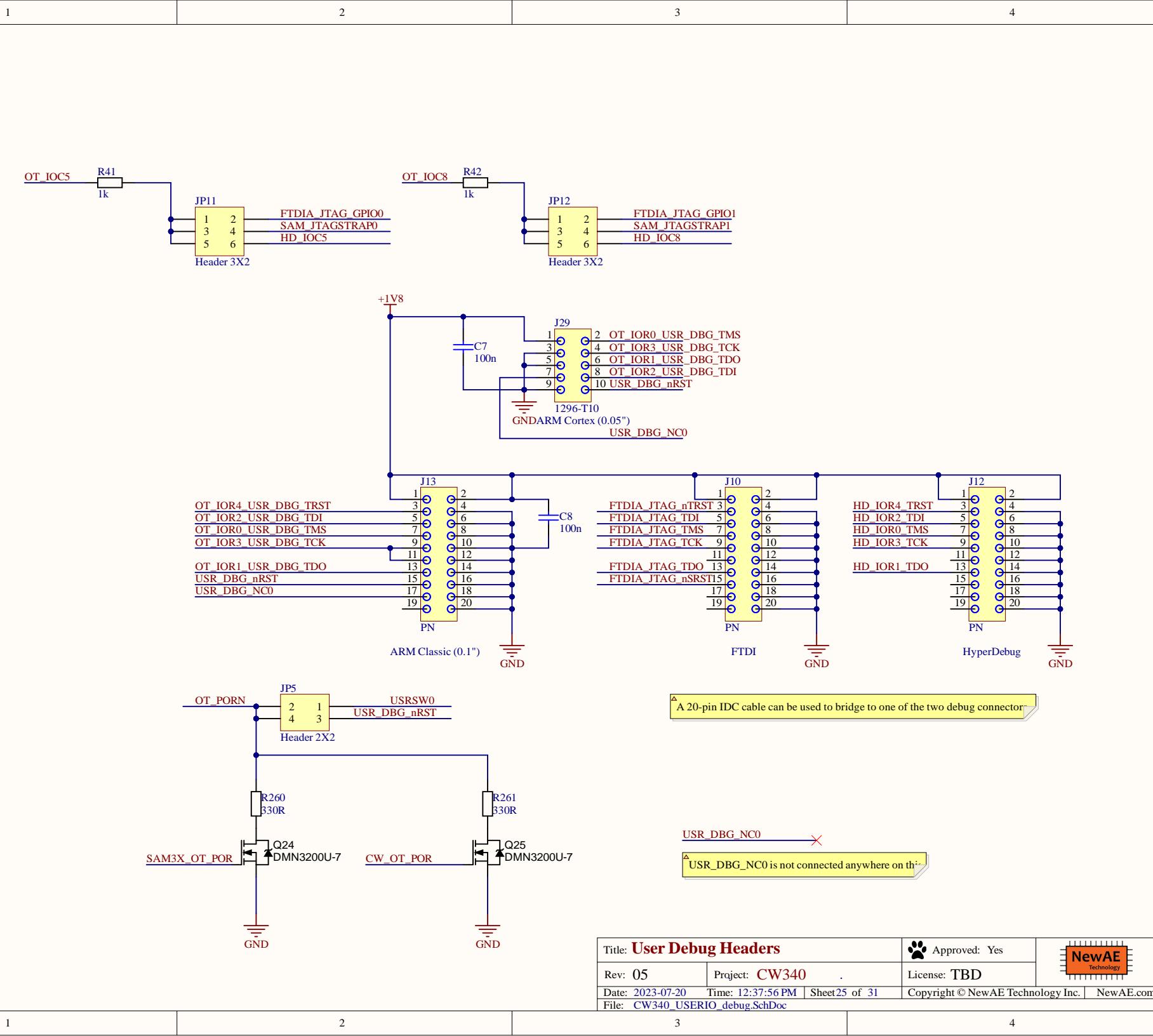
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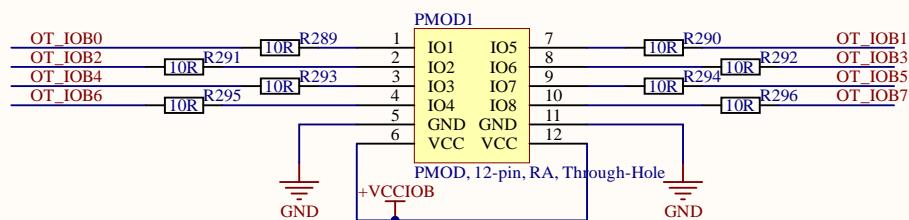
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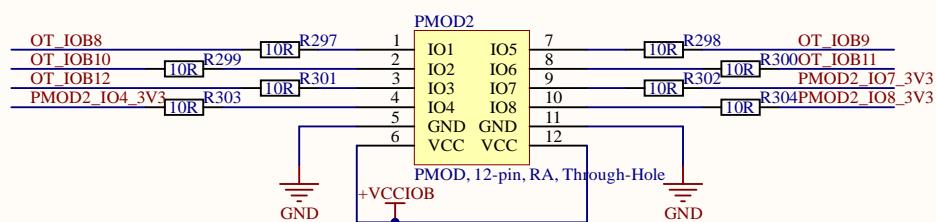
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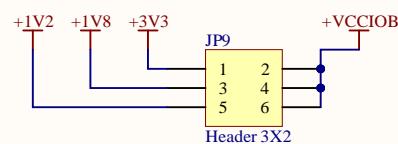
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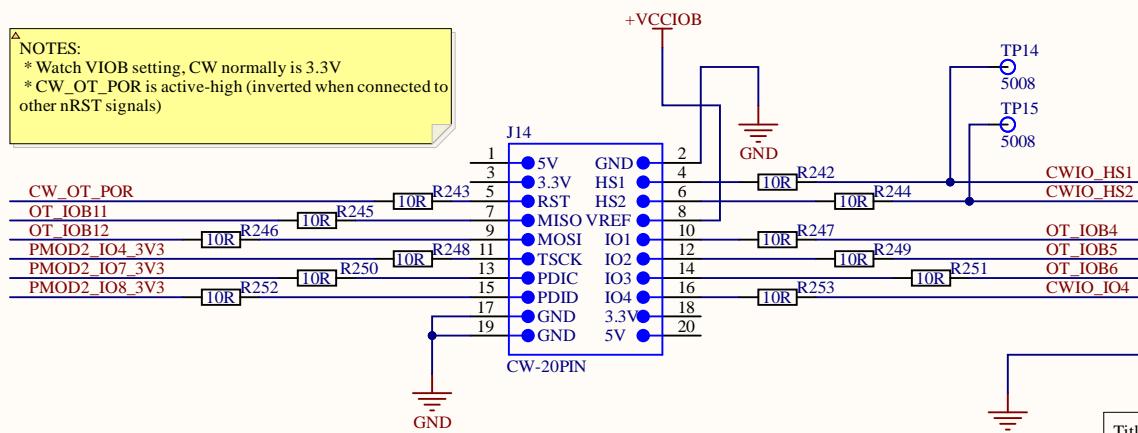
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NOTES:
 * Watch VIOB setting, CW normally is 3.3V
 * CW_OT_POR is active-high (inverted when connected to other nRST signals)



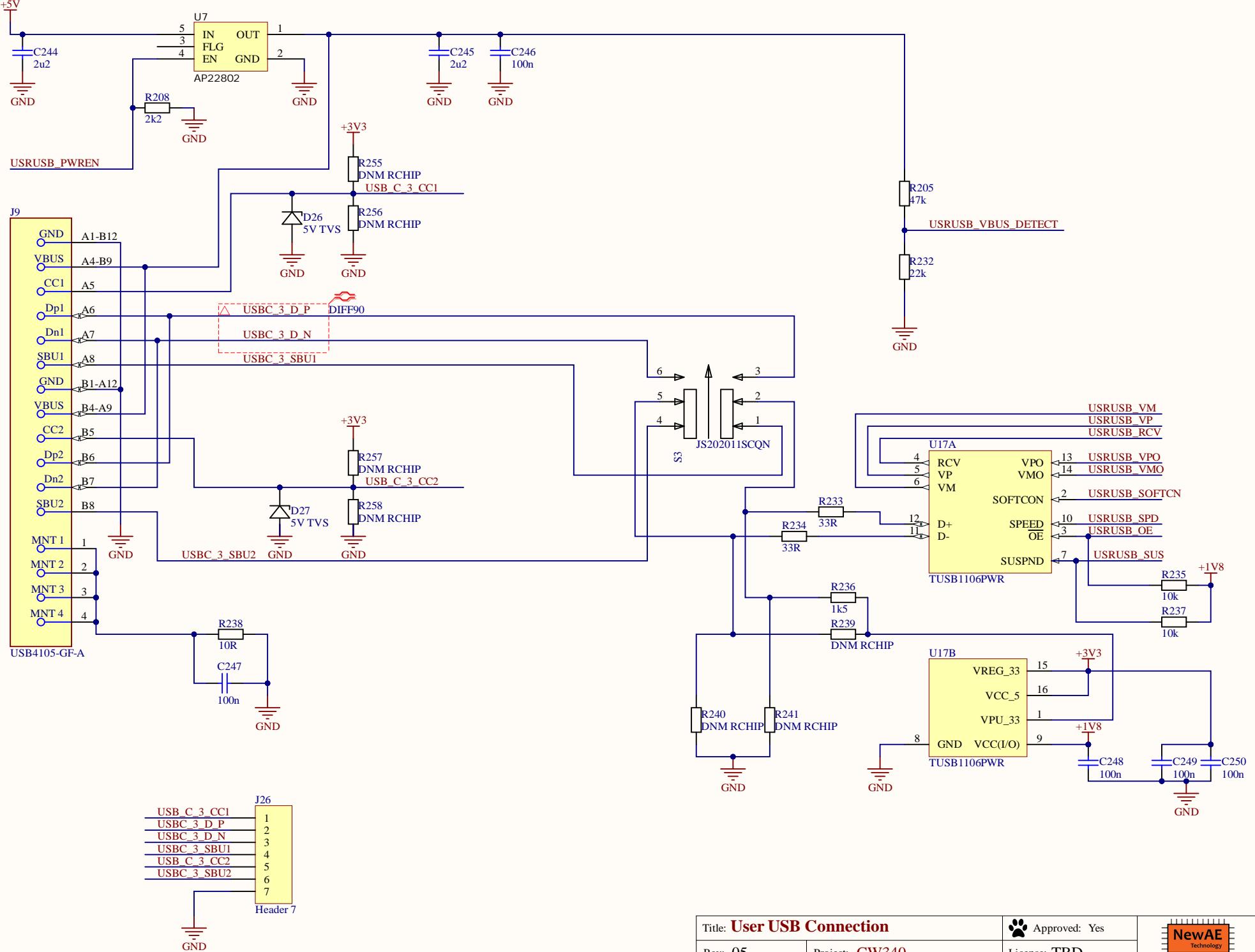
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File: CW340_USERIO_Header.SchDoc



Title: **User USB Connection**

Approved: Yes



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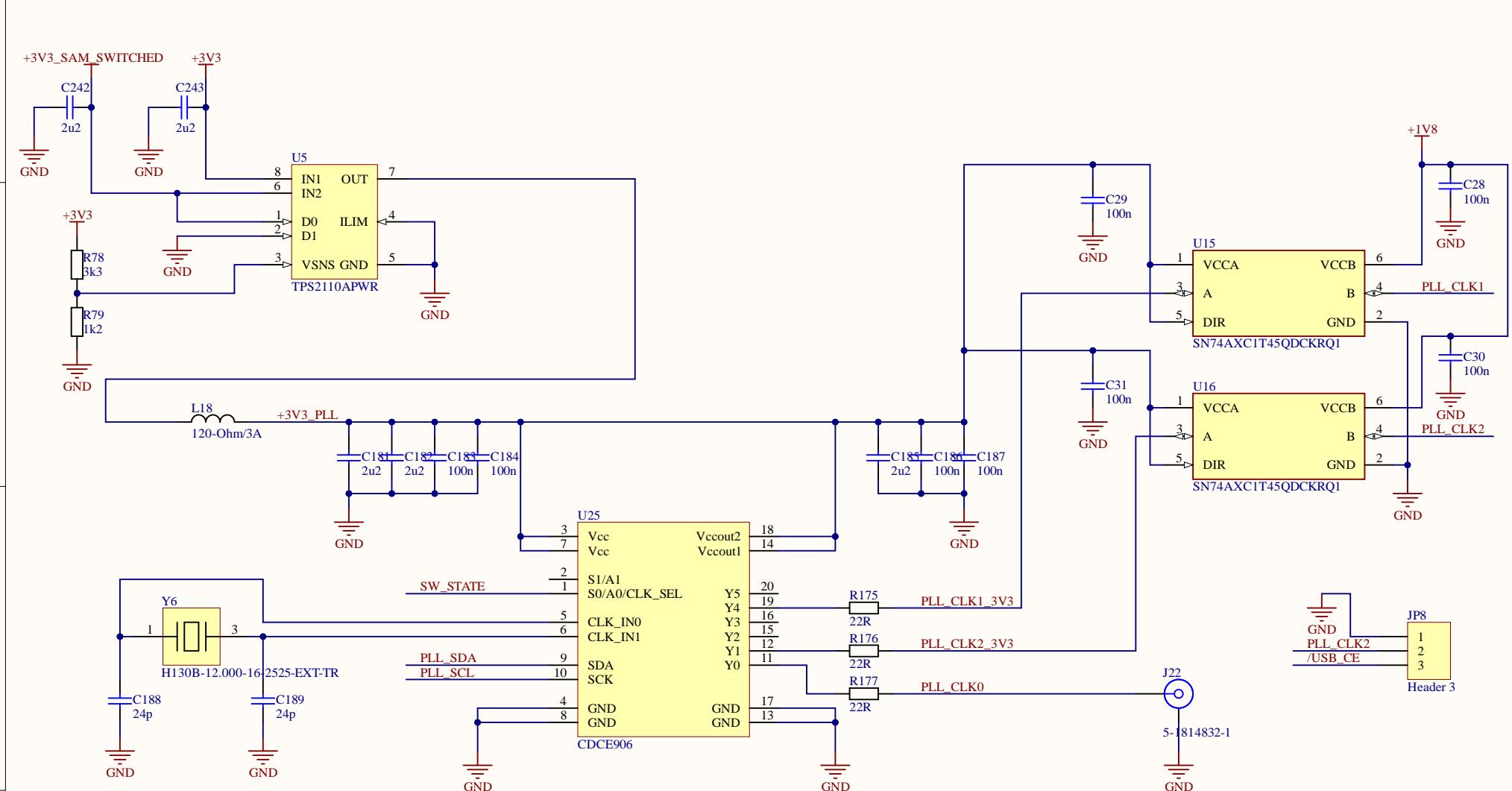
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CLOCKS



Title: **PLL, Clocks for FPGA**

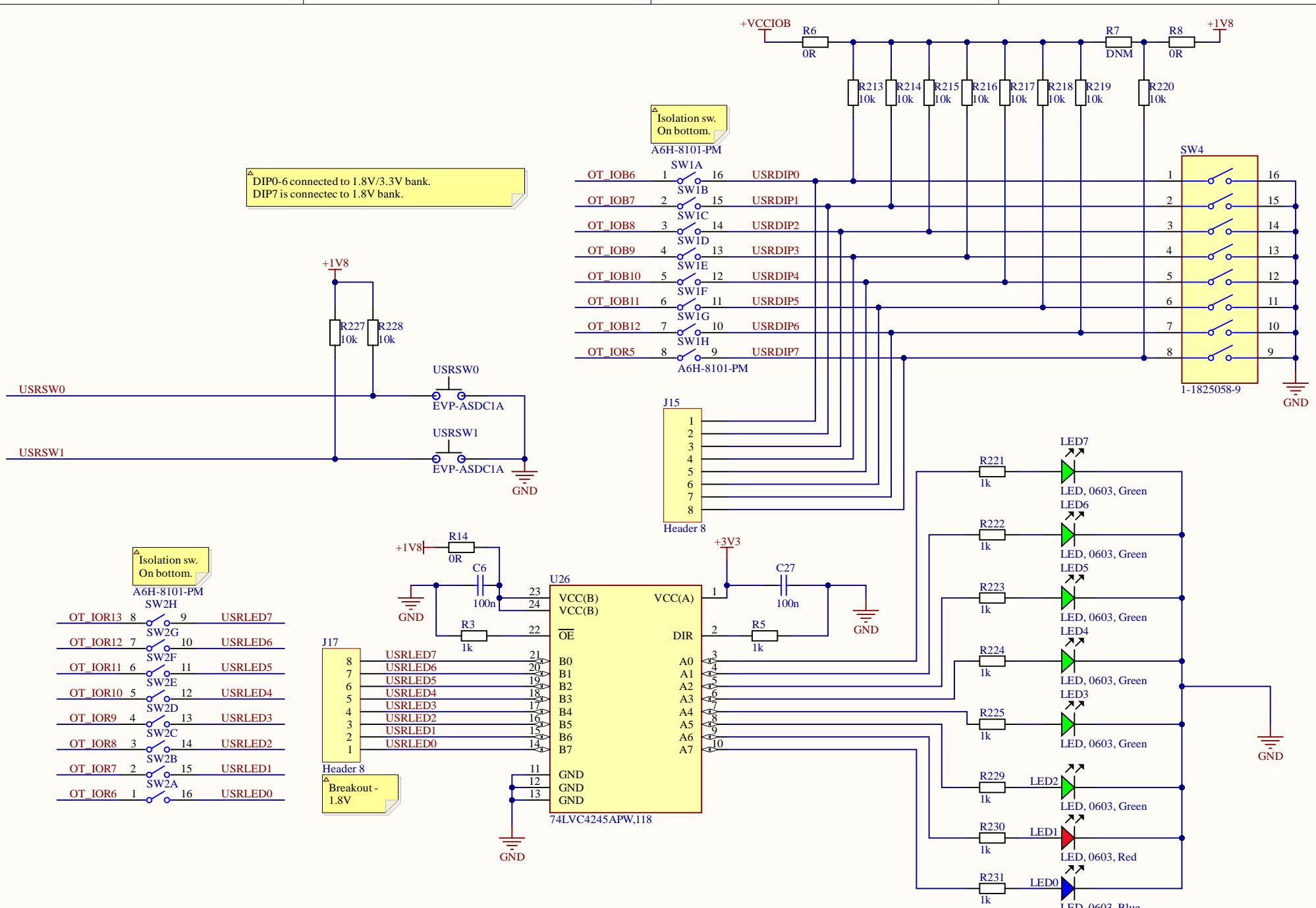
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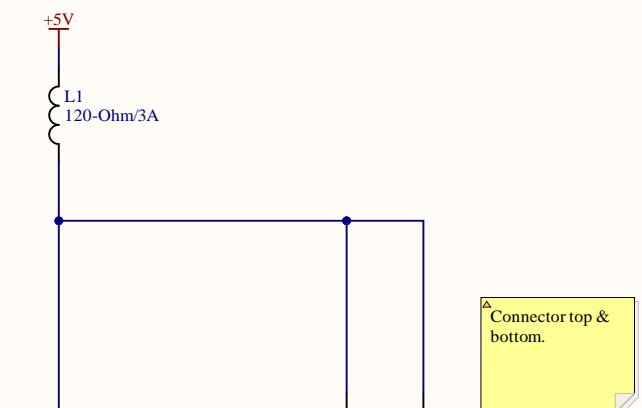
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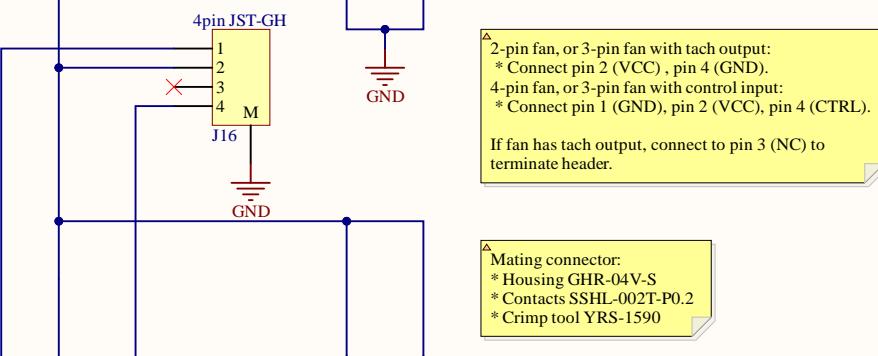


Title: **User LED / Switches** Approved: NO
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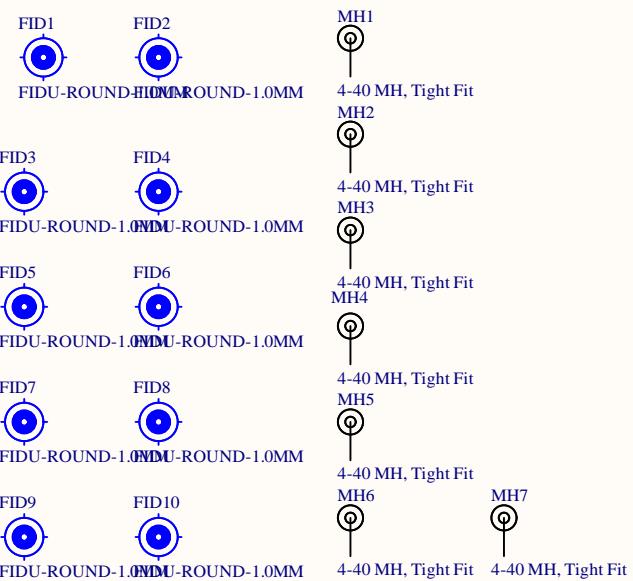
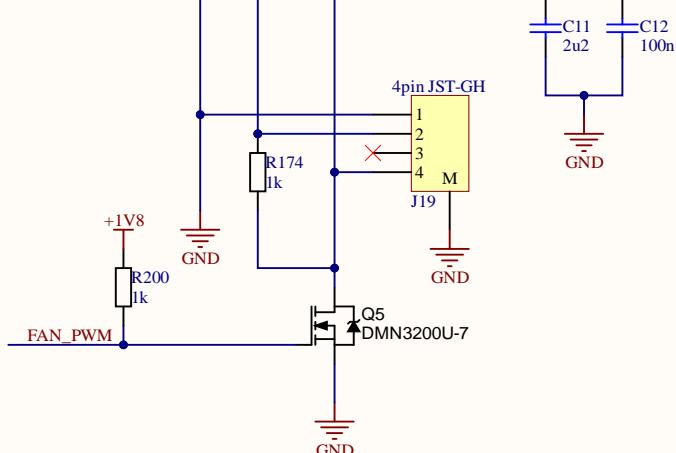

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Title: FAN Headers

Approved: Yes



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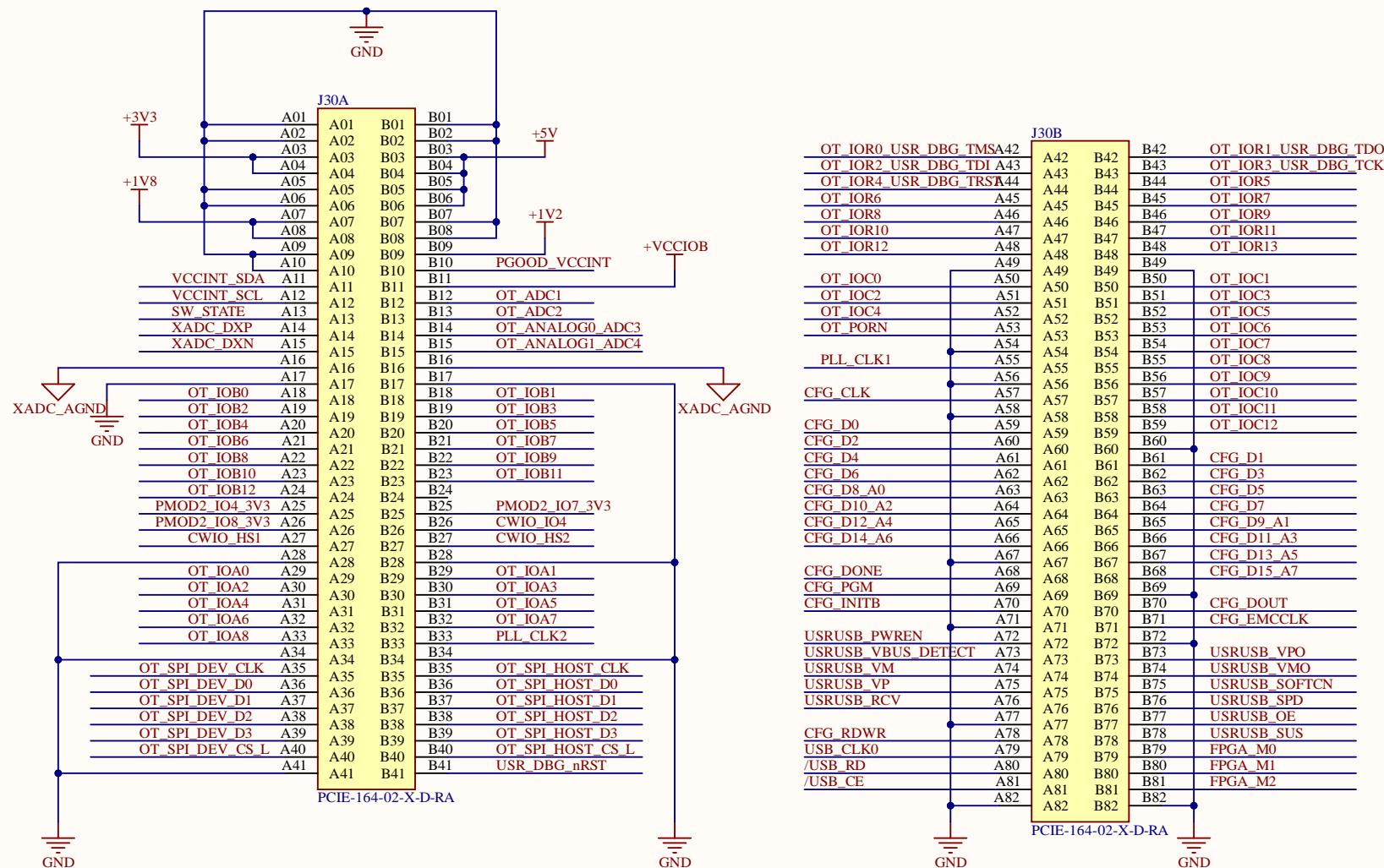
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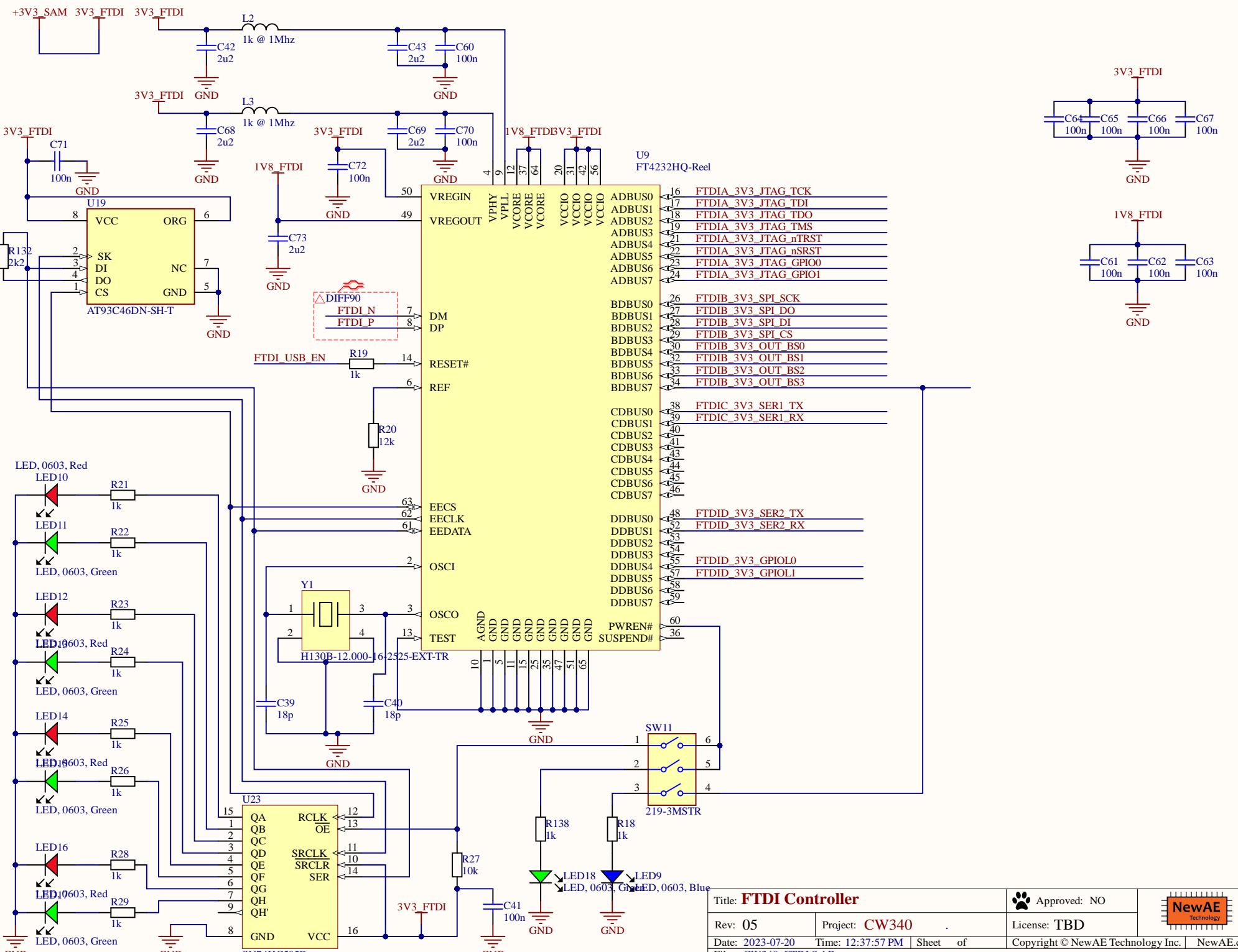
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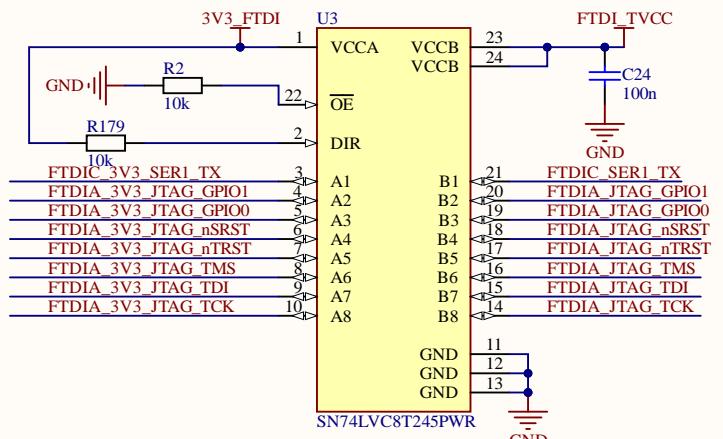
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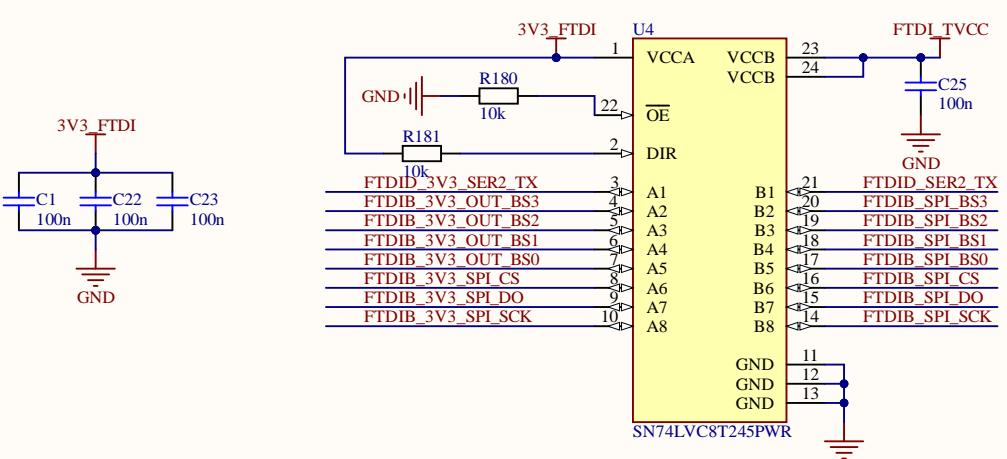
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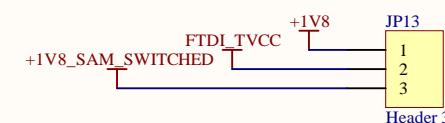
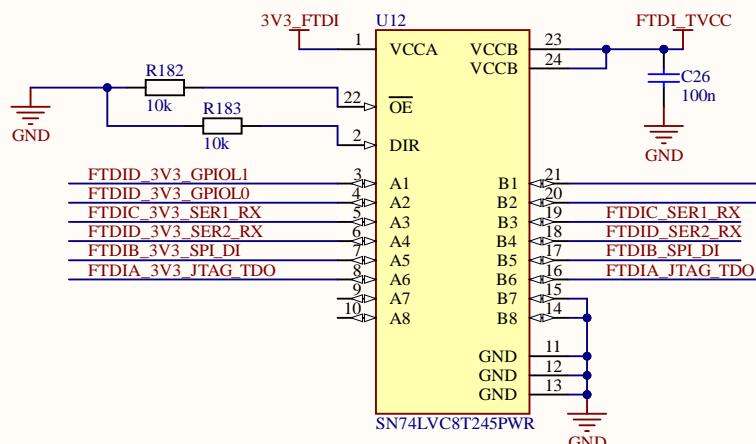
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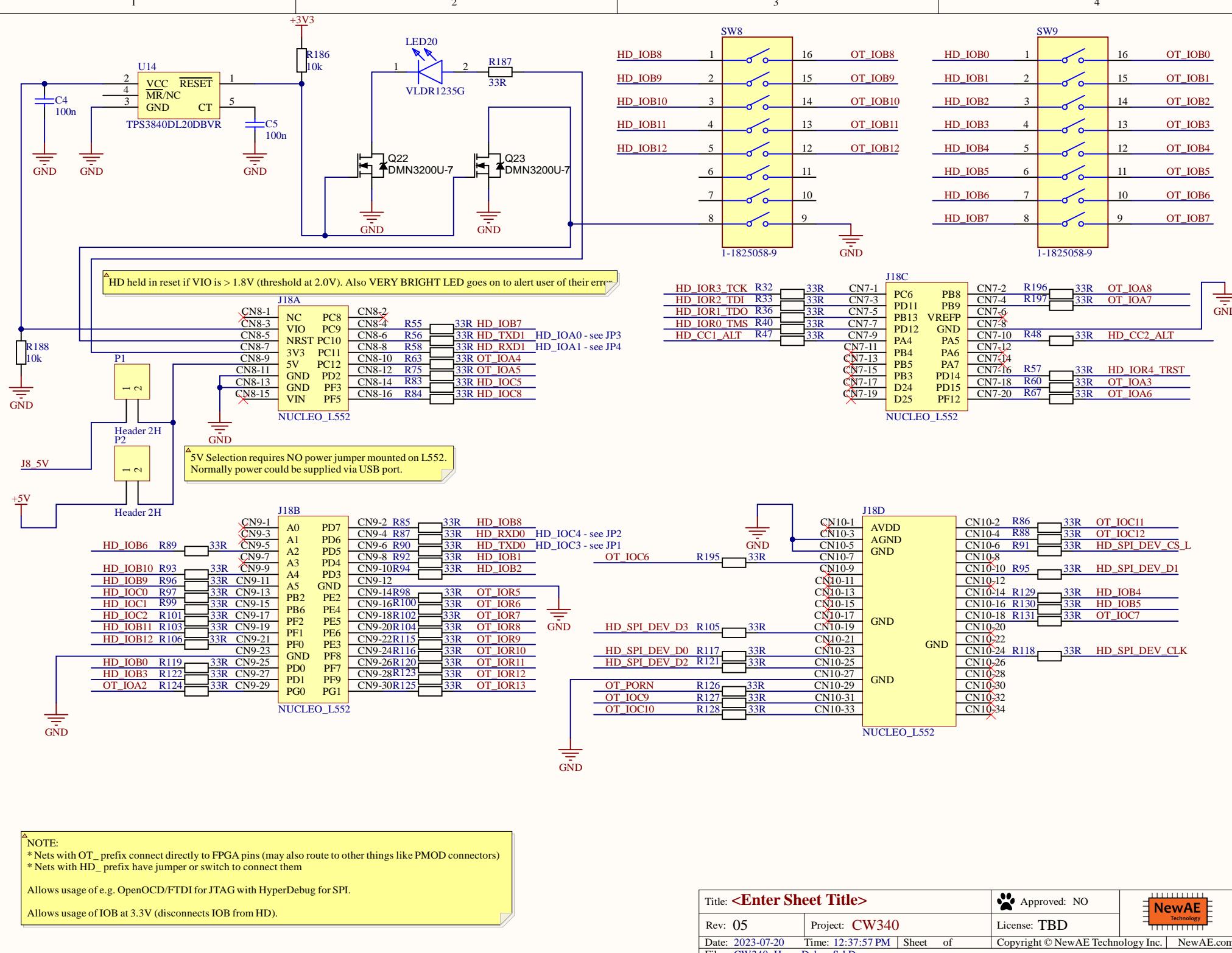
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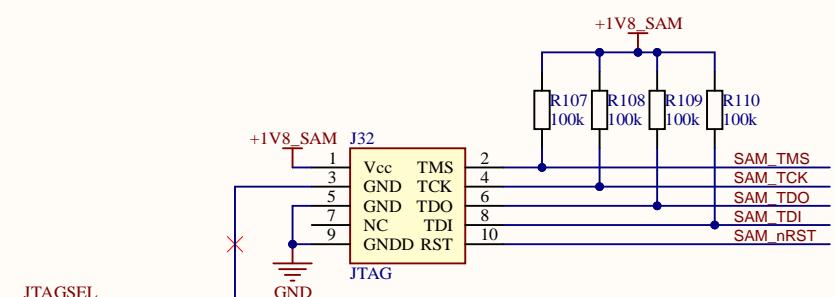
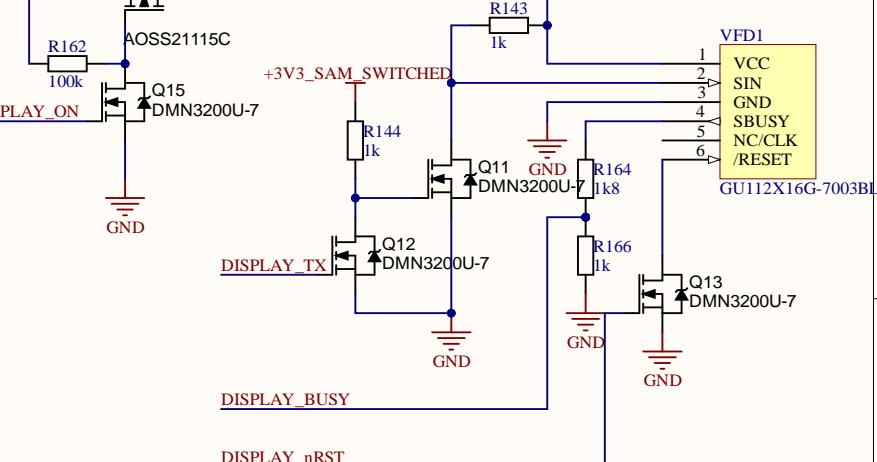
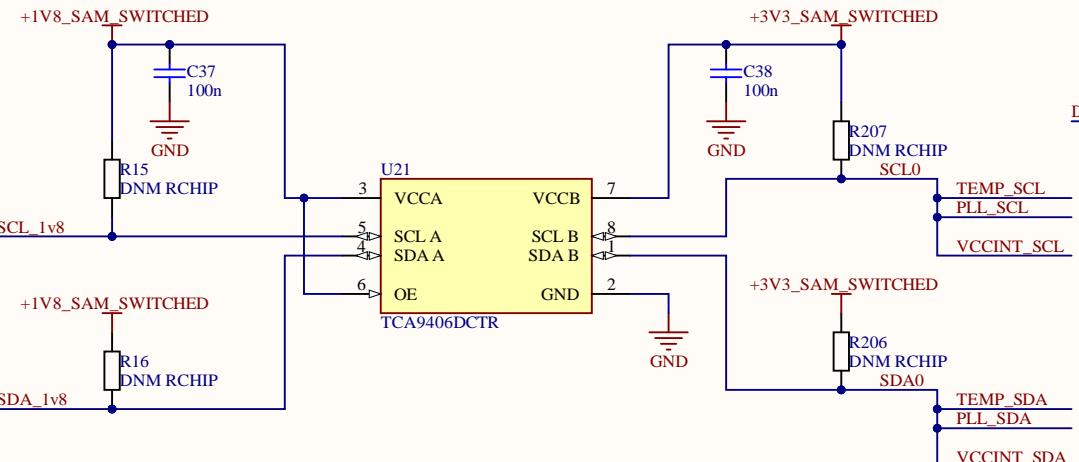
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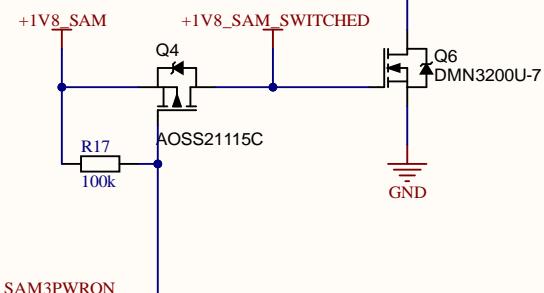
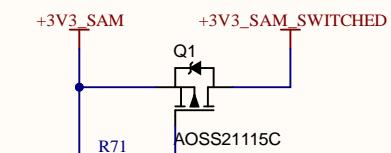
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1 2 3 4



△ If SAM3X goes to sleep, turns off connected devices (PLL chip, etc). Also need to turn off power to pull-ups and similar.



D

Title: MCU Misc Connections			Approved: NO	NewAE Technology
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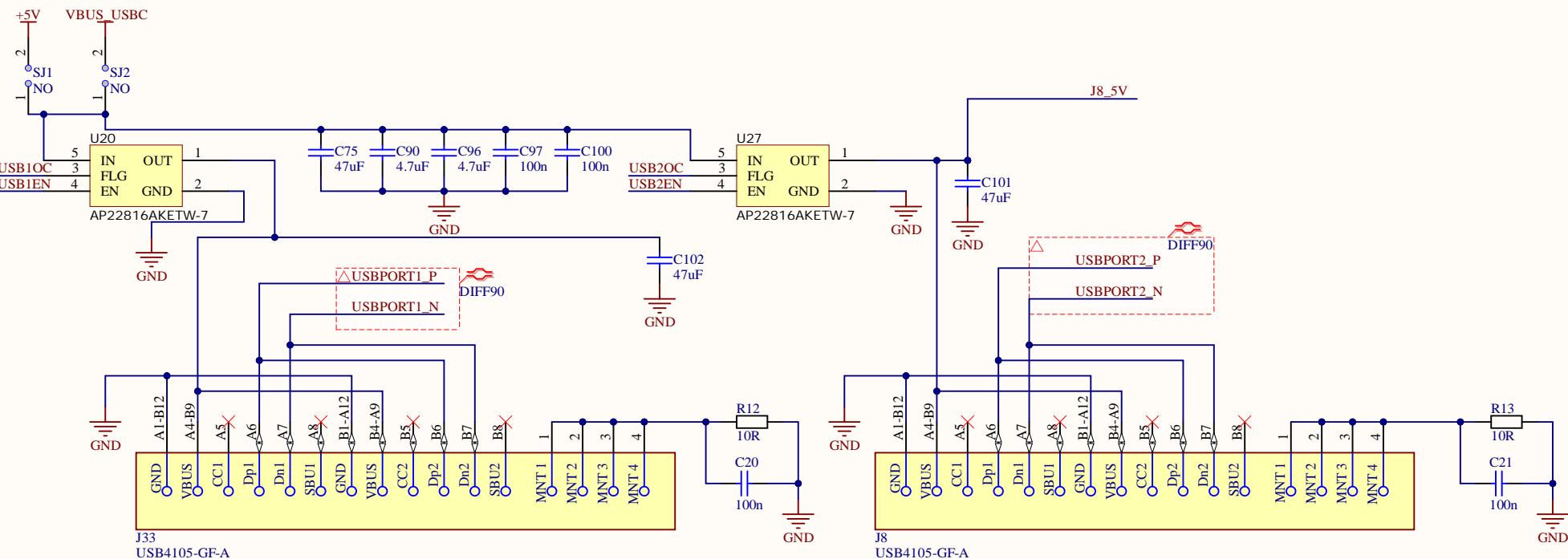
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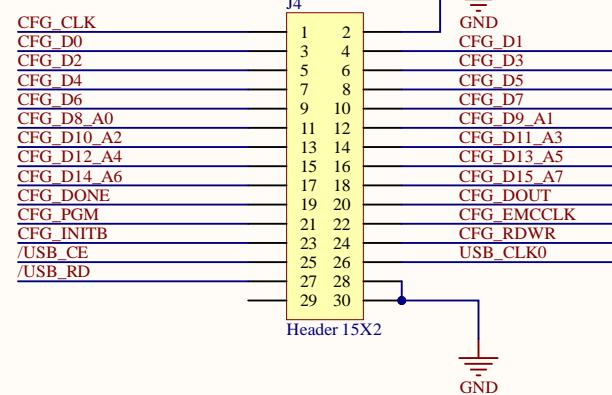
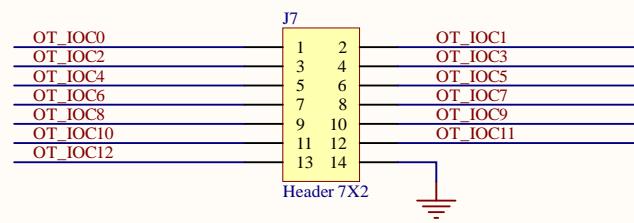
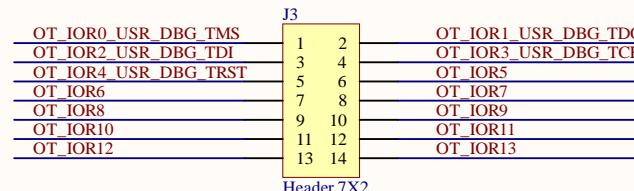
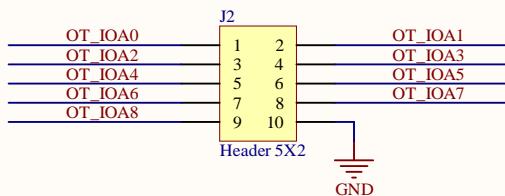
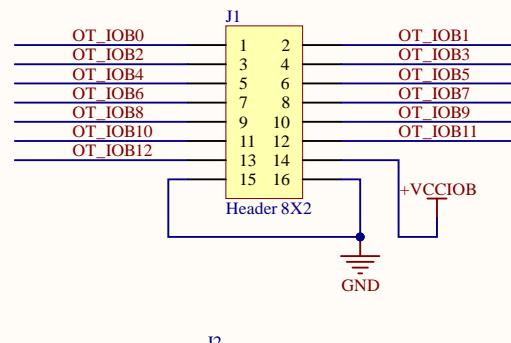
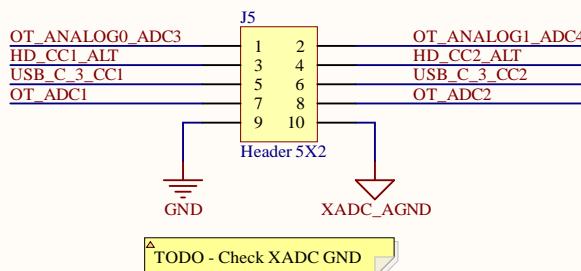
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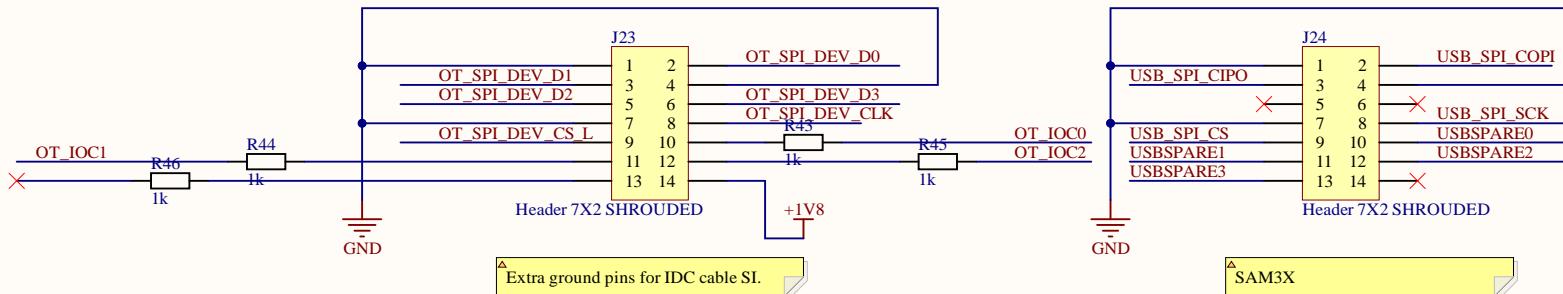


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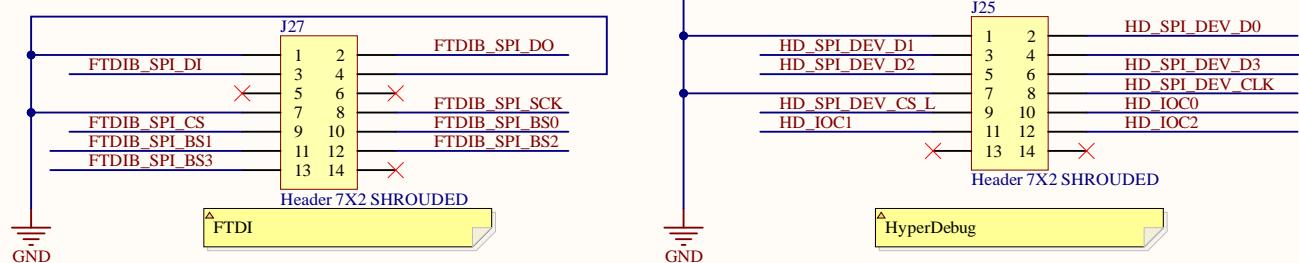
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Title: Serial Selection Jumpers			Approved: NO	
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