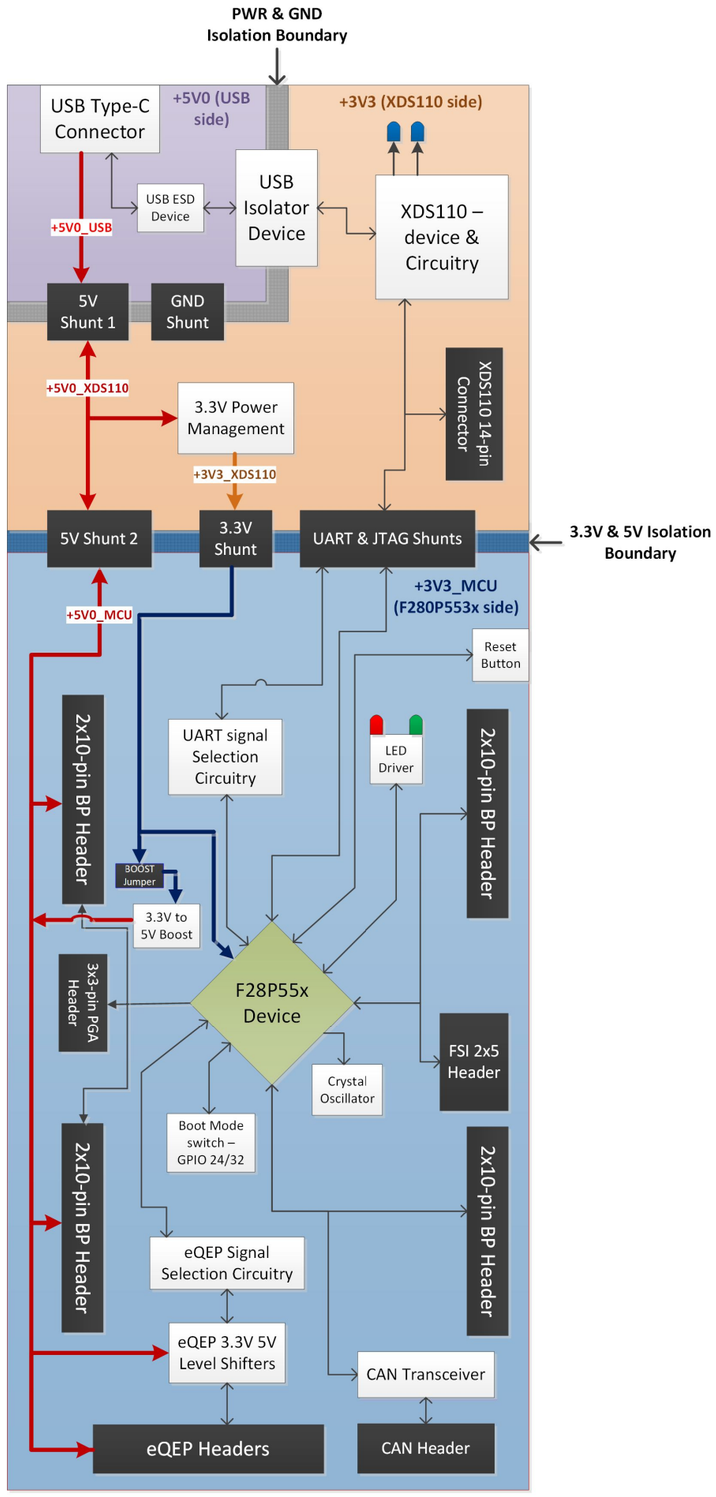

Orderable: LAUNCHXL-F28P55X		Designed for: Public Release	Mod. Date: 2/20/2024
TID #: N/A		Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: A	Sheet Title:	
SVN Rev: Unknown revision		Assembly Variant: 001	Sheet: 1 of 8
Drawn By: Stevan Duraskovic		File: MCU133A_Block_Diagram.SchDoc	Size: B
Engineer: Stevan Duraskovic		Contact: http://www.ti.com/support	

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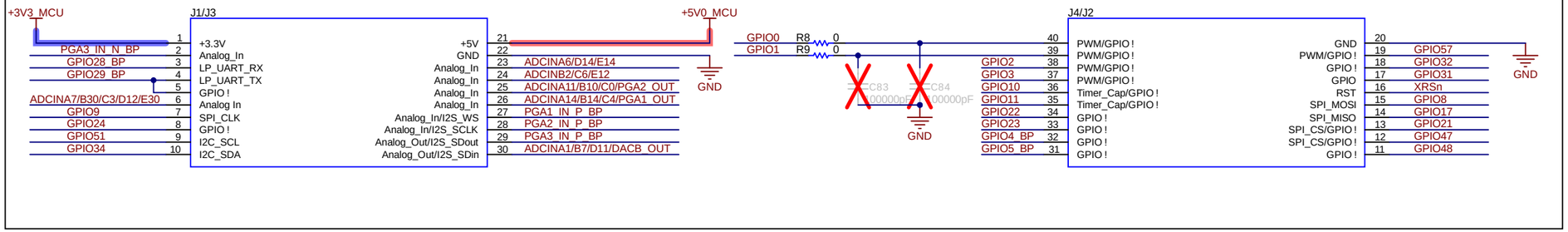
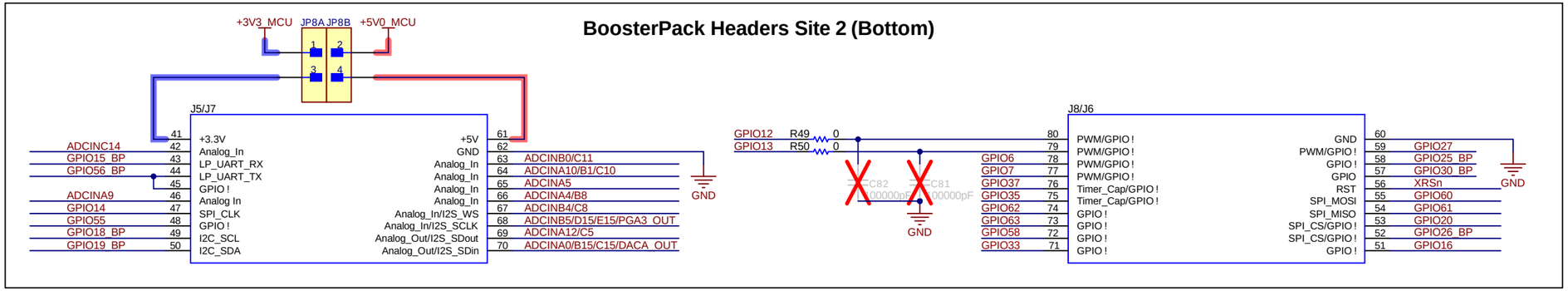
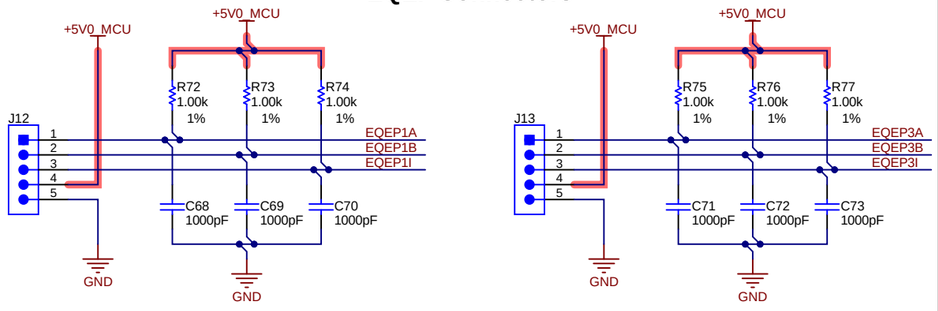
BoosterPack Headers Site 1 (Top)



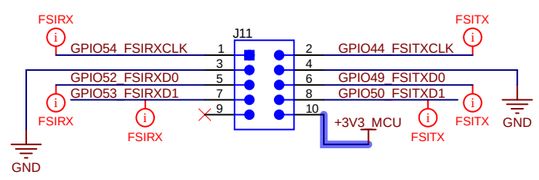
BoosterPack Headers Site 2 (Bottom)



EQEP Connectors

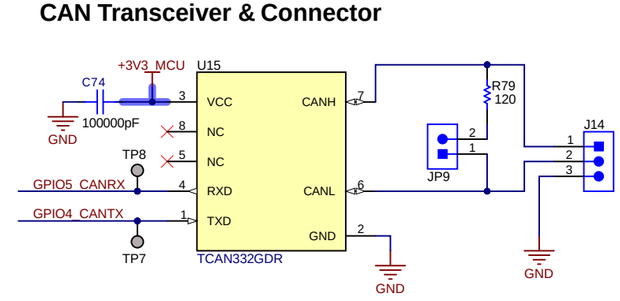


FSI Connector

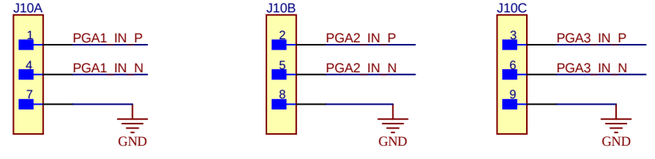


FSIRXCLK, FSIRXD0, and FSIRXD1 length matched to each other with 25mil tolerance.
FSITXCLK, FSITXD0, and FSITXD1 length matched to each other with 25mil tolerance.

CAN Transceiver & Connector



PGA Connector

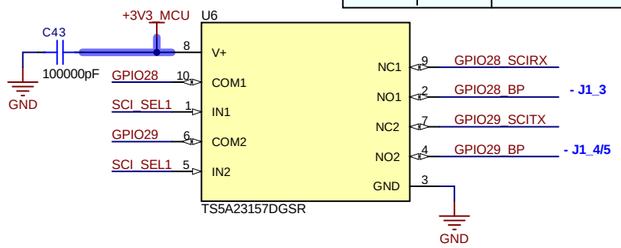


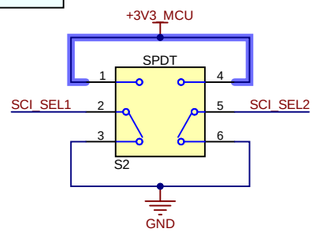
Orderable: LAUNCHXL-F28P55X		Designed for: Public Release	Mod. Date: 2/9/2024
TID #: N/A		Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: A	Sheet Title:	
SVN Rev: Unknown revision		Assembly Variant: 001	Sheet: 2 of 8
Drawn By: Stevan Duraskovic		File: MCU133A_Connectors.SchDoc	Size: B
Engineer: Stevan Duraskovic		Contact: http://www.ti.com/support	

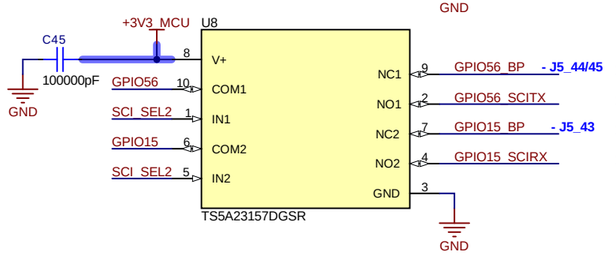
UART Routing

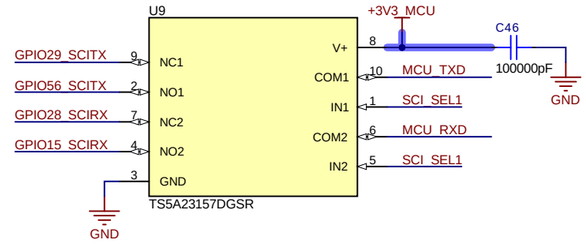
SCI_SEL1	SCI_SEL2	GPIO28/29 Route	GPIO15/56 Route
0	0	XDS110 COM Port	BP
0	1	XDS110 COM Port	NC
1	0	BP	BP
1	1	BP	XDS110 COM Port

- DEFAULT

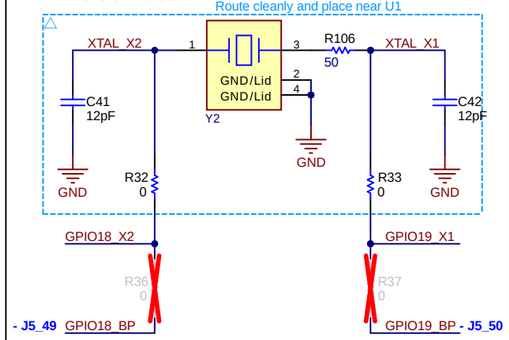








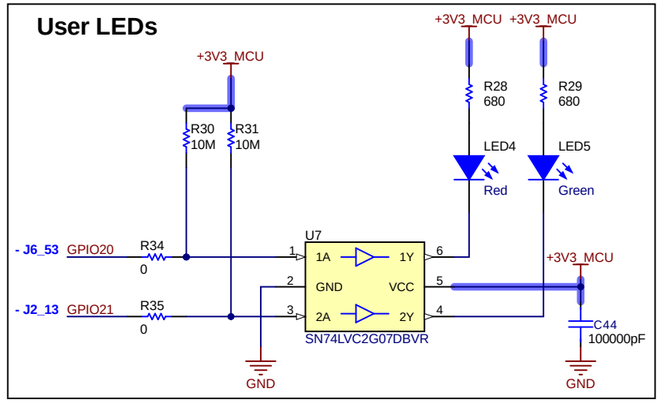
Oscillator



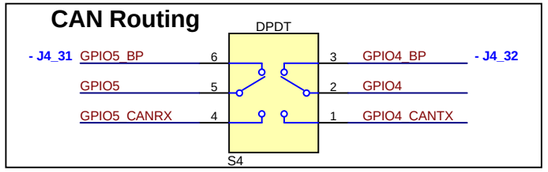
By default:
- Crystal Y2 is connected between GPIO18_X2 and GPIO19_X1.
- GPIO18_BP AND GPIO19_BP are connected to the BoosterPack headers.

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

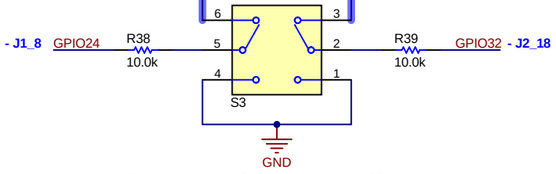
User LEDs



CAN Routing



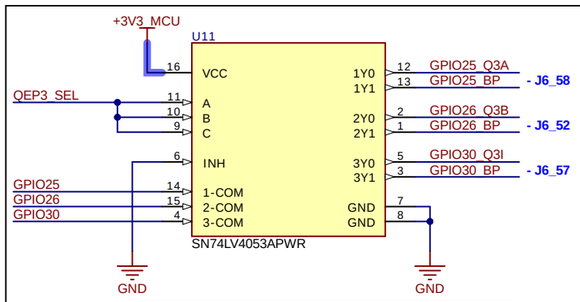
Boot Mode Select

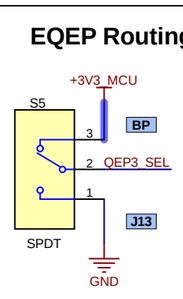


Selected Boot Mode Chart

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

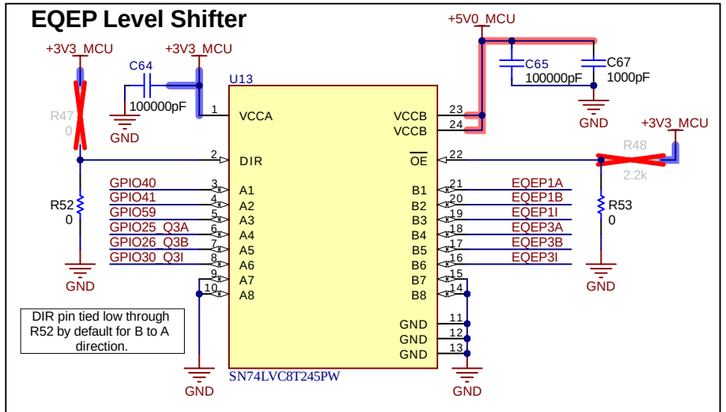
EQEP Routing





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

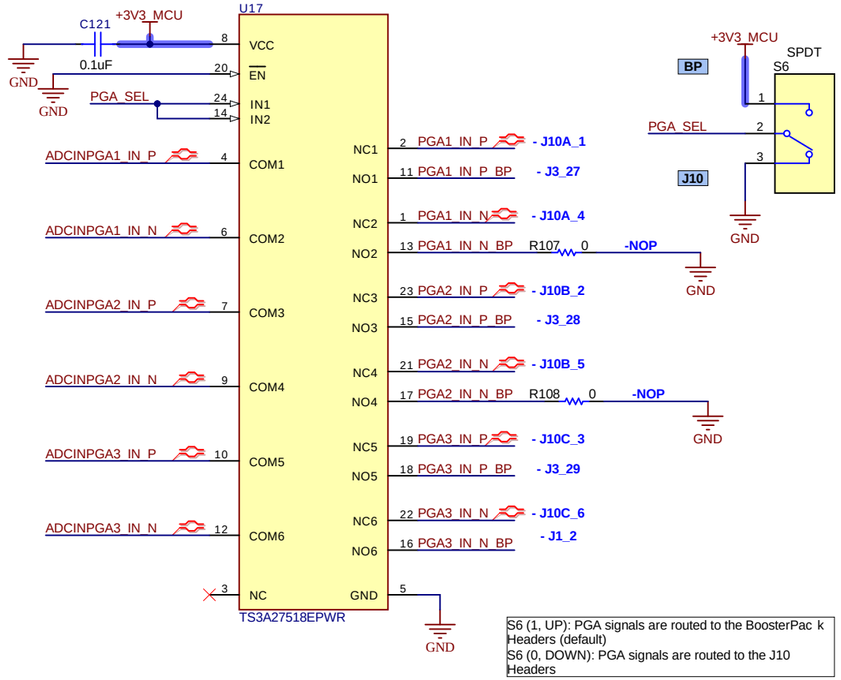
EQEP Level Shifter



DIR pin tied low through R52 by default for B to A direction.

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

Orderable: LAUNCHXL-F28P55X		Designed for: Public Release	Mod. Date: 3/1/2024
TID #: N/A		Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: A	Sheet Title:	
SVN Rev: Unknown revision		Assembly Variant: 001	Sheet: 3 of 8
Drawn By: Stevan Duraskovic		File: MCU133A_AltRouting_Misc.SchDoc	Size: B
Engineer: Stevan Duraskovic		Contact: http://www.ti.com/support	

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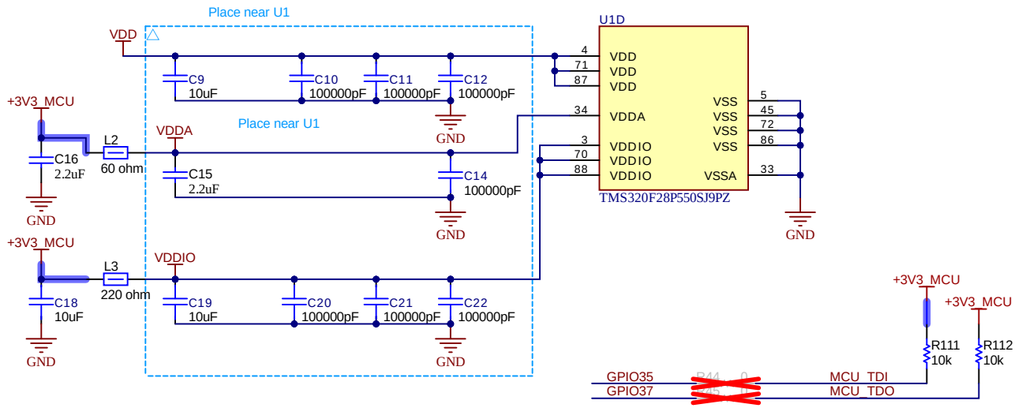
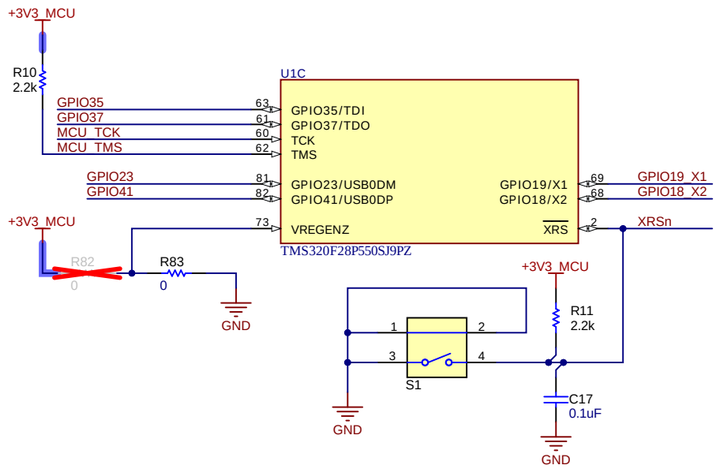
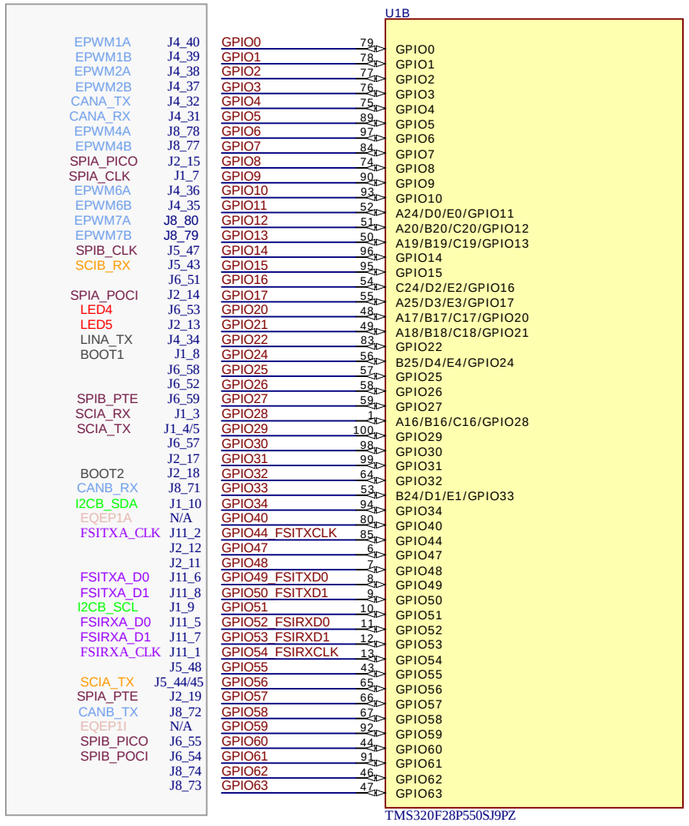
F28P55x Device







Orderable: LAUNCHXL-F28P55X		Designed for: Public Release	Mod. Date: 2/20/2024
TID #: N/A		Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: A	Sheet Title:	
SVN Rev: Unknown revision		Assembly Variant: 001	Sheet: 4 of 8
Drawn By: Stevan Duraskovic		File: MCU133A_F28P55x_Device.SchDoc	Size: B
Engineer: Stevan Duraskovic		Contact: http://www.ti.com/support	

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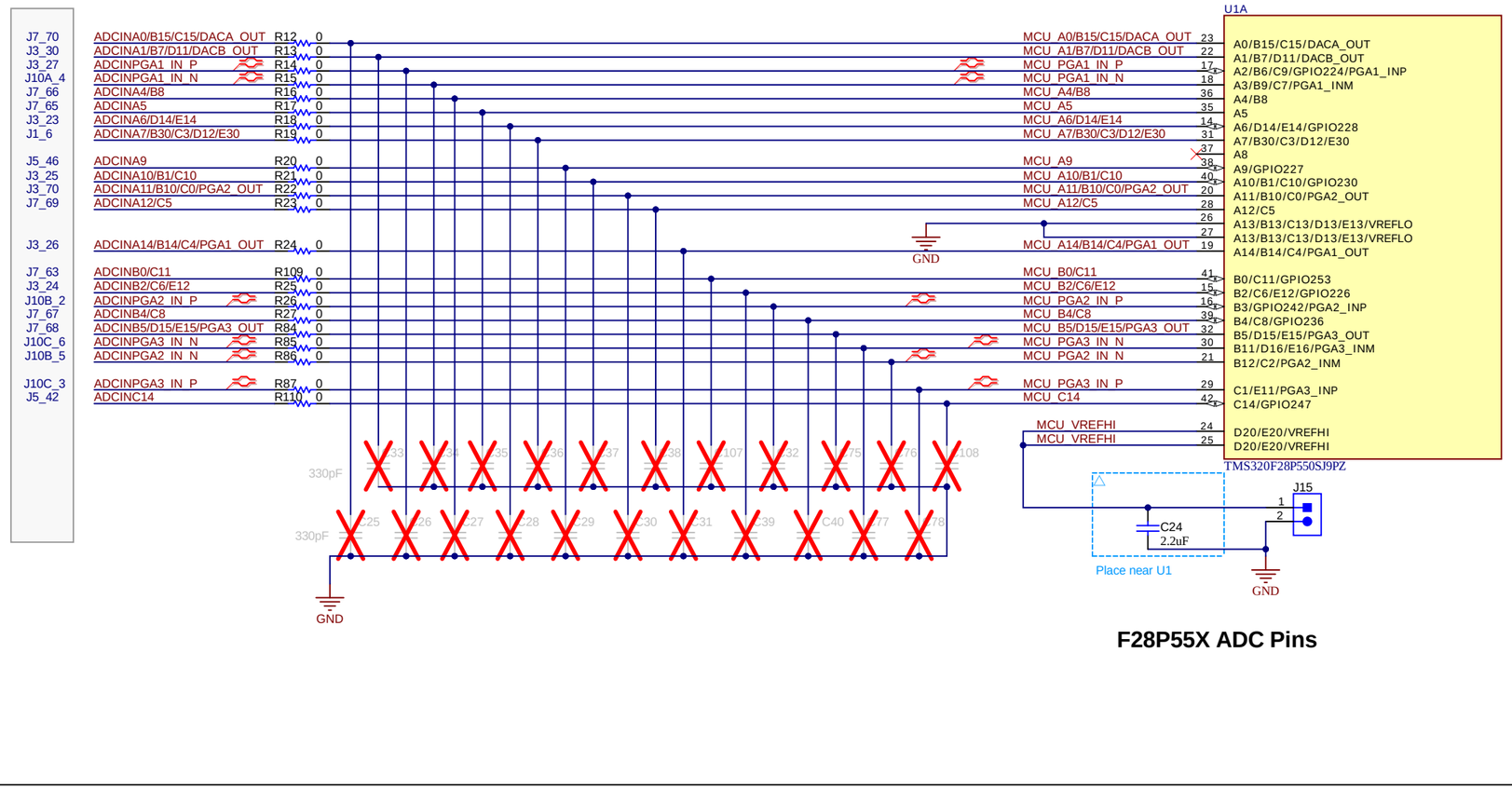

Orderable: LAUNCHXL-F28P55X		Designed for: Public Release	Mod. Date: 2/15/2024
TID #: N/A		Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: A	Sheet Title:	
SVN Rev: Unknown revision		Assembly Variant: 001	Sheet: 5 of 8
Drawn By: Stevan Duraskovic		File: MCU133A_ADC.SchDoc	Size: B
Engineer: Stevan Duraskovic		Contact: http://www.ti.com/support	

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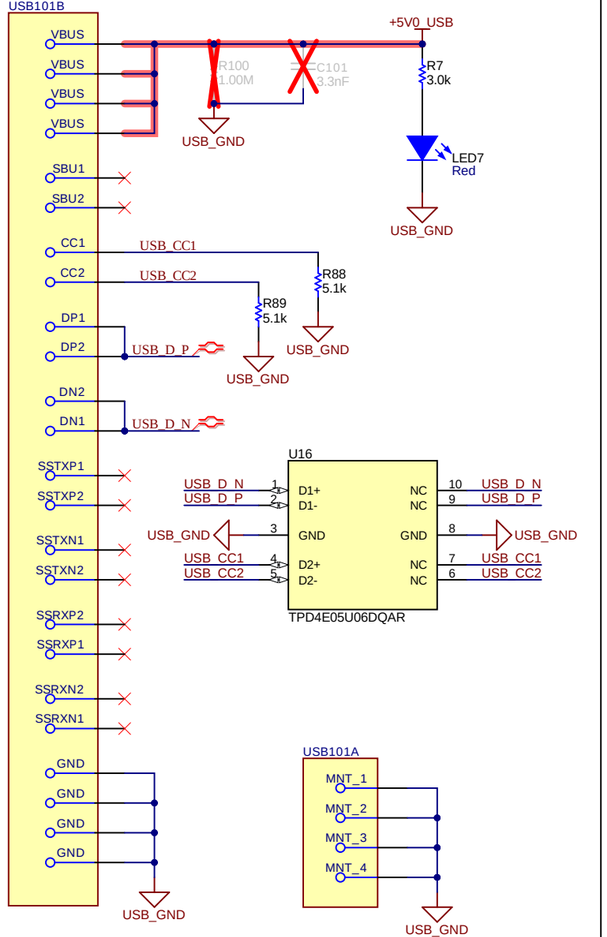
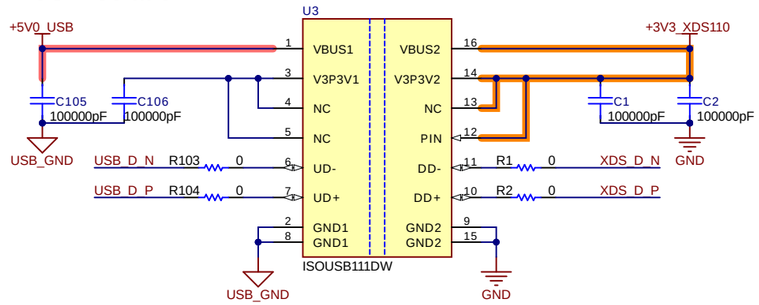
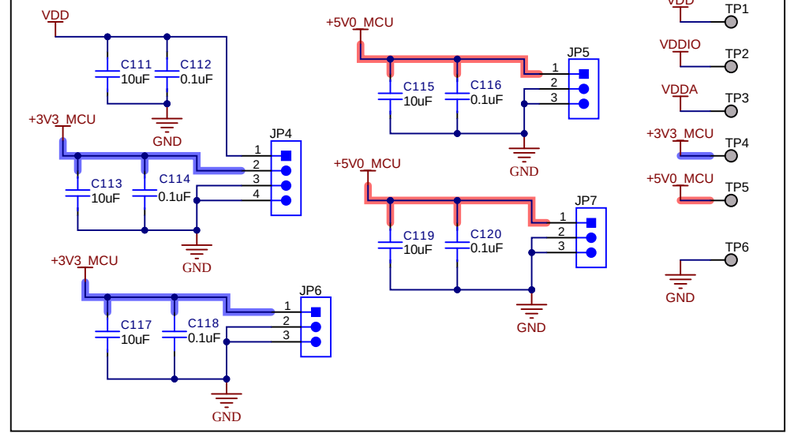
USB-C Connector



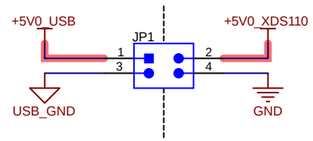
USB Isolation



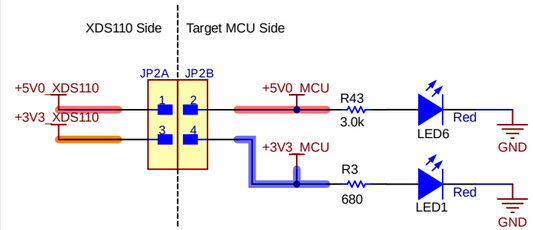
Power Headers and Test Points



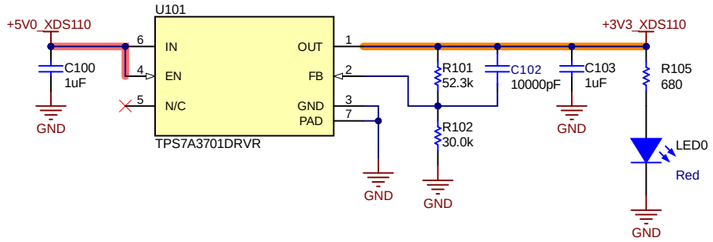
PWR & GND Isolation Boundary



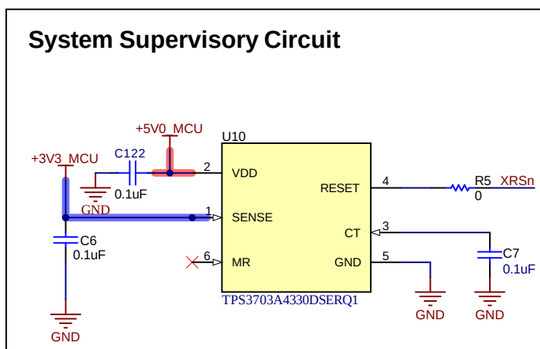
5V & 3.3V Isolation Boundary



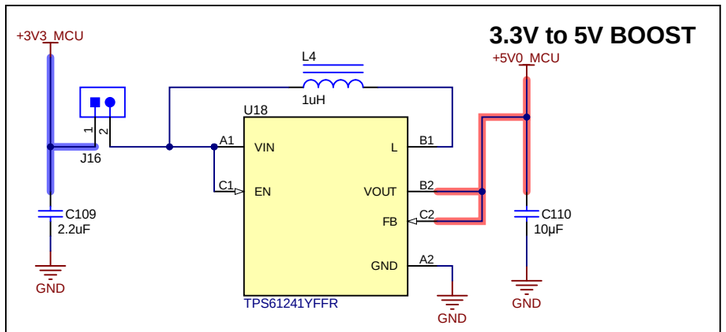
5V to 3.3V



System Supervisory Circuit



3.3V to 5V BOOST



Orderable: LAUNCHXL-F28P55X		Designed for: Public Release	Mod. Date: 2/10/2024
TID #: N/A		Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: A	Sheet Title:	
SVN Rev: Unknown revision		Assembly Variant: 001	Sheet: 6 of 7
Drawn By: Stevan Duraskovic		File: MCU133A_USB_and_Power.SchDoc	Size: B
Engineer: Stevan Duraskovic		Contact: http://www.ti.com/support	

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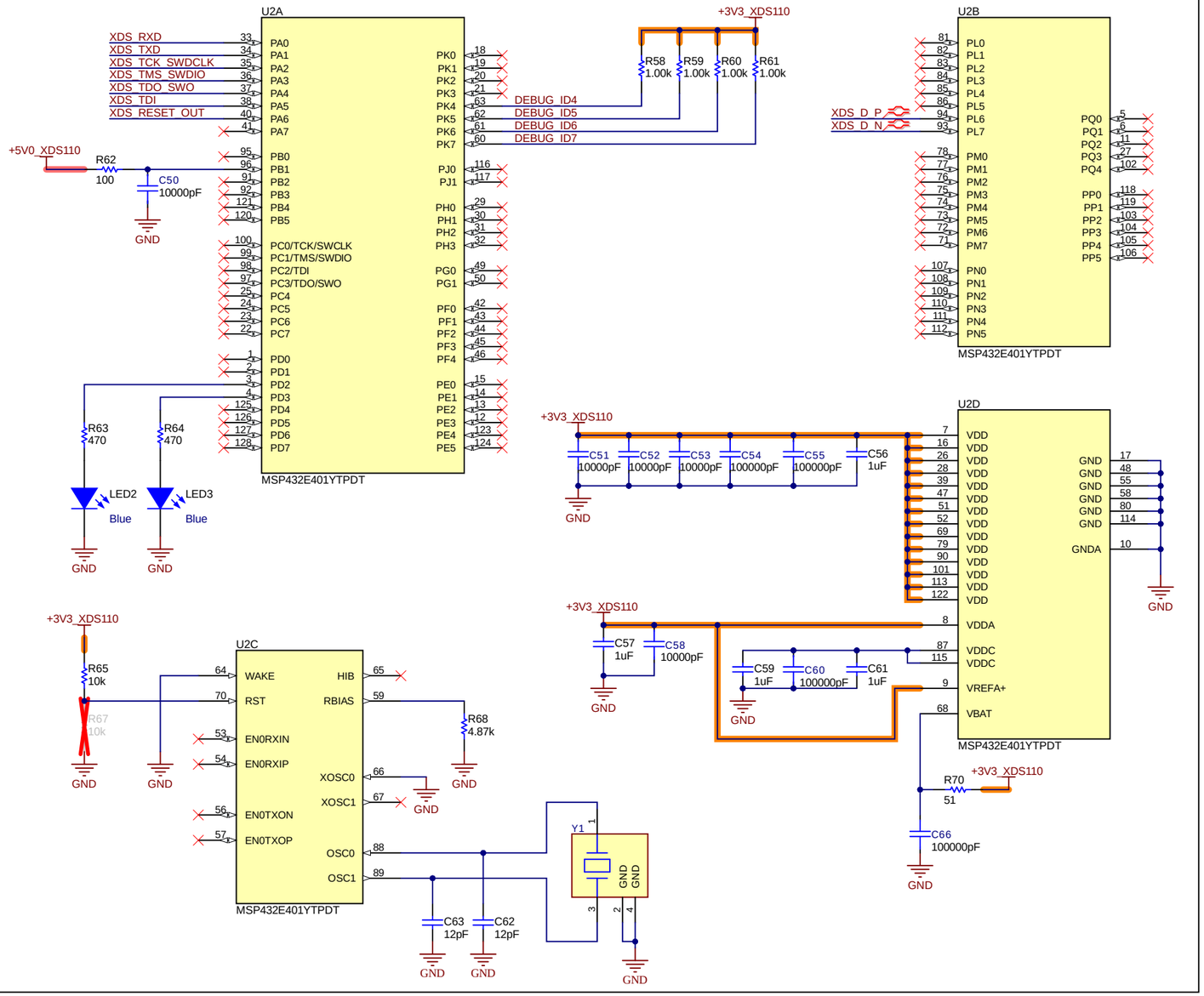
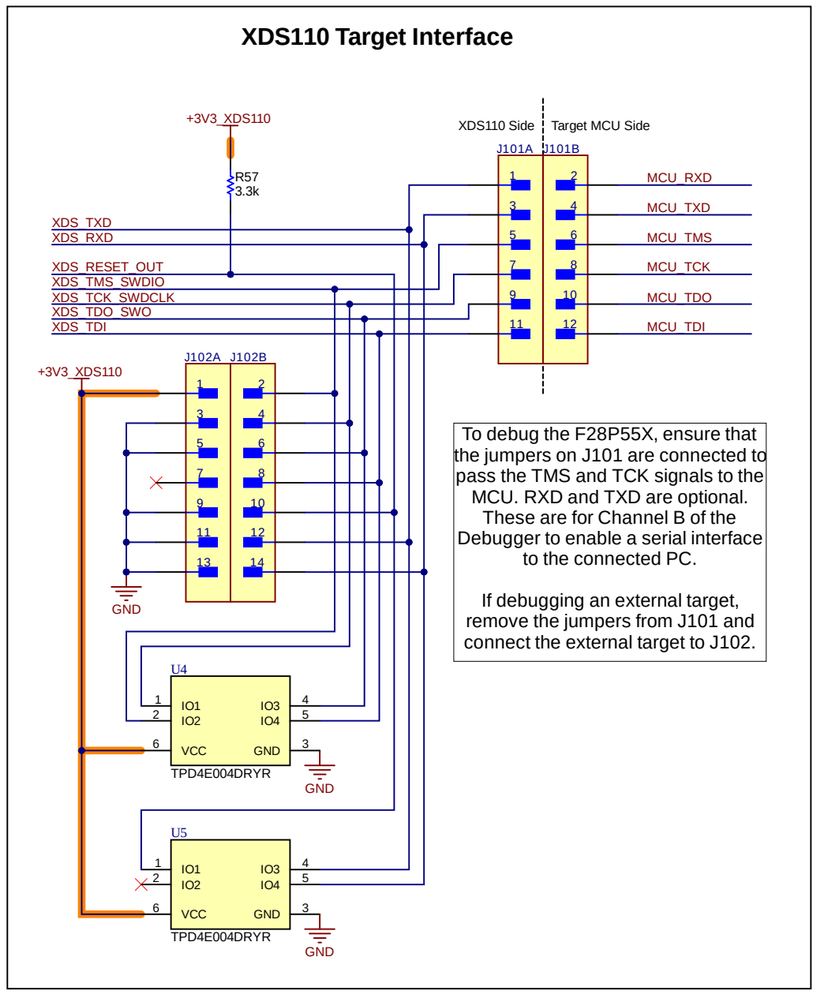
XDS110 Device



XDS110 Target Interface



Orderable: LAUNCHXL-F28P55X		Designed for: Public Release	Mod. Date: 1/11/2024
TID #: N/A		Project Title: LAUNCHXL-F28P55X	
Number: MCU133	Rev: A	Sheet Title:	
SVN Rev: Unknown revision		Assembly Variant: 001	Sheet: 7 of 8
Drawn By: Stevan Duraskovic		File: MCU133A_XDS110_MCU.SchDoc	Size: B
Engineer: Stevan Duraskovic		Contact: http://www.ti.com/support	

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FID1 FID2 FID3

FID4 FID5 FID6

MH1 MH2

MH3 MH4

PCB Number: MCU133
PCB Rev: A

Logo1
PCB
LOGO
Texas Instruments

CE Logo1

Logo3
PCB
LOGO
FCC disclaimer

Logo4
PCB
LOGO
WEEE logo

Logo5
PCB
LOGO
Texas Instruments

M1 M2 M3 M4 M5 M6 M7 M8 M9 M10 M11 M12 M13

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.

Orderable: LAUNCHXL-F28P55X	Designed for: Public Release	Mod. Date: 2/3/2024
TID #: N/A	Project Title: LAUNCHXL-F28P55X	
Number: MCU133 Rev: A	Sheet Title:	
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 8 of 8
Drawn By: Stevan Duraskovic	File: MCU133A_Hardware.SchDoc	Size: B
Engineer: Stevan Duraskovic	Contact: http://www.ti.com/support	

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