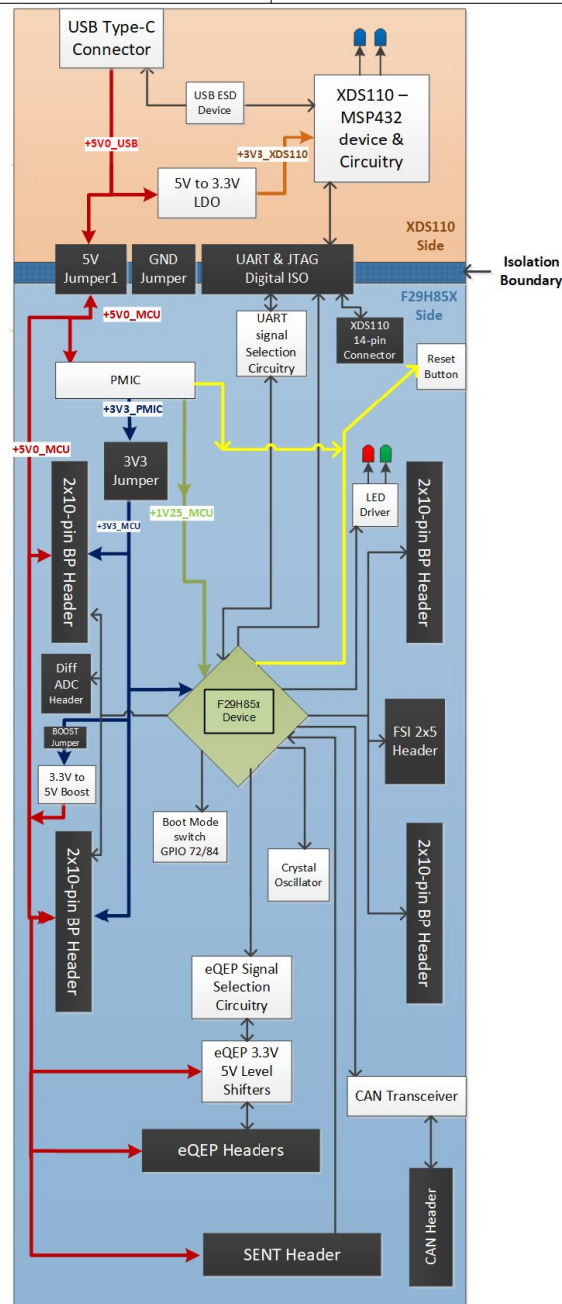


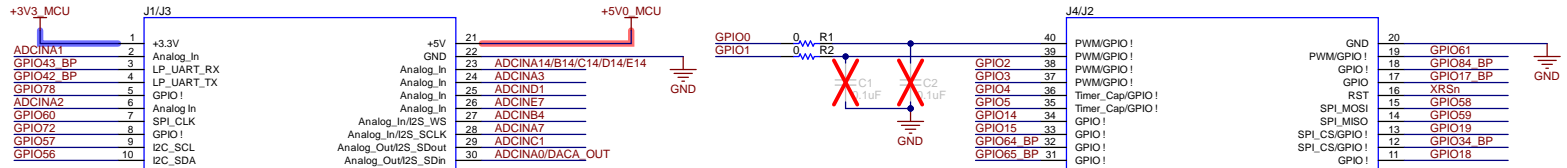
- 1) USB Differential Pairs - 90 Ohm  
 (A) USB\_D\_P and USB\_D\_N  
 2) ADC Differential pair Impedance Matching - 50 Ohm  
 (A) ADCINA4A5\_P and ADCINA4A5\_N  
 (B) ADCINB3B4\_P and ADCINB3B4\_N  
 (C) MCU\_A4A5\_P and MCU\_A4A5\_N  
 (D) MCU\_B3B4\_P and MCU\_B3B4\_N  
 3) CLK Paths - 50 Ohm  
 (A) X1  
 (B) X2



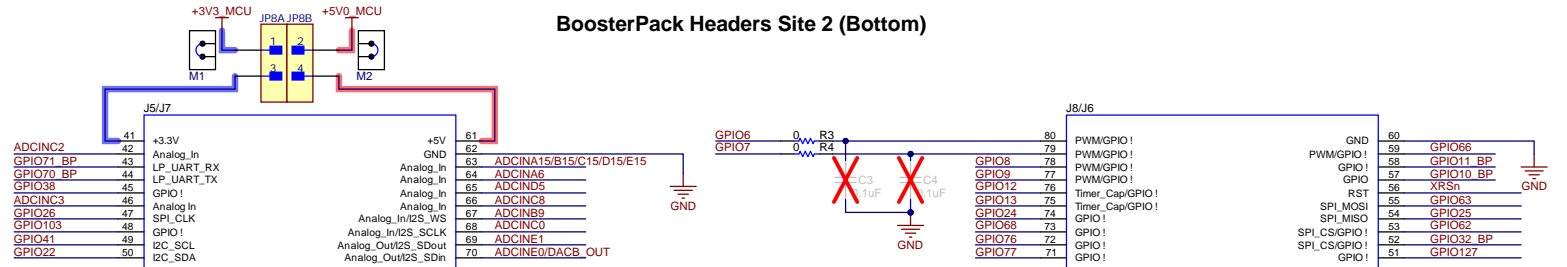
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| Orderable: LAUNCHXL-F29H85X | Designed for: Public Release       | Mod. Date: 3/10/2025  |  |
| TID #: N/A                  | Project Title: LAUNCHXL-F29H85X    | Sheet Title:          |  |
| Number: MCU119              | Rev: A                             | Assembly Variant: 001 |  |
| SVN Rev: Unknown revision   | File: MCU119A_Block_Diagram_SchDoc | Sheet: 1 of 8         |  |
| Drawn By: Susmitha Bumadi   | Contact: http://www.ti.com/support | Size: B               |  |

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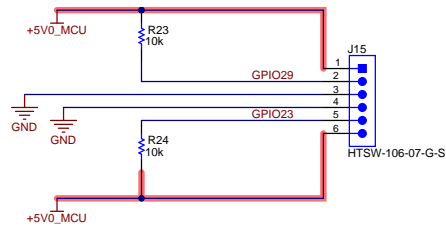
## BoosterPack Headers Site 1 (Top)



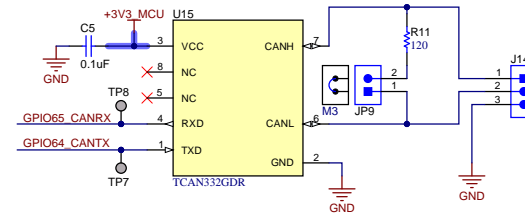
## BoosterPack Headers Site 2 (Bottom)



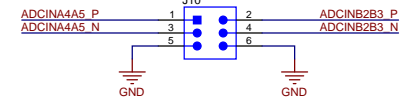
## SENT Connector



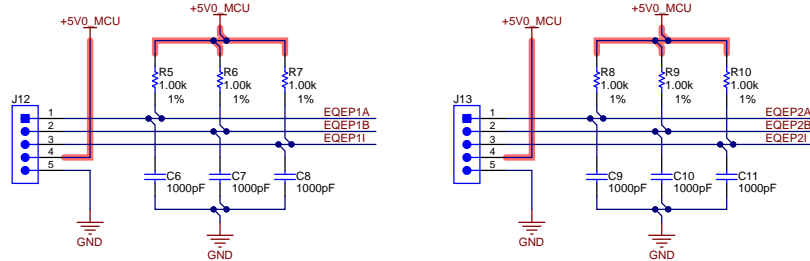
## CAN Transceiver & Connector



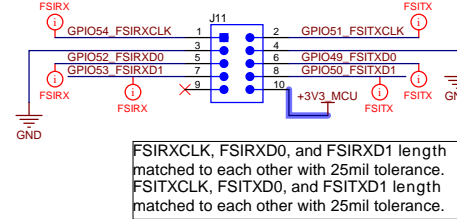
## Differential ADC Connector



## EQEP Connectors



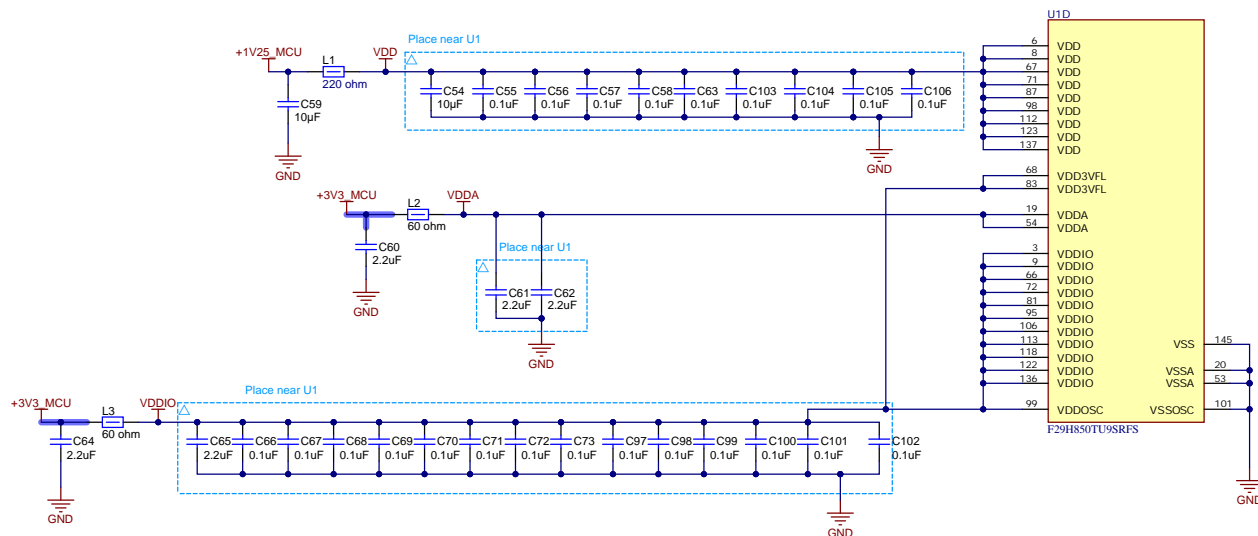
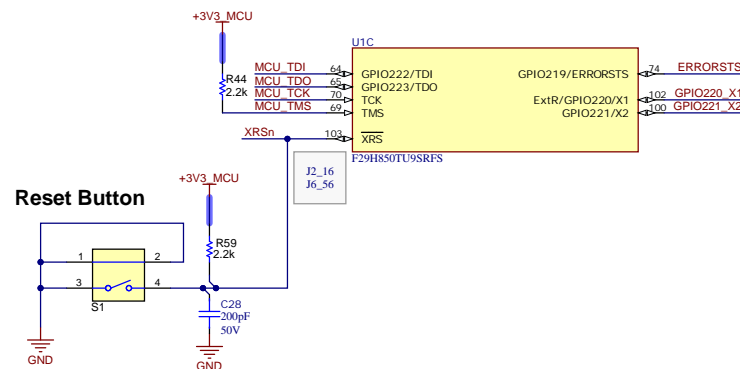
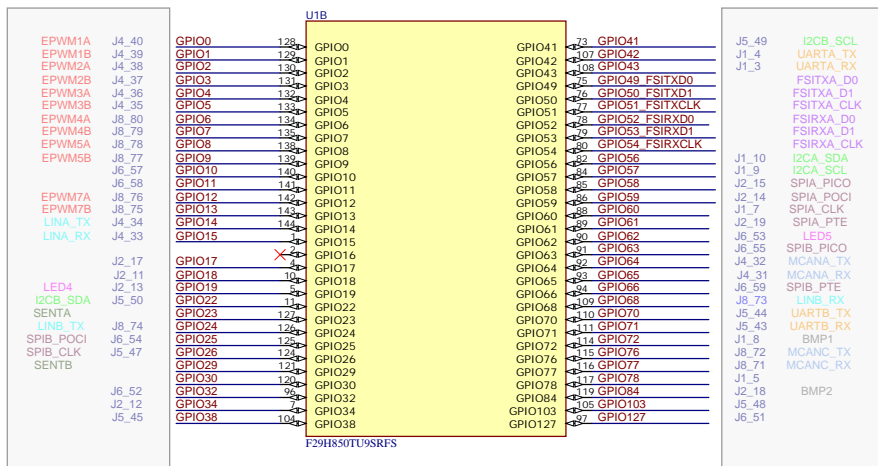
## FSI Connector

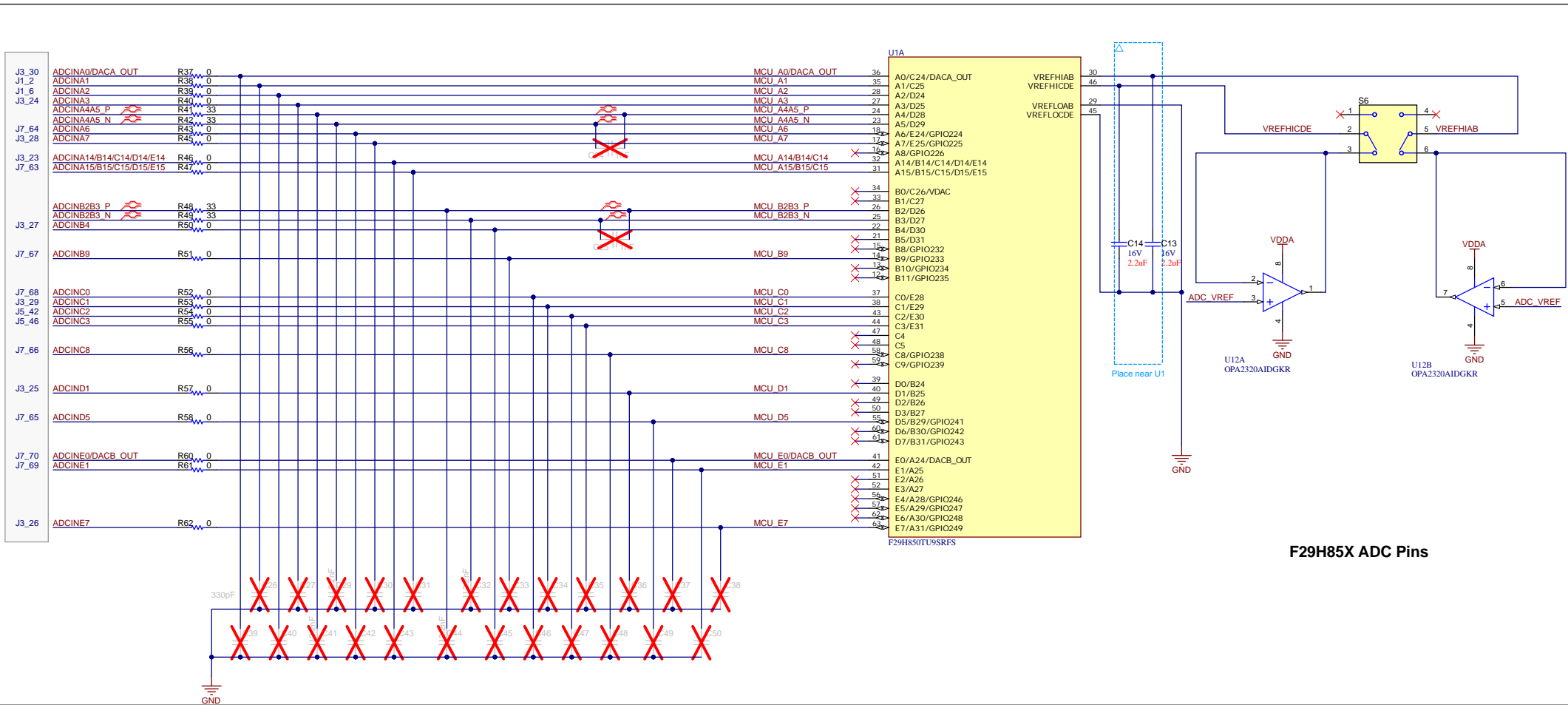


FSIRXCLK, FSIRXD0, and FSIRXD1 length matched to each other with 25mil tolerance. FSITXCLK, FSITXD0, and FSITXD1 length matched to each other with 25mil tolerance.

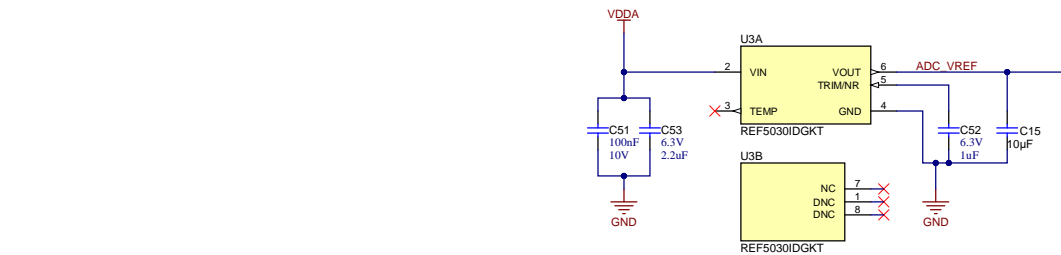
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# F29H85x Device



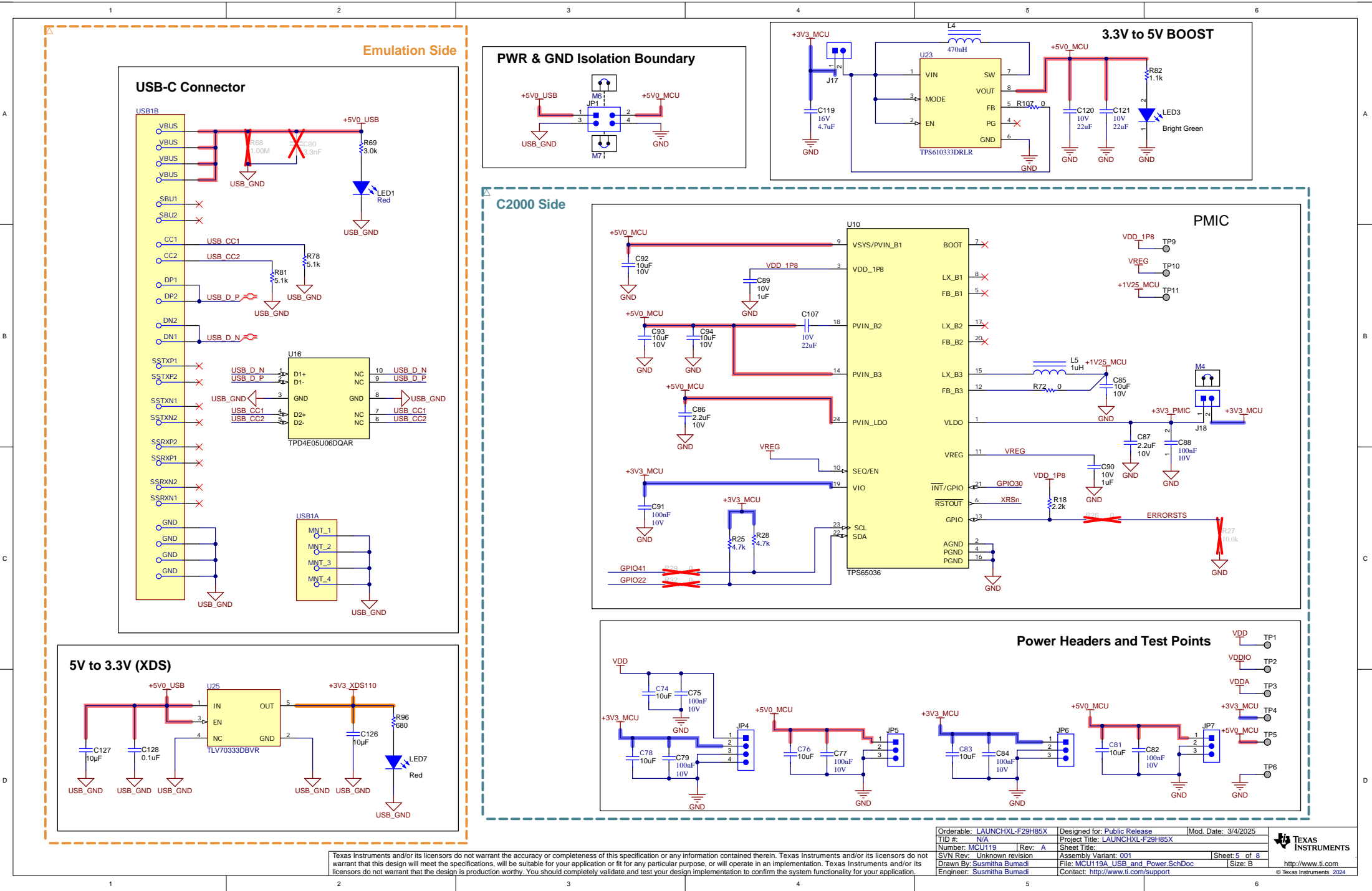


F29H85X ADC Pins

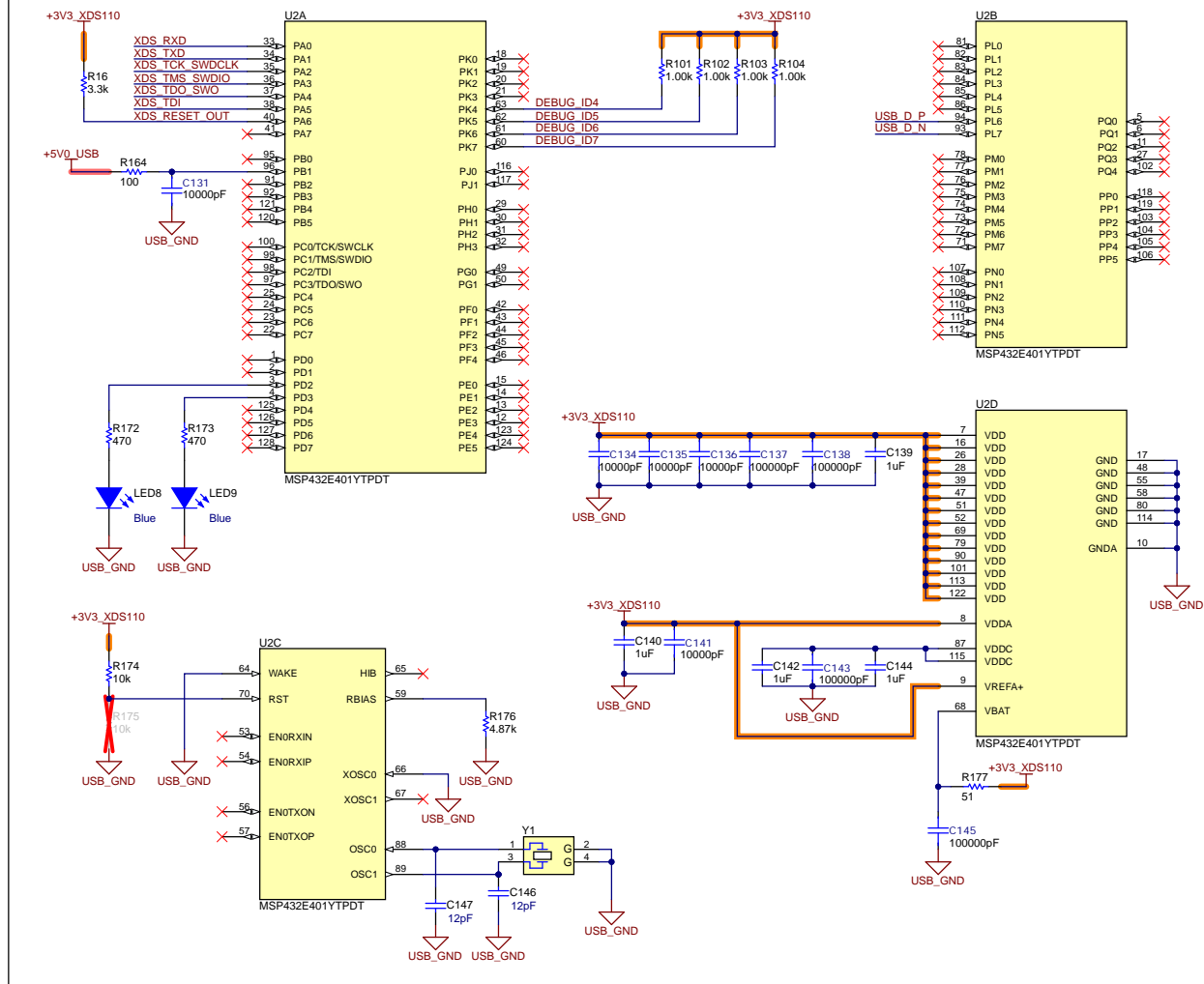


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| TID #: N/A                  | Project Title: LAUNCHXL-F29H85X  |                      |
| Number: MCU119              | Rev: A   | Sheet Title:         |
| SVN Rev: Unknown revision   | Assembly Variant: 001  | Sheet: 4 of 8        |
| Drawn By: Susmitha Bumadi   | File: MCU119A_ADC_SchDoc   | Size: B              |
| Engineer: Susmitha Bumadi   | Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a> |                      |

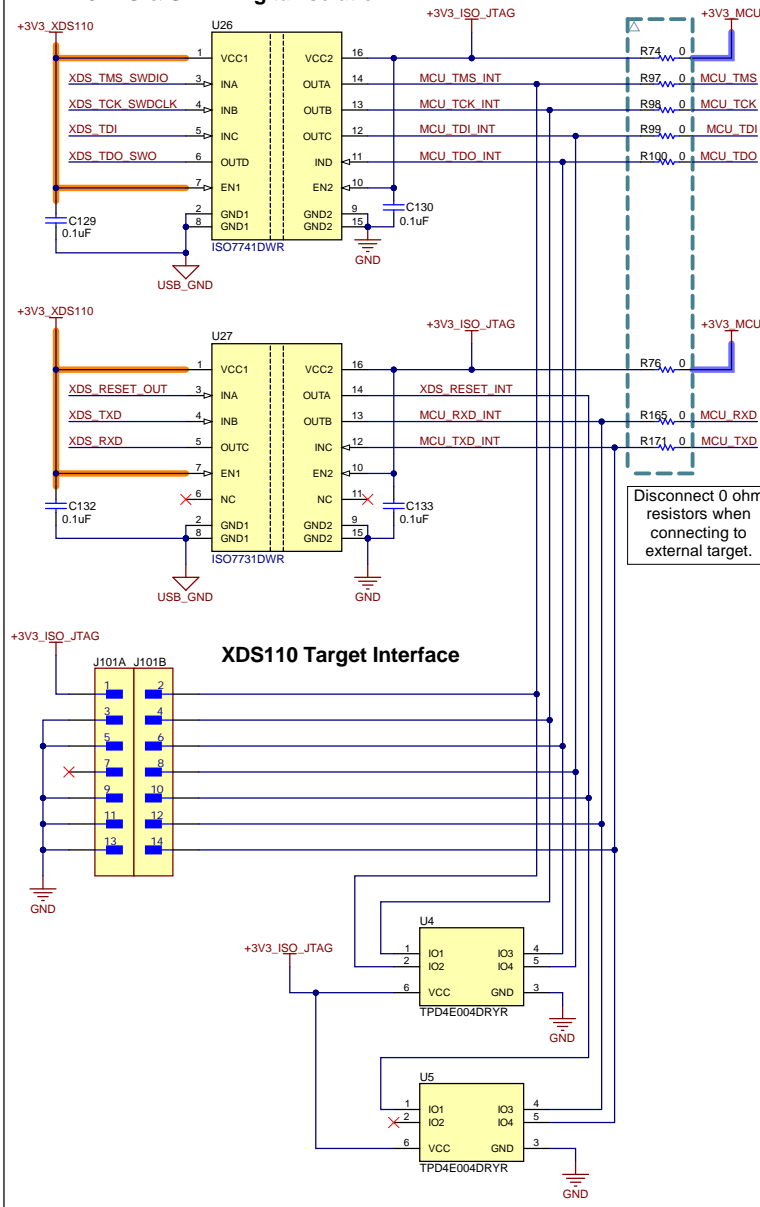
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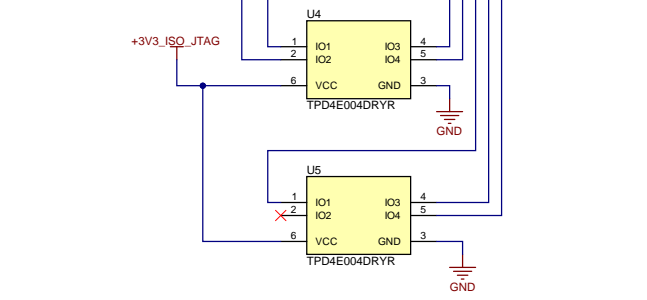
## XDS110 Device



## JTAG & UART Digital Isolation



## XDS110 Target Interface



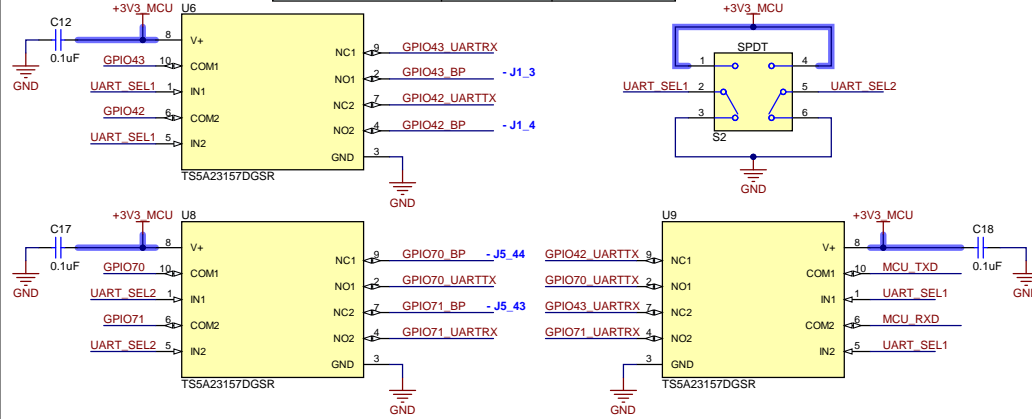
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| TID #: N/A                  | Project Title: LAUNCHXL-F29H85X  |   |
| Number: MCU119              | Rev: A   | Sheet Title:                                      |
| SVN Rev: Unknown revision   | Assembly Variant: 001  | Sheet 6 of 8                                      |
| Drawn By: Susmitha Bumadi   | File: MCU119A_XDS110_MCU_SchDoc  | Size: B   |
| Engineer: Susmitha Bumadi   | 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> |

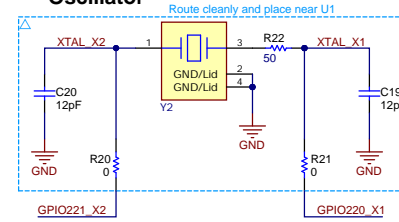
## UART Routing

| UART_SEL1 | UART_SEL2 | GPIO42/43 Route | GPIO70/71 Route |
|-----------|-----------|-----------------|-----------------|
| 0         | 0         | XDS110 COM Port | BP              |
| 0         | 1         | XDS110 COM Port | NC              |
| 1         | 0         | BP              | BP              |
| 1         | 1         | BP              | XDS110 COM Port |

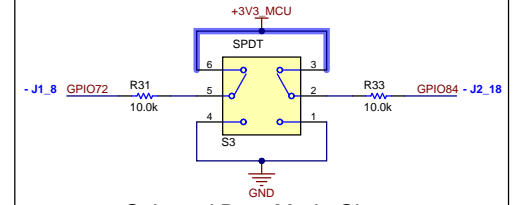
- DEFAULT



## Oscillator



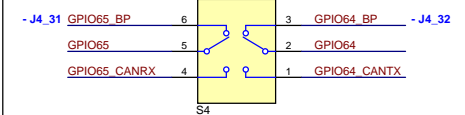
## Boot Mode Select



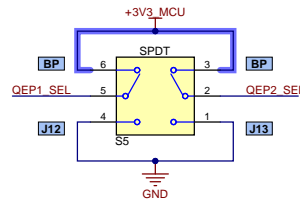
## Selected Boot Mode Chart

| Mode # | GPIO72 | GPIO84 | 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           |

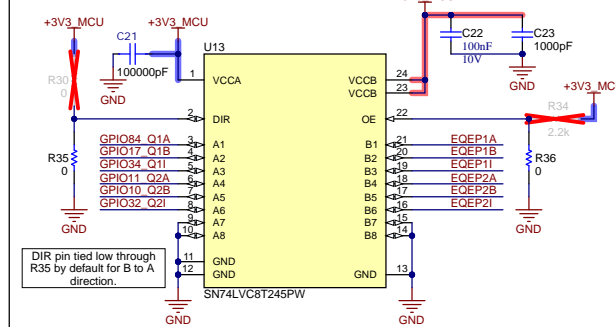
## CAN Routing



## EQEP Routing



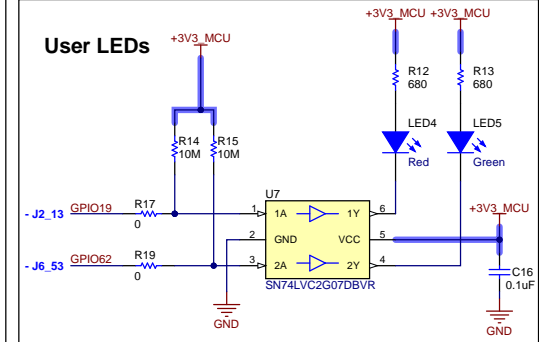
## EQEP Level Shifter



To disable the Level Shifter:

1. De-populate R36
2. Place a 2.2k ohm resistor on R34 to pull-up OE

## User LEDs



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| TID #: N/A                  | Project Title: LAUNCHXL-F29H85X  |                      |
| Number: MCU119              | Rev: A   | Sheet Title:         |
| SVN Rev: Unknown revision   | Assembly Variant: 001  | Sheet: 7 of 8        |
| Drawn By: Susmitha Bumadi   | File: MCU119A_AIRouting_Misc.SchDoc  | Size: B              |
| Engineer: Susmitha Bumadi   | Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a> |                      |



PCB Number: MCU119  
PCB Rev: A



Logo1  
PCB  
LOGO  
Texas Instruments



Logo3  
PCB  
LOGO  
FCC disclaimer

Logo4  
PCB  
LOGO  
WEEE logo

Logo5  
PCB  
LOGO  
Texas Instruments

Logo6  
PCB  
LOGO  
ETHERCAT LABEL

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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| TID #: N/A                  | Project Title: LAUNCHXL-F29H85X    | Sheet Title:          |   |
| Number: MCU119              | Rev: A                             | Assembly Variant: 001 |   |
| SVN Rev: Unknown revision   | File: MCU119A_Hardware_SchDoc      | Sheet: 8 of 8         |   |
| Drawn By: Susmitha Bumadi   | Contact: http://www.ti.com/support | Size: B               |   |

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