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Orderable: LAUNCHXL-F28P55X	Designed for: Public Release	Mod. Date: 5/21/2025
TID #: N/A	Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: C	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: [No Variations]	Sheet: 1 of 8
Drawn By: Stevan Duraskovic	File: MCU133C_Block_Diagram.SchDoc	Size: B
Engineer: Stevan Duraskovic	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	

A

B

C

D

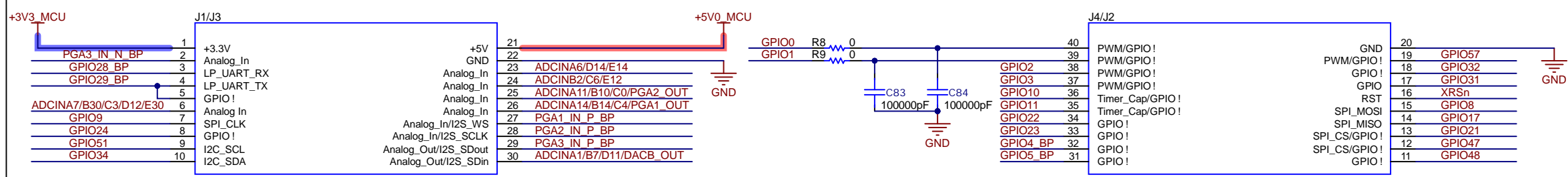
A

B

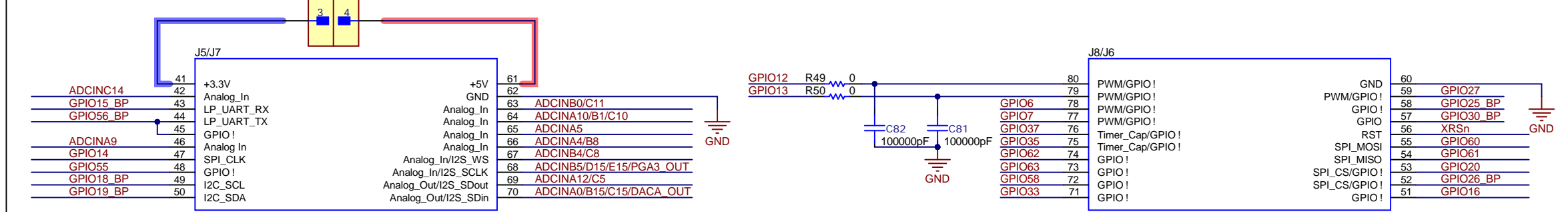
C

D

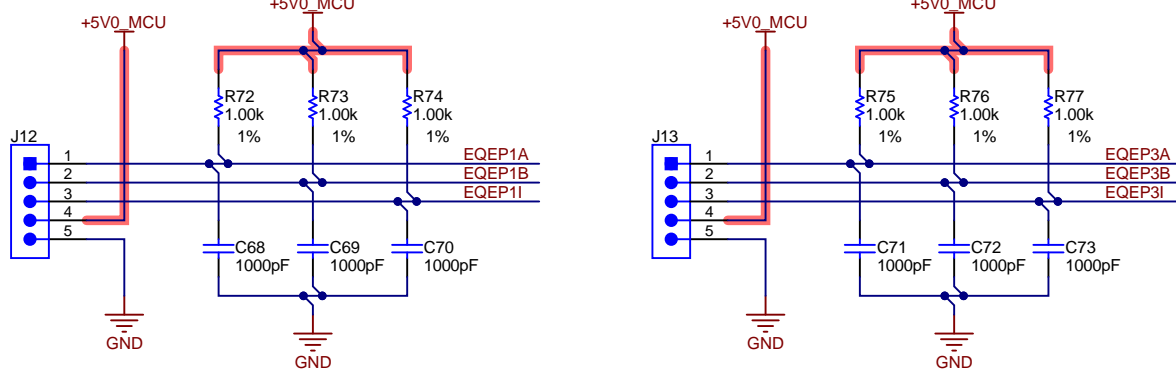
BoosterPack Headers Site 1 (Top)



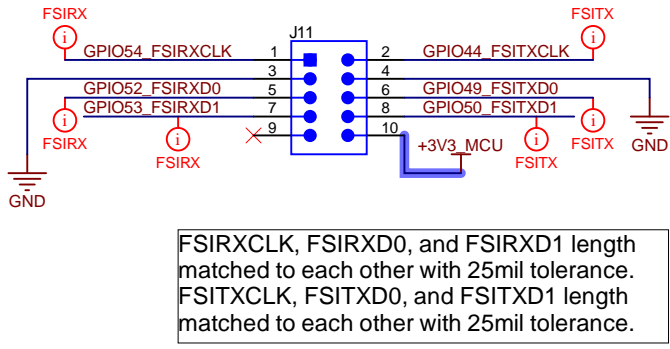
BoosterPack Headers Site 2 (Bottom)



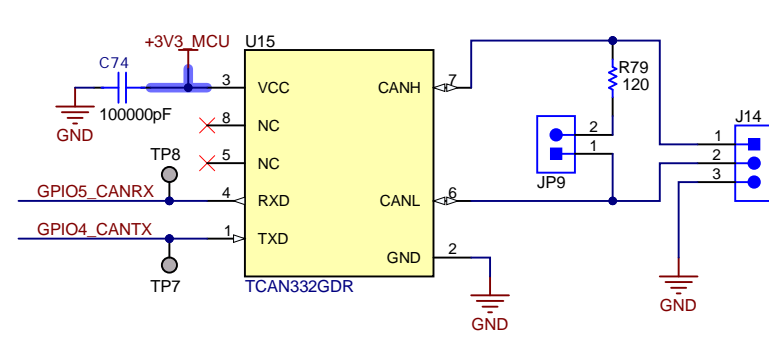
EQEP Connectors



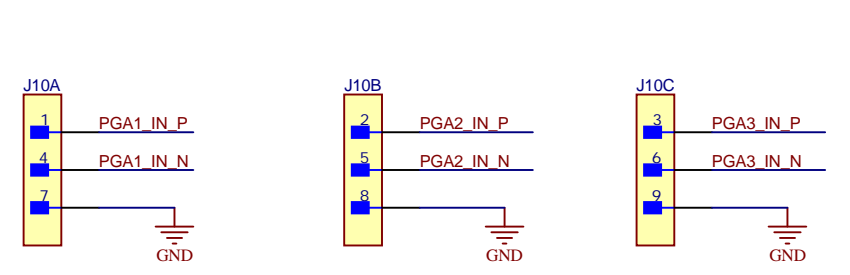
FSI Connector



CAN Transceiver & Connector



PGA Connector

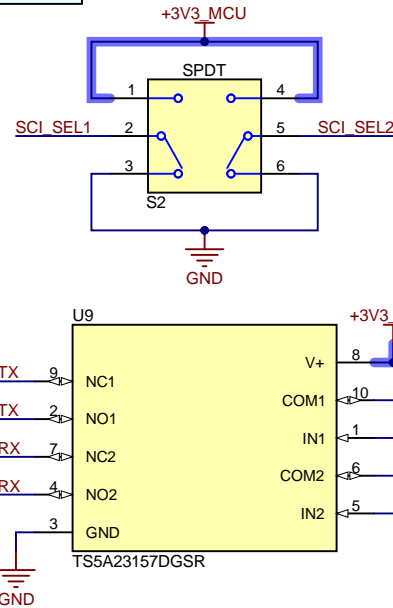
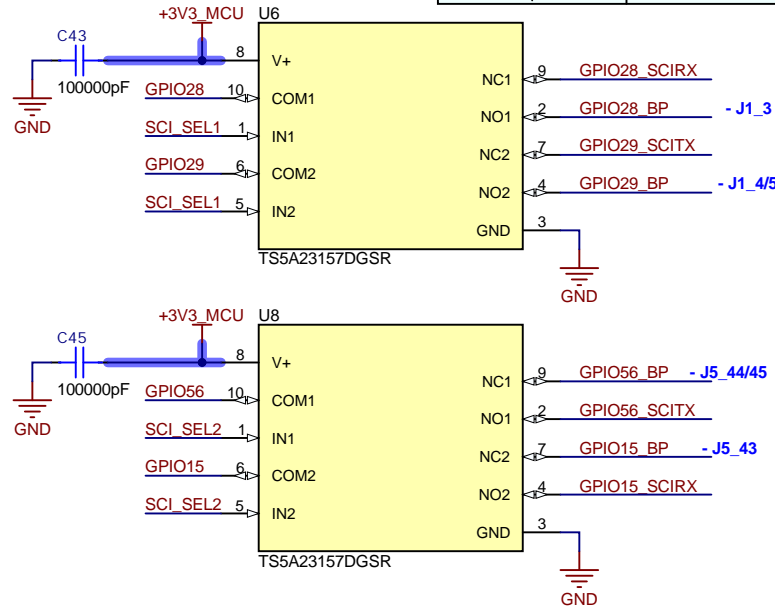


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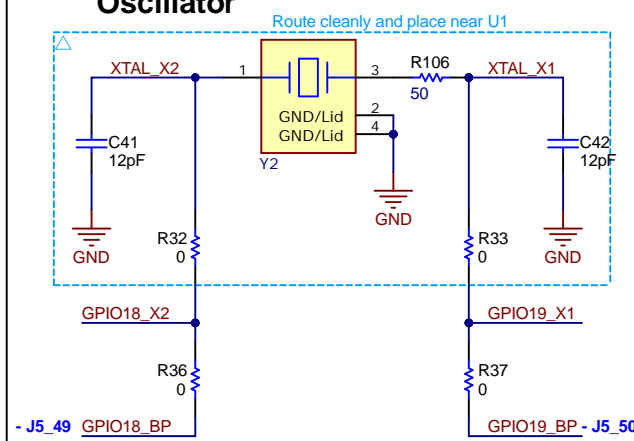
## UART Routing

SCI_SEL1	SCI_SEL2	GPIO28/29 Route	GPIO15/56 Route
0	0	XDS110 COM Port	BP
0	1	XDS110 COM Port	NC
1	0	BP	BP
1	1	BP	XDS110 COM Port

- DEFAULT

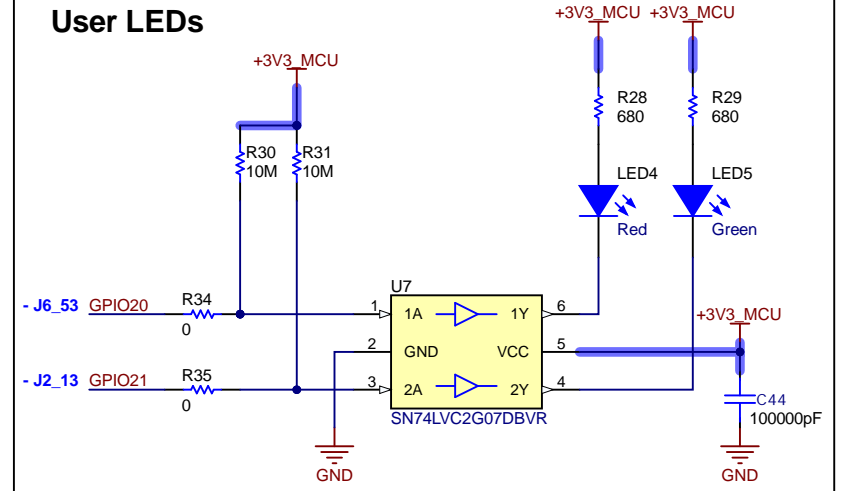


## Oscillator

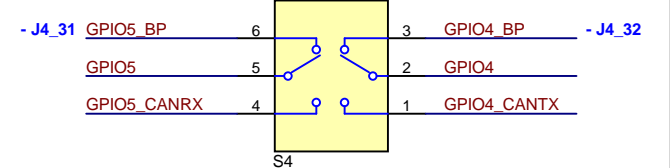


By default:  
 - Crystal Y2 is connected between GPIO18\_X2 and GPIO19\_X1.  
 - GPIO18\_BP AND GPIO19\_BP are connected to the BoosterPack headers.  
 If GPIO18 and GPIO 19 are needed at the Boosterpac k Headers:  
 - Remove R32 and R33, populate R36 and R37 with 0 ohm resistors  
 - The F28P55x device's internal oscillator will need to be used

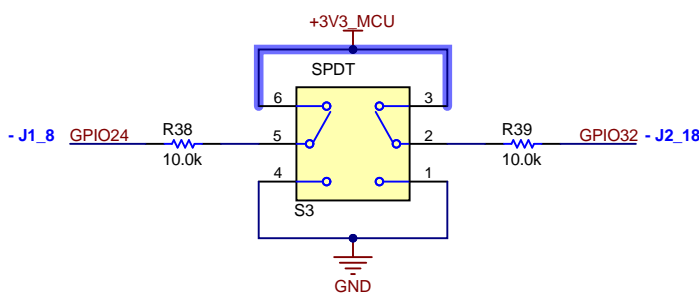
## User LEDs



## CAN Routing



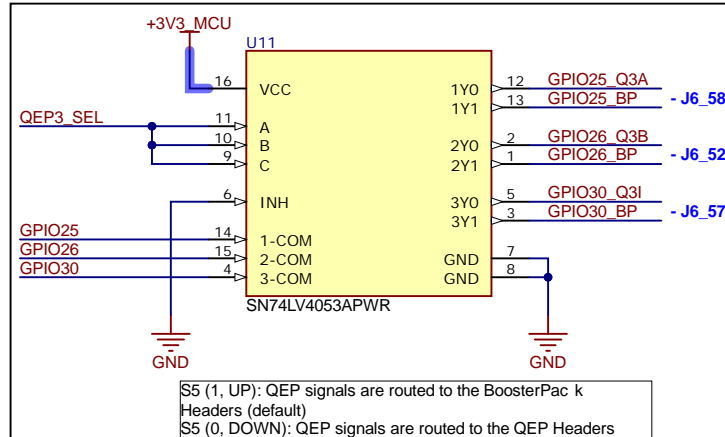
## Boot Mode Select



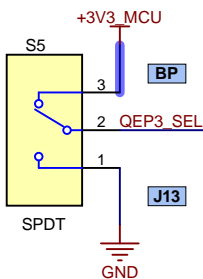
## Selected Boot Mode Chart

Mode #	GPIO24	GPIO32	Boot Mode
00	0	0	Boot from Parallel GPIO
01	0	1	Boot from SCI / Wait Mode
02	1	0	Boot from CAN
03	1	1	Boot from Flash

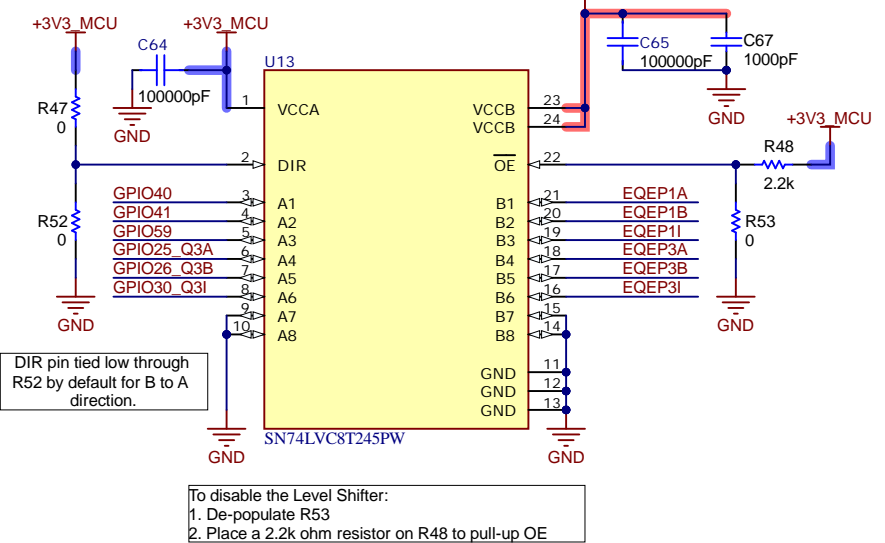
## EQEP Routing



S5 (1, UP): QEP signals are routed to the BoosterPac k Headers (default)  
 S5 (0, DOWN): QEP signals are routed to the QEP Headers

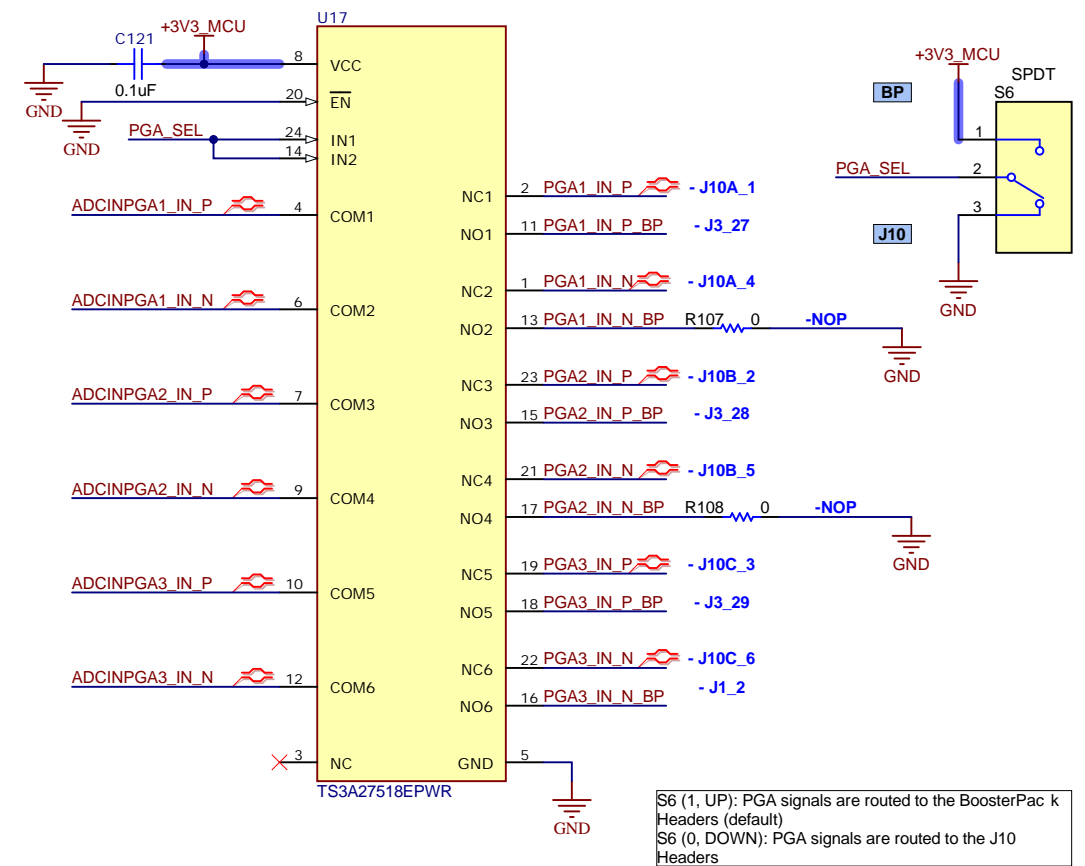


## EQEP Level Shifter



To disable the Level Shifter:  
 1. De-populate R53  
 2. Place a 2.2k ohm resistor on R48 to pull-up OE

## PGA Routing

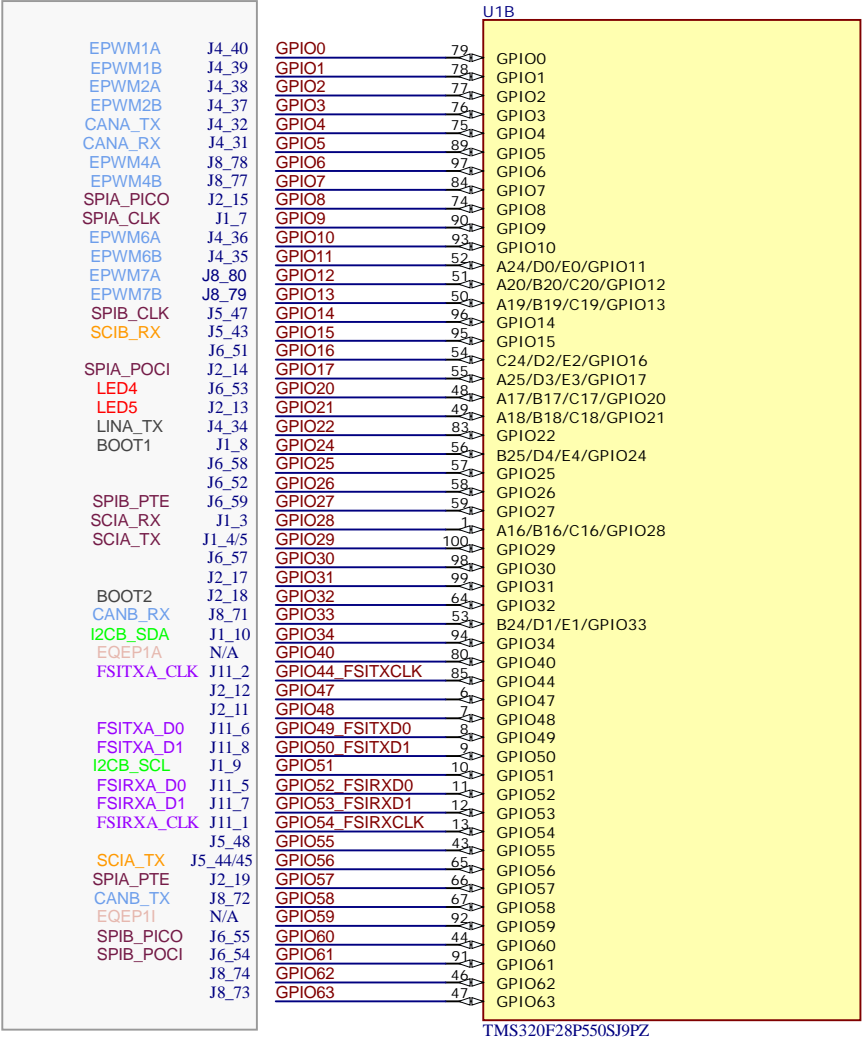
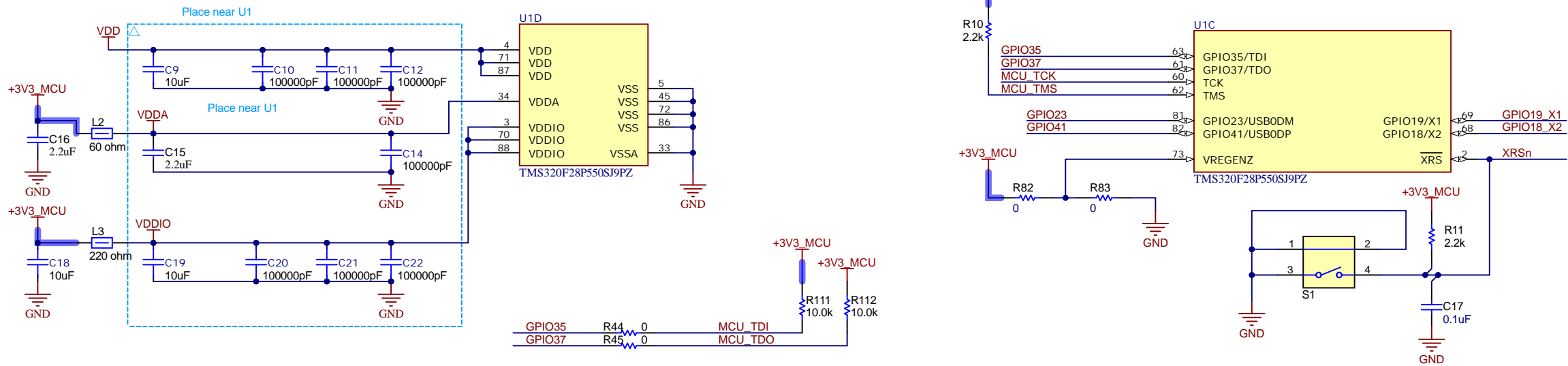


S6 (1, UP): PGA signals are routed to the BoosterPac k Headers (default)  
 S6 (0, DOWN): PGA signals are routed to the J10 Headers

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Orderable: LAUNCHXL-F28P55X	Designed for: Public Release	Mod. Date: 3/1/2024
TID #: N/A	Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: C	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: [No Variations]	Sheet: 3 of 8
Drawn By: Stevan Duraskovic	File: MCU133C_AltRouting_Misc.SchDoc	Size: B
Engineer: Stevan Duraskovic	Contact: http://www.ti.com/support	

F28P55x Device



A

B

C

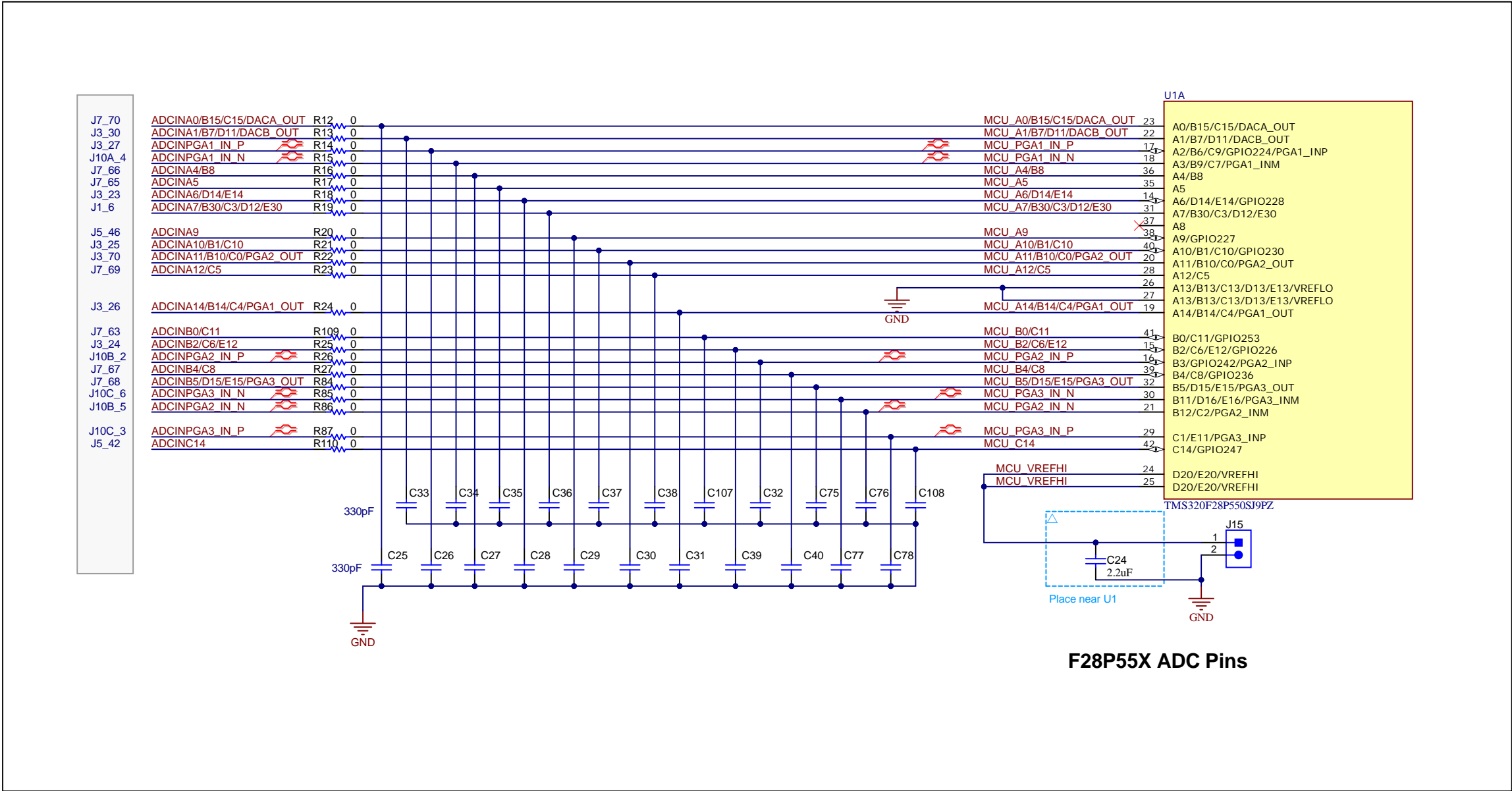
D

A

B

C

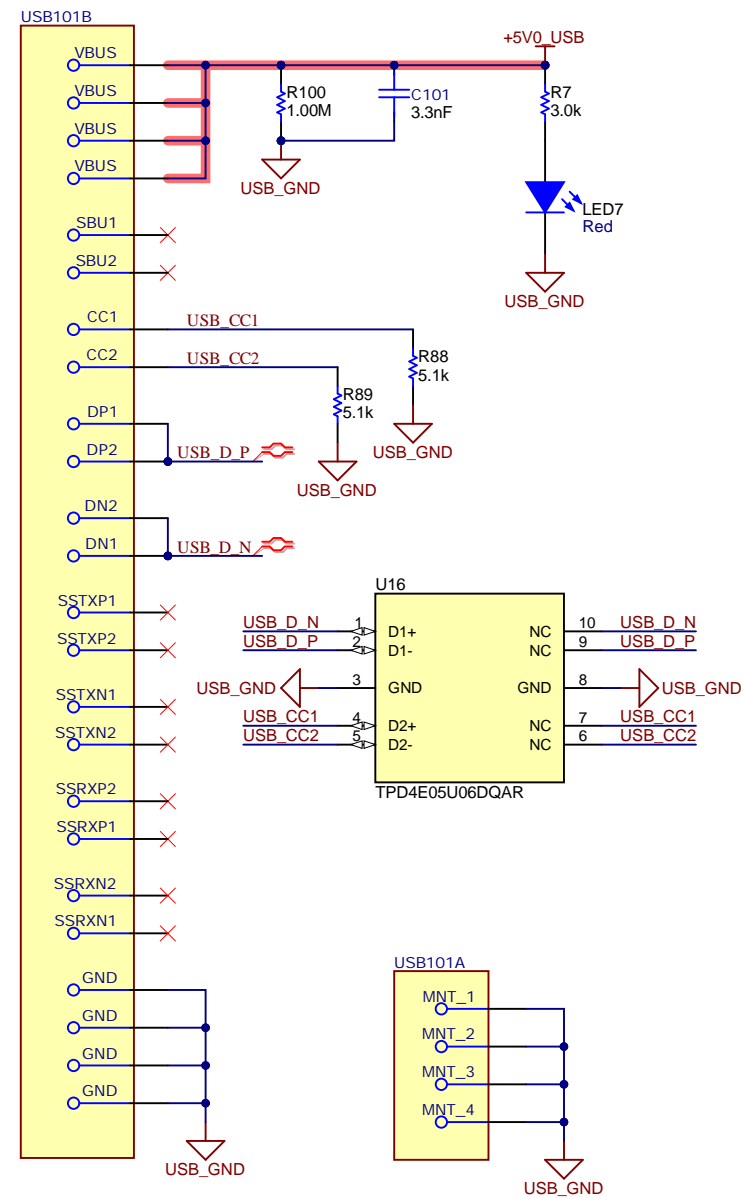
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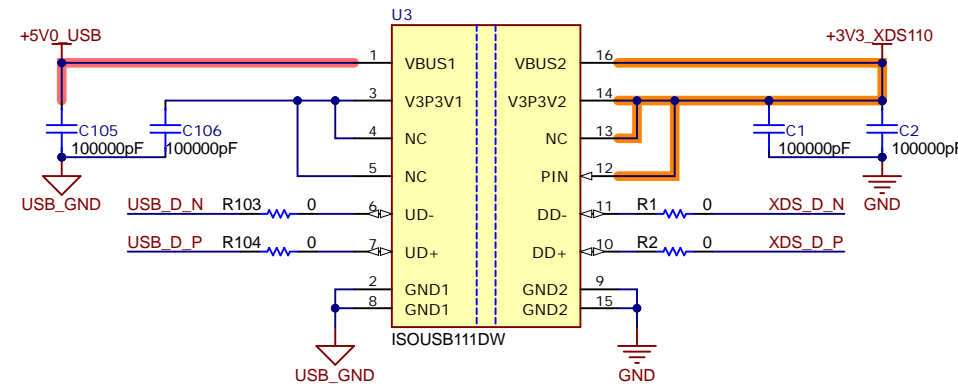
F28P55X ADC Pins

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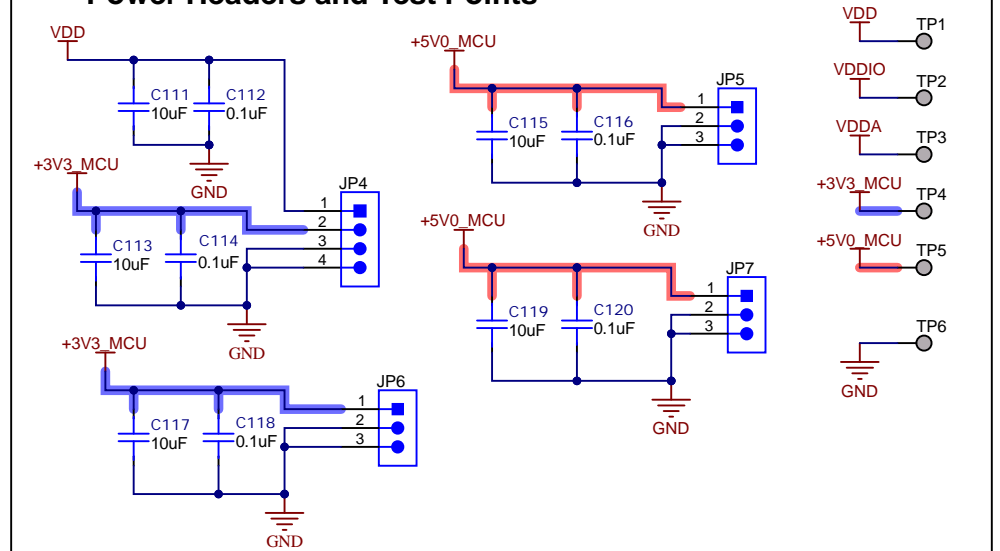
## USB-C Connector



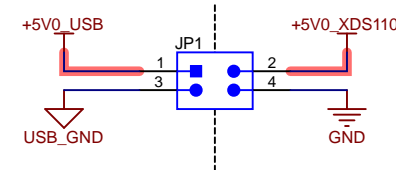
## USB Isolation



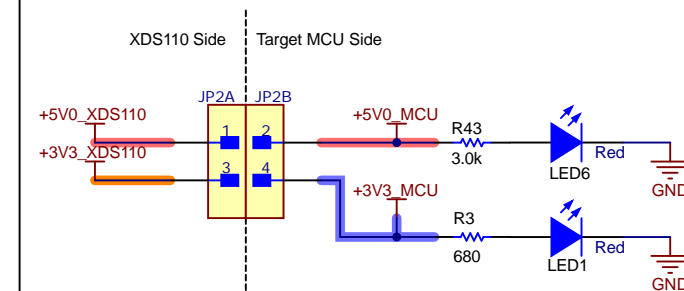
## Power Headers and Test Points



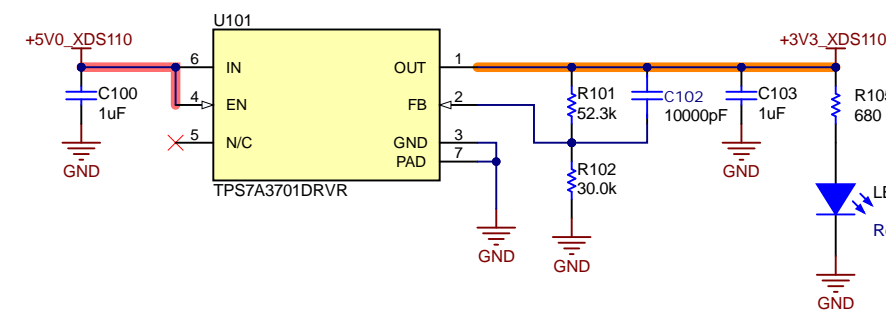
## PWR & GND Isolation Boundary



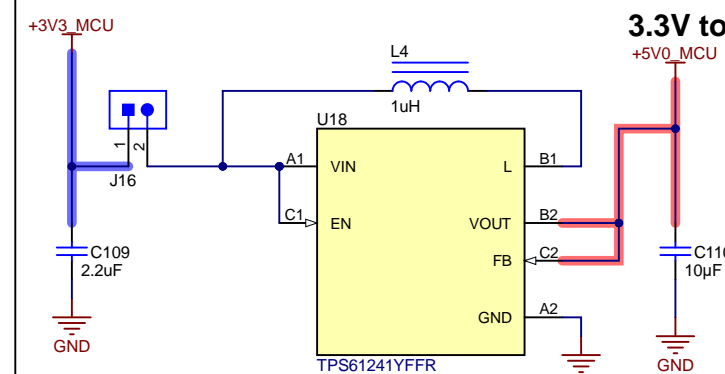
## 5V & 3.3V Isolation Boundary



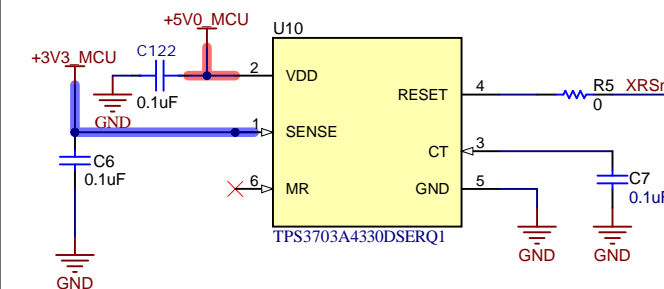
## 5V to 3.3V



### 3.3V to 5V BOOST

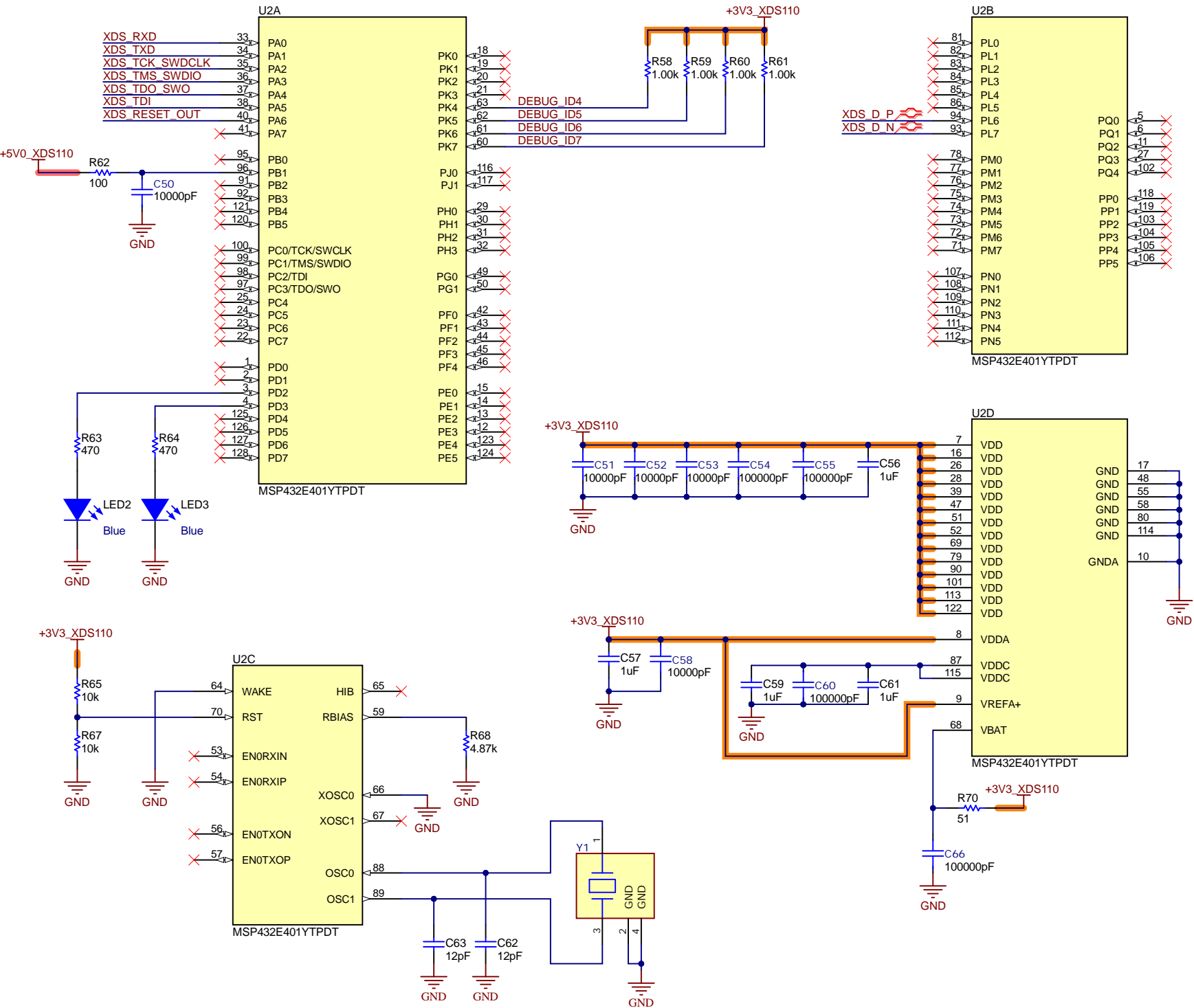


### System Supervisory Circuit

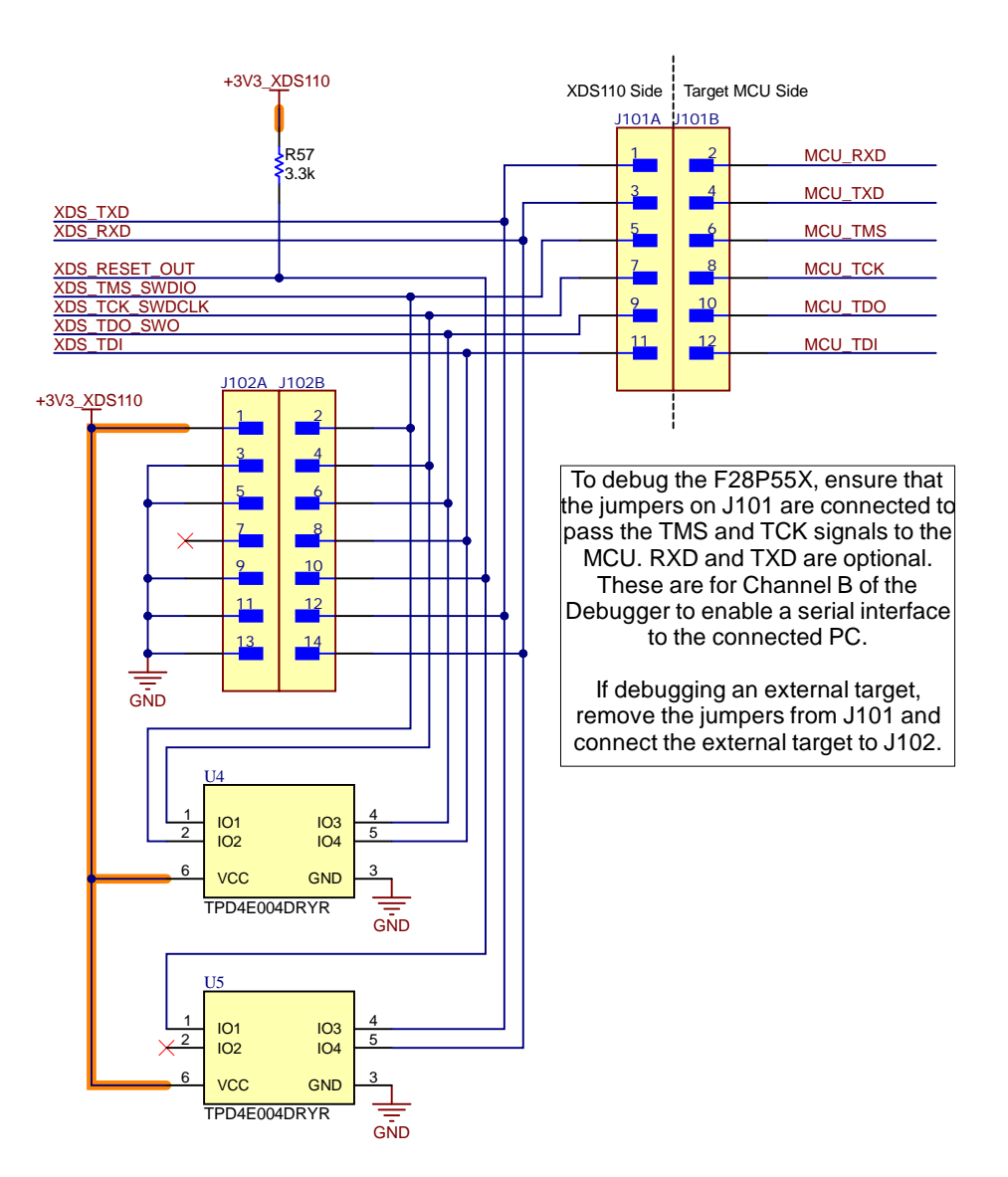





XDS110 Device



XDS110 Target Interface



The diagram shows six FID sensors arranged in a 2x3 grid. Each sensor is represented by a yellow circle with a black outline, and a label below it. The labels are FID1, FID2, FID3 in the top row, and FID4, FID5, FID6 in the bottom row.



MH1 MH2

MH3 MH4

PCB Number: MCU133  
PCB Rev: C

Logo1  
PCB  
LOGO  
Texas Instruments



Logo3  
PCB  
LOGO  
FCC disclaimer

Logo4  
PCB  
LOGO  
WEEE logo

Logo5  
PCB  
LOGO  
Texas Instruments

ZZ1

Assembly Note

These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ2

### Assembly Note

These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ3

### Assembly Note

These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

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Orderable: <a href="#">LAUNCHXL-F28P55X</a>	Designed for: <a href="#">Public Release</a>	Mod. Date: 2/3/2024	
TID #: <a href="#">N/A</a>	Project Title: <a href="#">LAUNCHXL-F28P55X</a>		
Number: <a href="#">MCU133</a>	Rev: <a href="#">C</a>	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: <a href="#">[No Variations]</a>	Sheet: <a href="#">8</a> of <a href="#">8</a>	
Drawn By: <a href="#">Stevan Duraskovic</a>	File: <a href="#">MCU133C_Hardware_SchDoc</a>	Size: B	
Engineer: <a href="#">Stevan Duraskovic</a>	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>		<a href="http://www.ti.com">http://www.ti.com</a> © Texas Instruments 2024