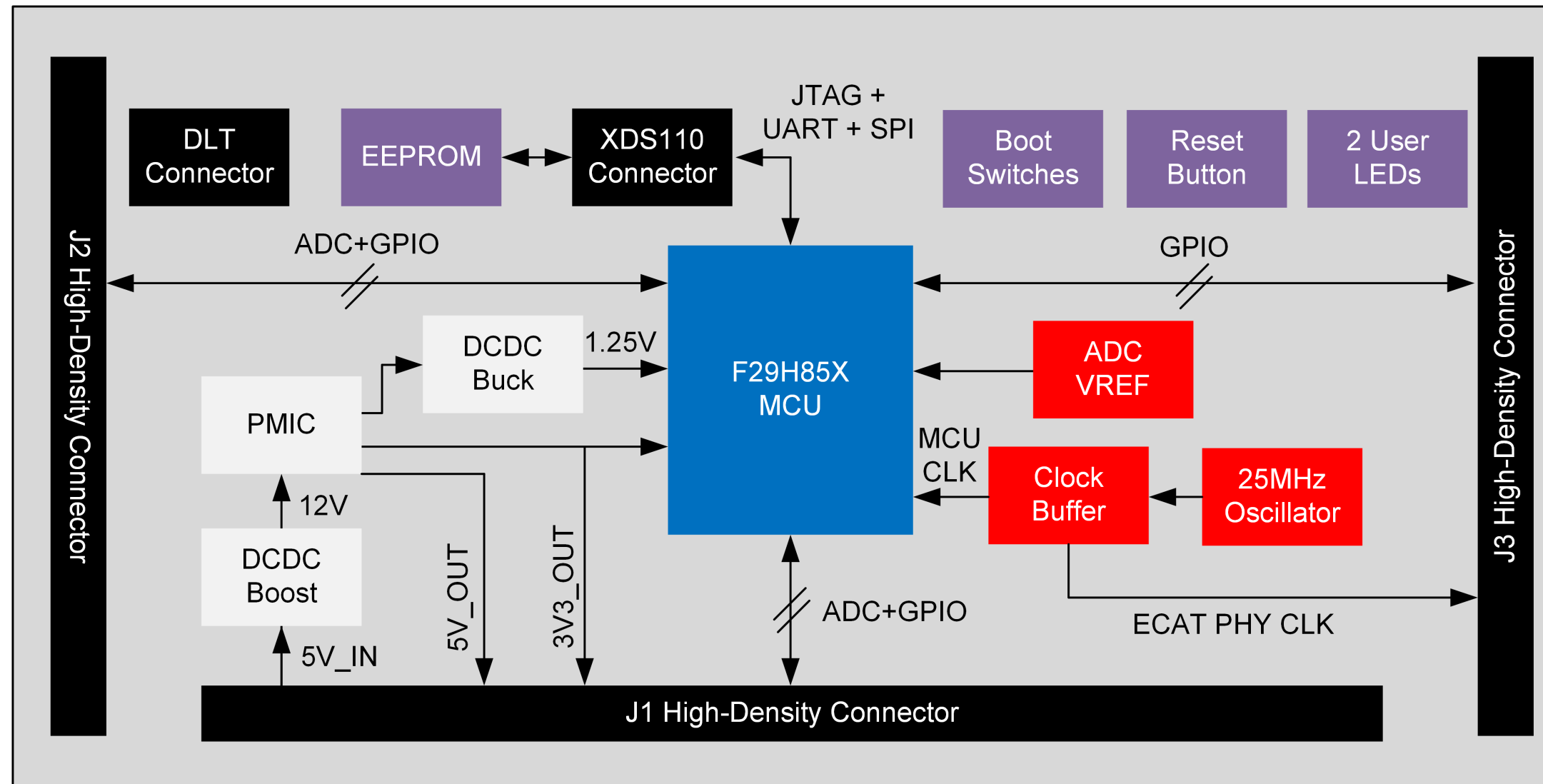
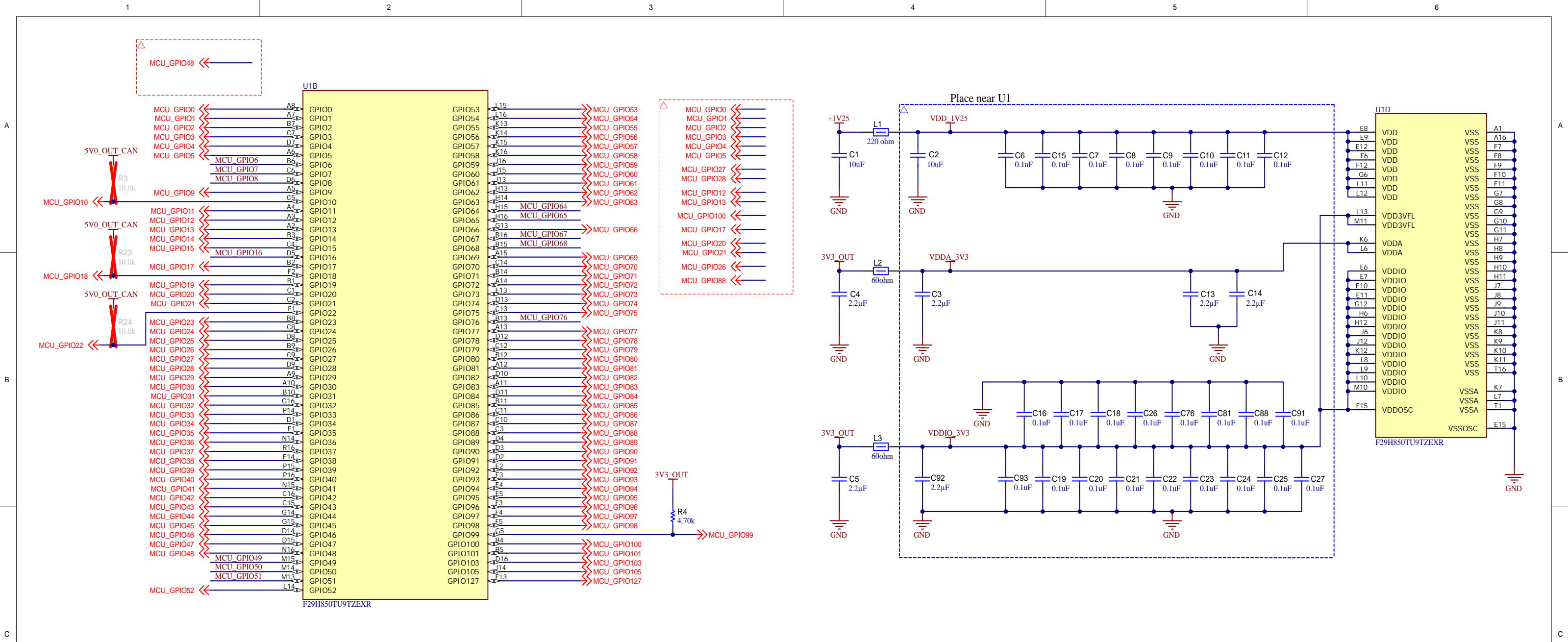


| Revision History | | | | |
|------------------|-------|---------------|-------------|--|
| Rev | ECN # | Approved Date | Approved by | Notes |
| E1 | N/A | N/A | GM | Original engineering release. |
| A | N/A | Oct. 17, 2024 | GM | <ul style="list-style-type: none"> - Changed default boot mode to 11b - Changed C97 part number - Changed internal VREF connection on S3/S4 - Changed FSI connections on J5 - Removed tracking feature from U7 - Added soft start capacitor to U7 - Changed filtering scheme for ADC external reference |



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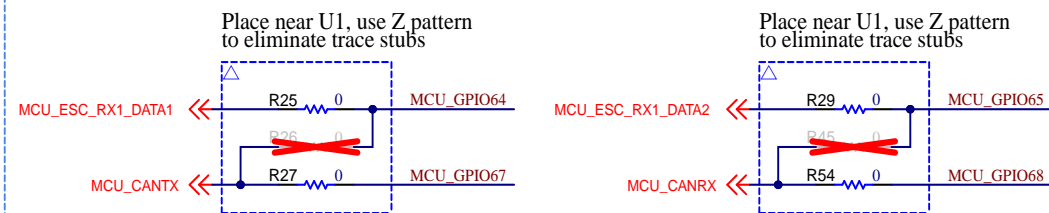
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| Orderable: F29H85X-SOM-EVM | Designed for: Public Release | Mod. Date: 10/23/2024 |
| TID #: N/A | Project Title: F29H85x controlSOM EVM | |
| Number: MCU144 | Rev: A | Sheet Title: Block Diagram |
| SVN Rev: Version control disabled | Assembly Variant: 002 | Sheet: 1 of 8 |
| Drawn By: Gustavo Martinez | File: MCU144A_Coversheet.SchDoc | Size: B |
| Engineer: Gustavo Martinez | Contact: http://www.ti.com/support | |



EtherCAT / MCAN-A Boot Selection

| Mode | Resistor Configuration |
|---------------------|---|
| EtherCAT support* | Populate R25/R27 and R29/R54 with 0-ohm resistor, remove R26/R45. |
| MCAN-A boot support | Populate R26/R45 with 0-ohm resistor, remove R25/R27 and R29/R54. |

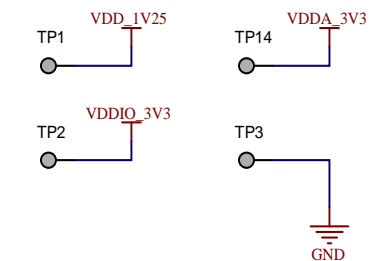
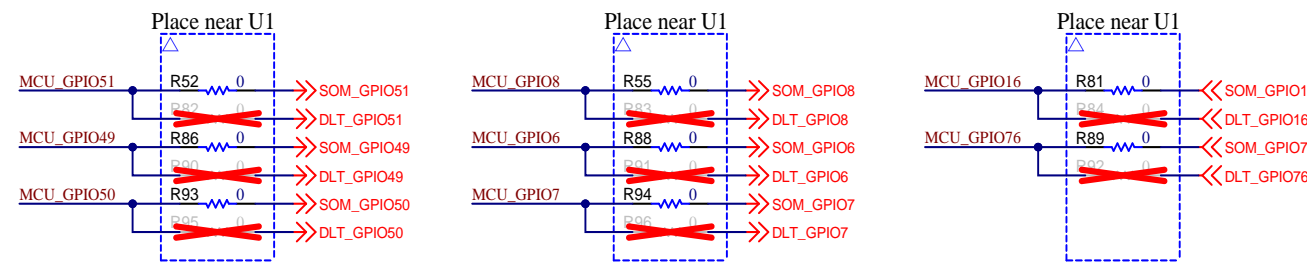
*Default



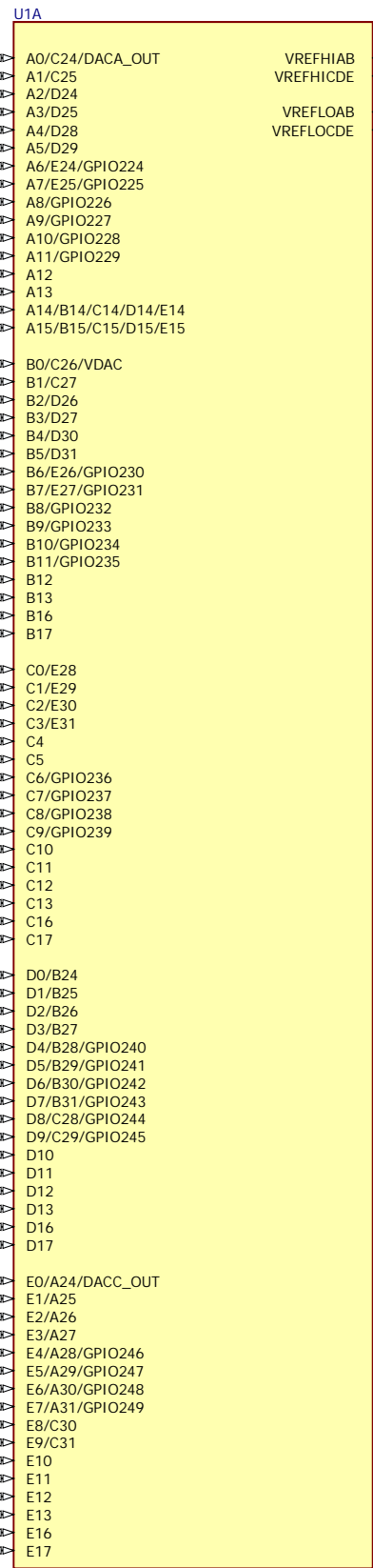
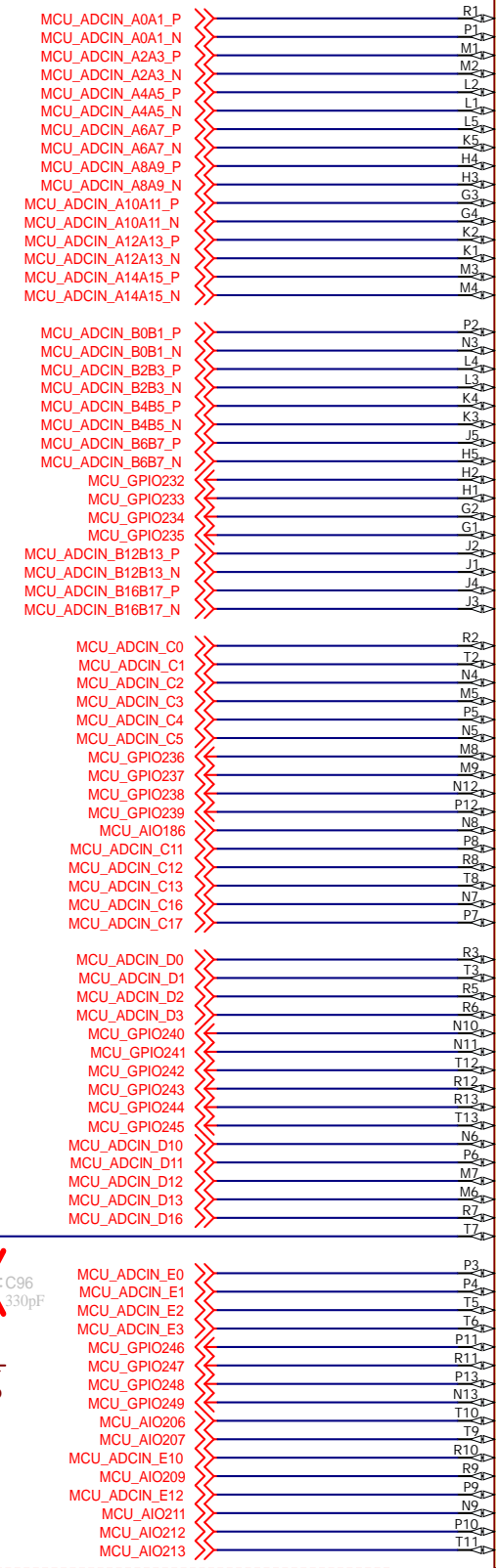
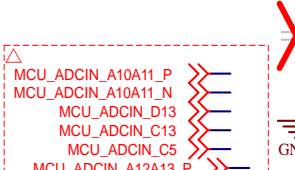
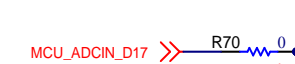
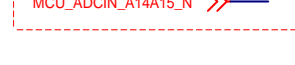
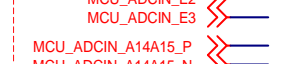
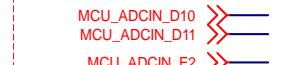
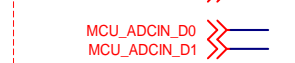
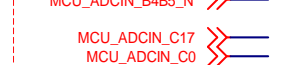
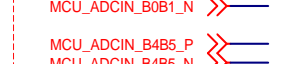
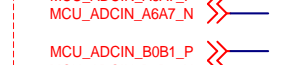
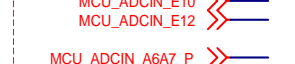
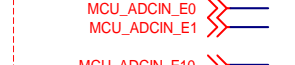
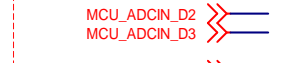
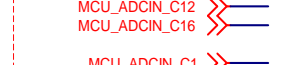
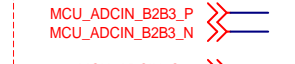
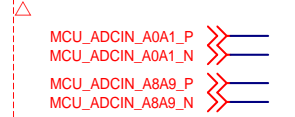
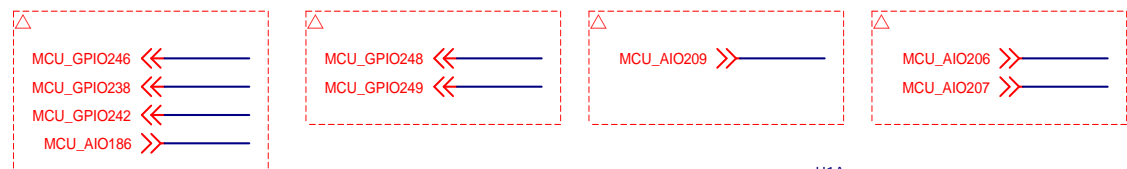
FSI Baseboard / DLT Selection

| Mode | Resistor Configuration |
|--------------------|---|
| Baseboard support* | Populate all 0-ohm resistors on SOM_GPIO nets. Remove all resistors on DLT_GPIO nets. |
| DLT support | Populate all 0-ohm resistors on DLT_GPIO nets. Remove all resistors on SOM_GPIO nets. |

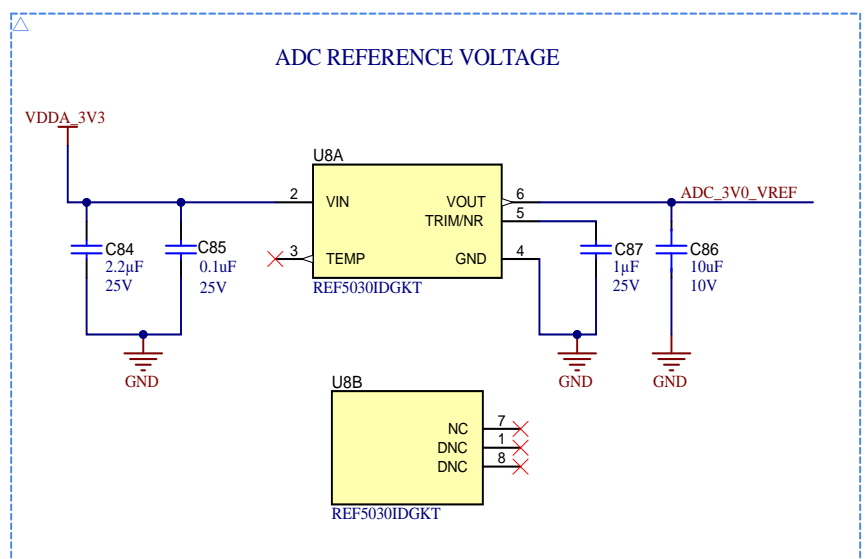
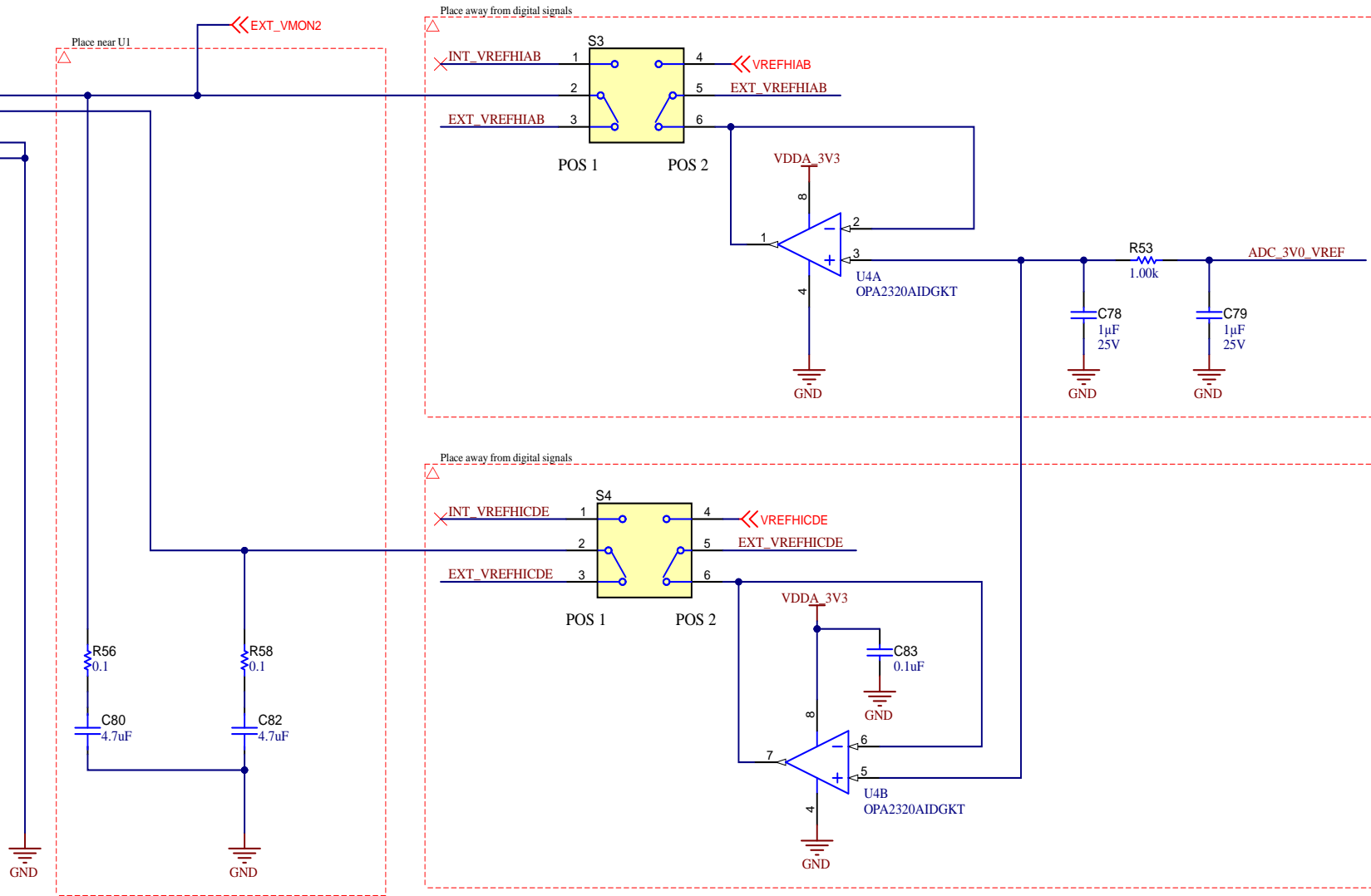
*Default



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F29H850TU9TZEXR



| S3 (POS 1) | S3 (POS 2) | VREFHIAB Source |
|------------|------------|-----------------------------|
| 1-2 | X | Internal VREF |
| 2-3 | 4-5 | External VREF (J1.VREFHIAB) |
| 2-3 | 5-6 | External VREF (3V0)* |

*Default

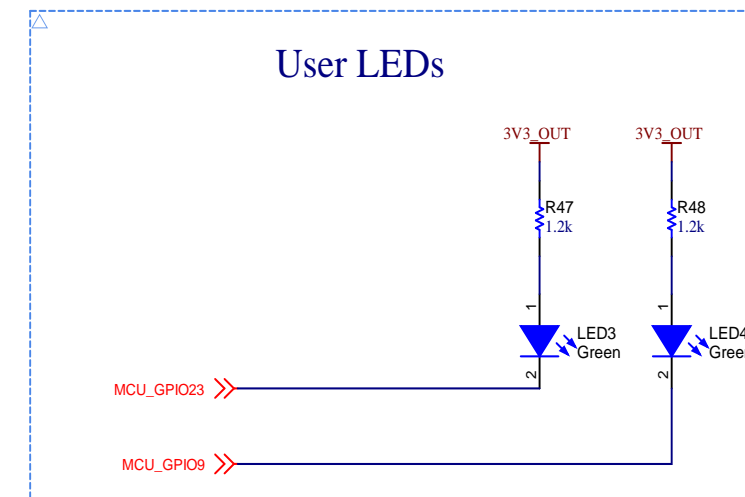
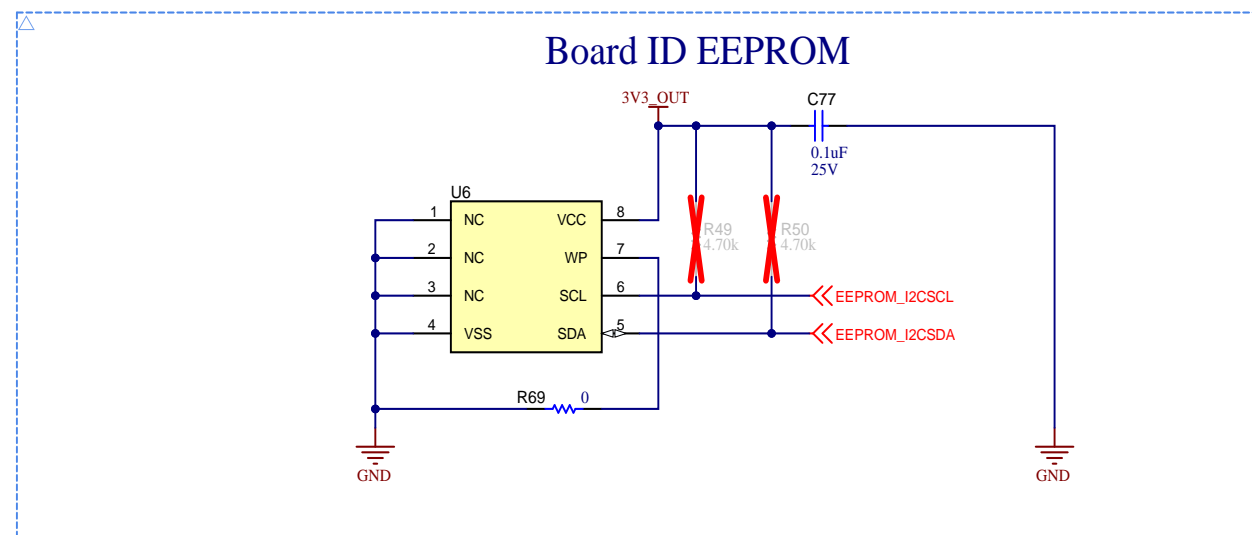
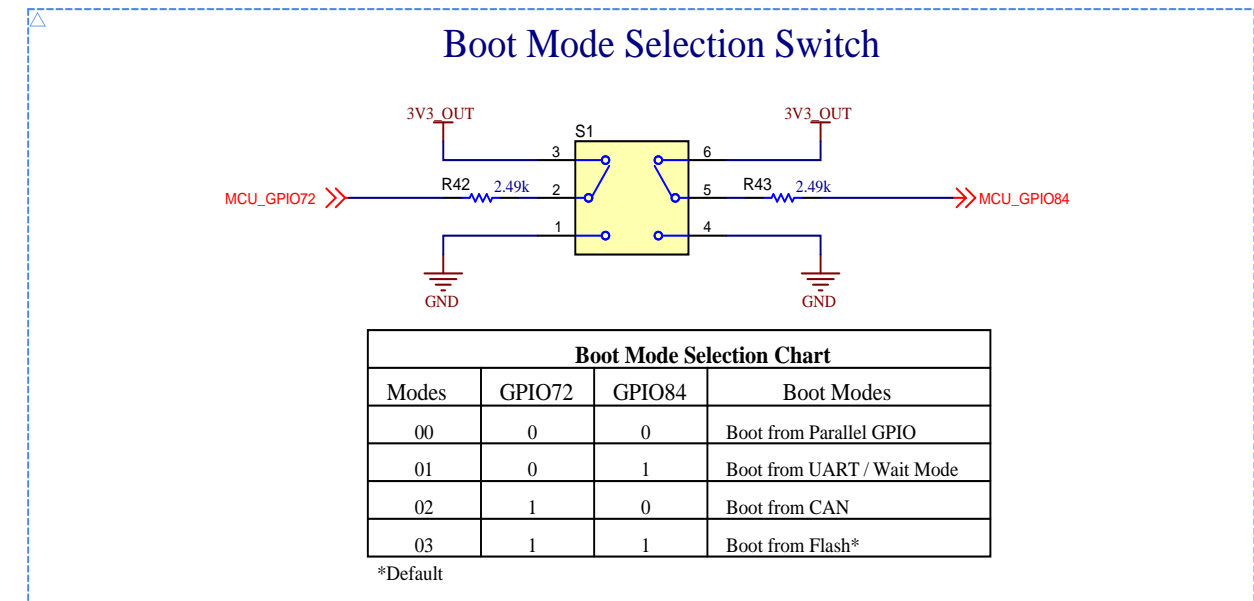
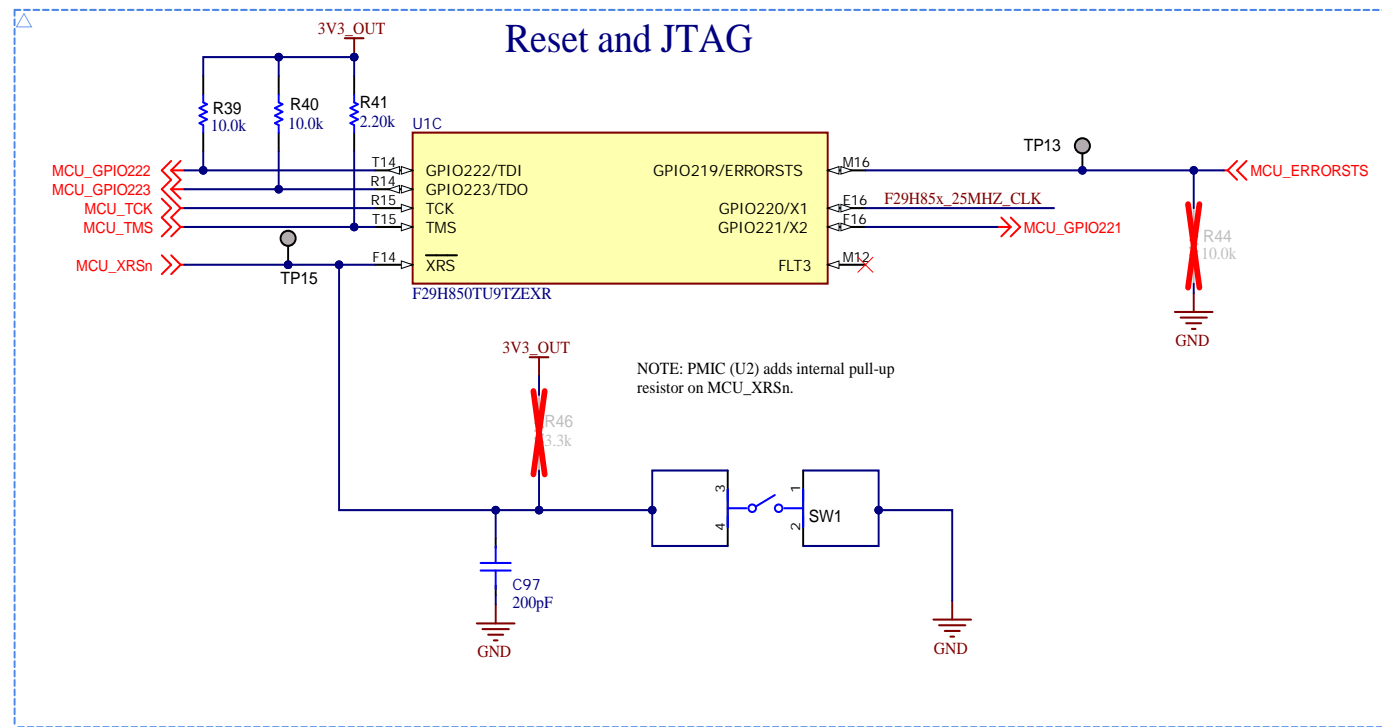
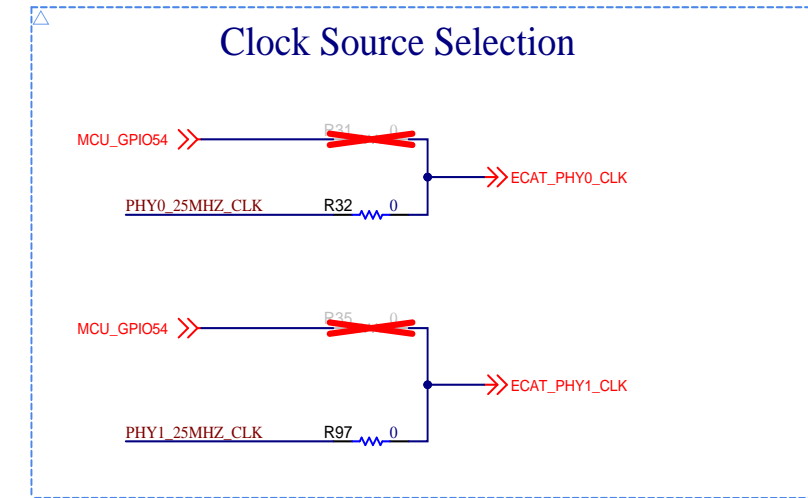
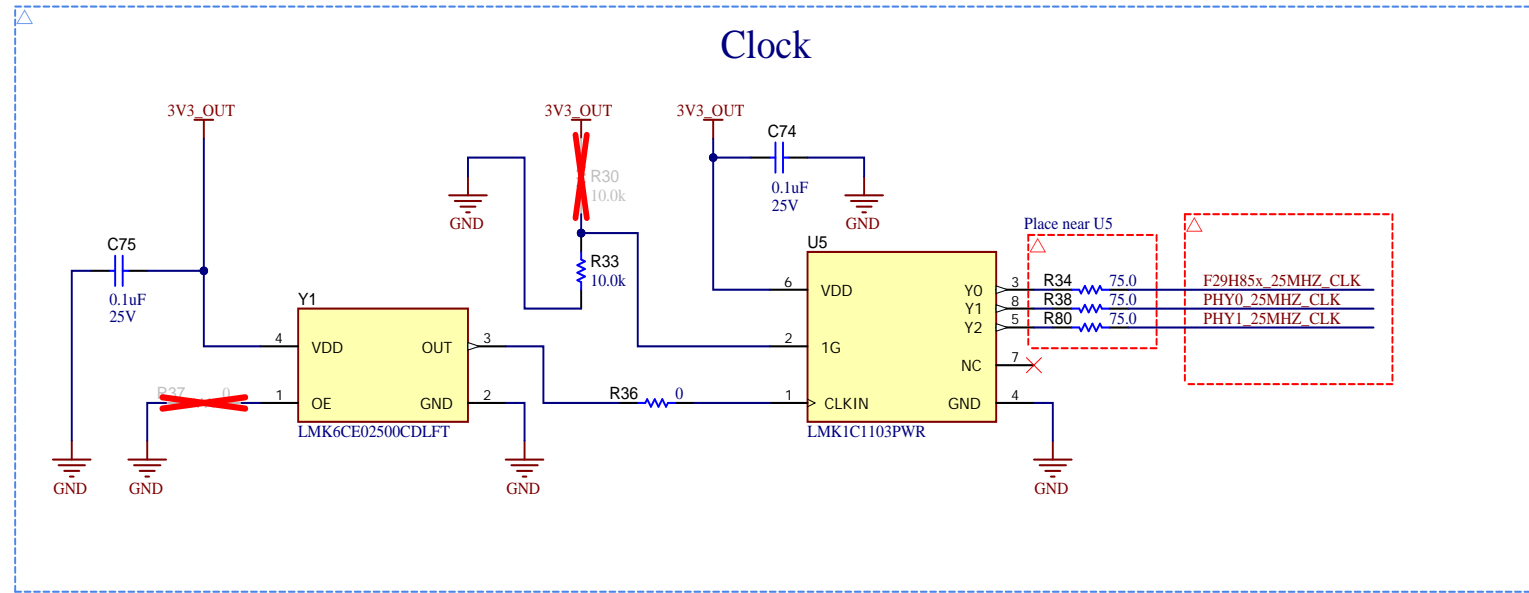
| S4 (POS 1) | S4 (POS 2) | VREFHICDE Source |
|------------|------------|------------------------------|
| 1-2 | X | Internal VREF |
| 2-3 | 4-5 | External VREF (J1.VREFHICDE) |
| 2-3 | 5-6 | External VREF (3V0)* |

*Default

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| | | |
|-----------------------------------|---------------------------------------|----------------------|
| Orderable: F29H85X-SOM-EVM | Designed for: Public Release | Mod. Date: 11/4/2024 |
| TID #: N/A | Project Title: F29H85x controlSOM EVM | |
| Number: MCU144 | Rev: A | Sheet Title: ADC |
| SVN Rev: Version control disabled | Assembly Variant: 002 | Sheet: 3 of 8 |
| Drawn By: Gustavo Martinez | File: MCU144A_ADC.SchDoc | Size: B |
| Engineer: Gustavo Martinez | Contact: http://www.ti.com/support | |

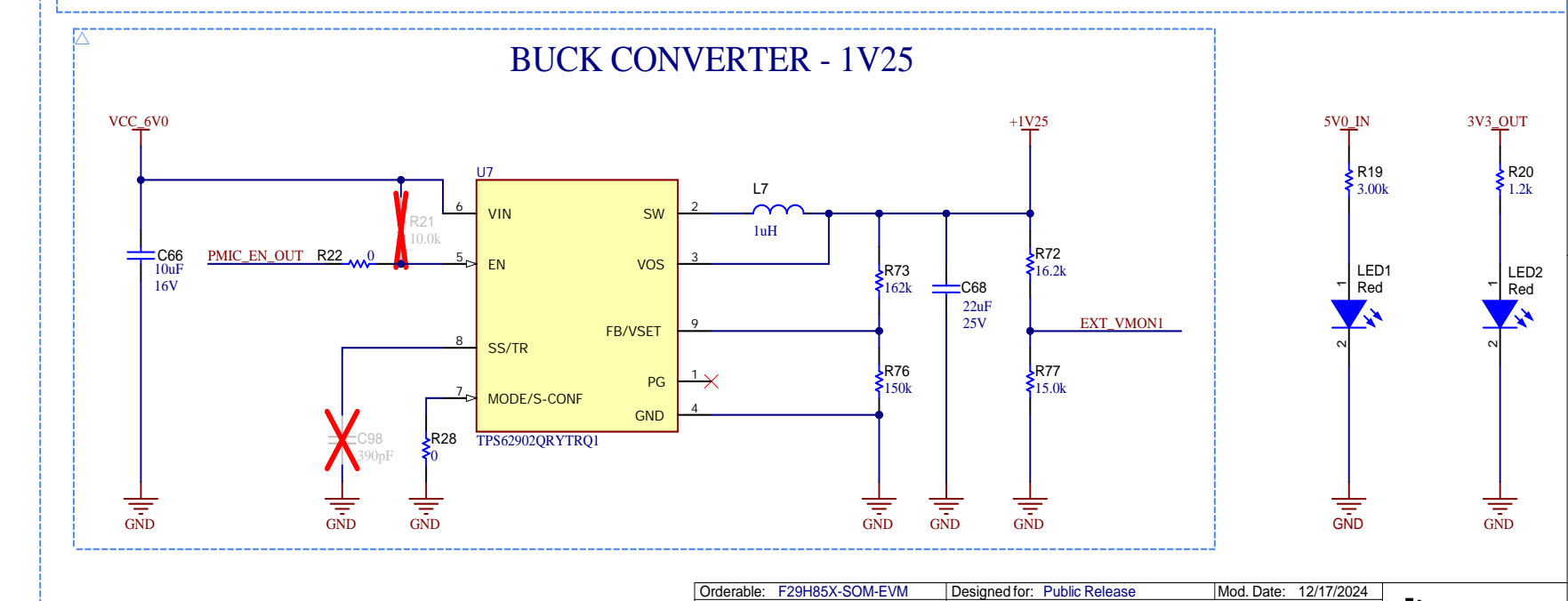
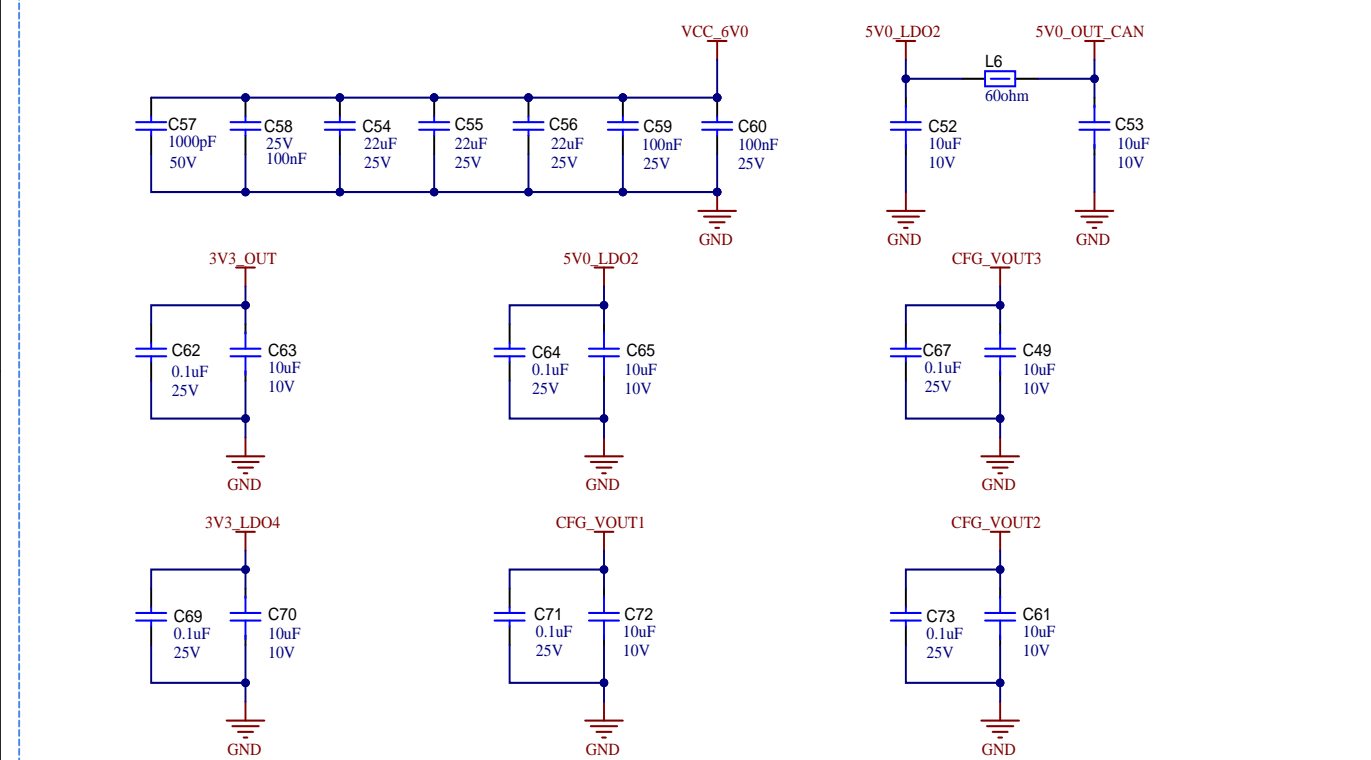
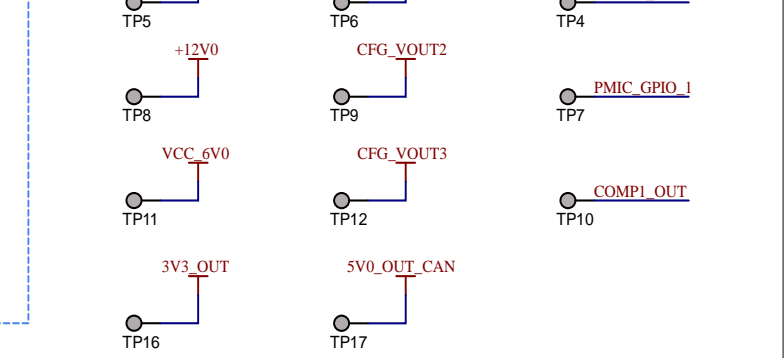
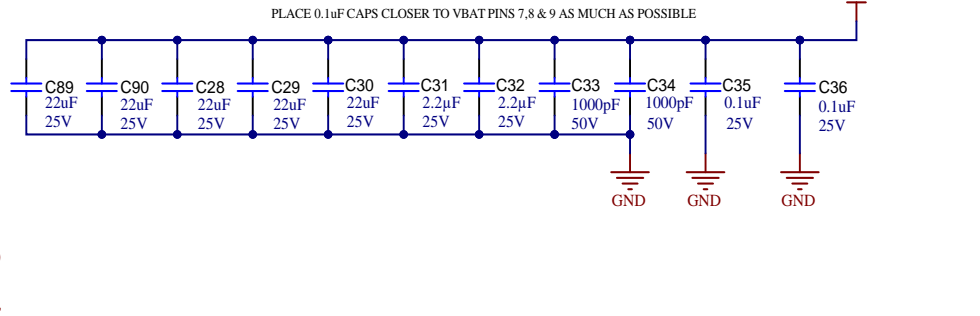
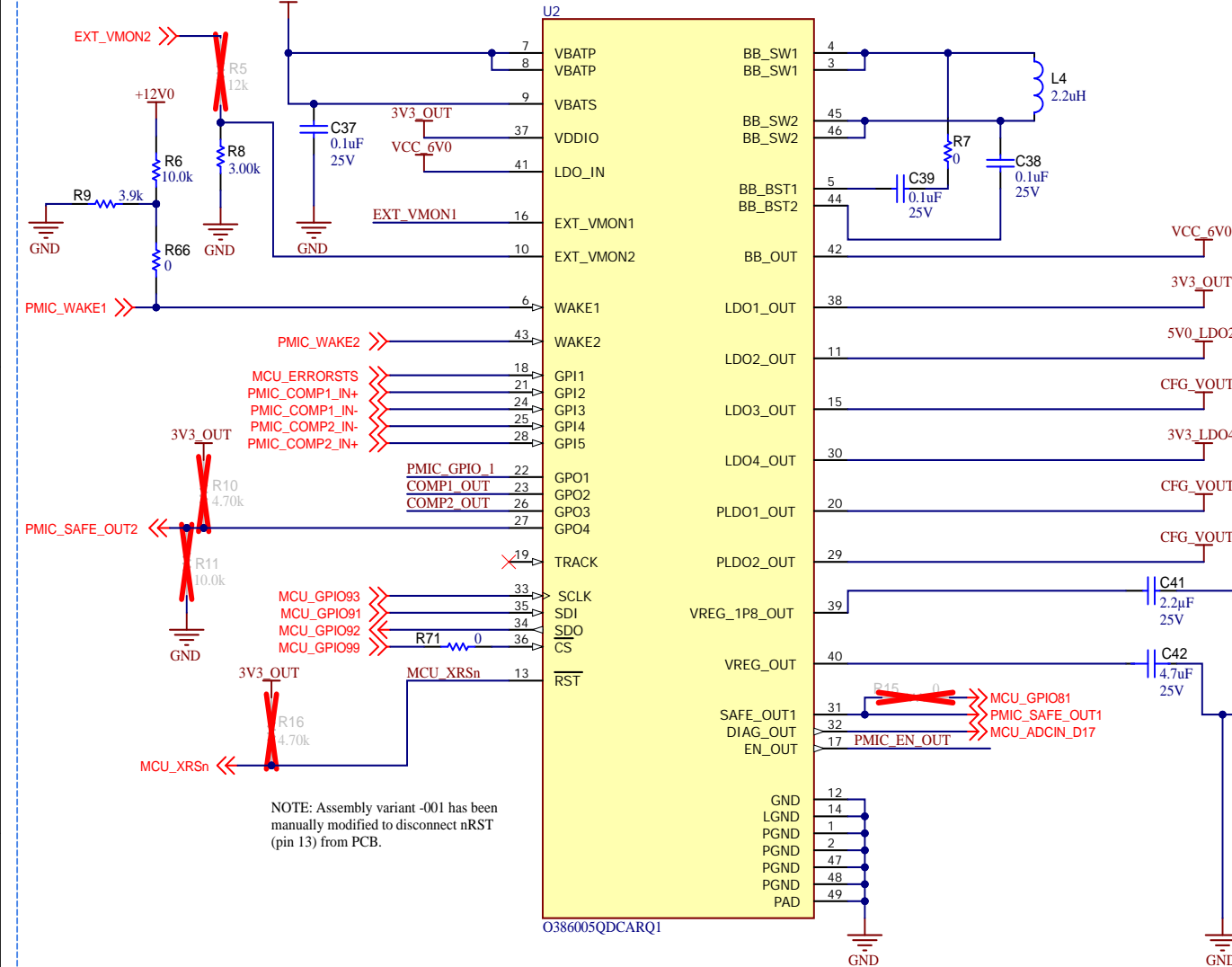




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| | | |
|-----------------------------------|---------------------------------------|-------------------------------------|
| Orderable: F29H85X-SOM-EVM | Designed for: Public Release | Mod. Date: 12/31/2024 |
| TID #: N/A | Project Title: F29H85x controlSOM EVM | |
| Number: MCU144 | Rev: A | Sheet Title: Clock, Reset, and Boot |
| SVN Rev: Version control disabled | Assembly Variant: 002 | Sheet: 4 of 8 |
| Drawn By: Gustavo Martinez | File: MCU144A_Clock_Reset_Boot.SchDoc | Size: B |
| Engineer: Gustavo Martinez | Contact: http://www.ti.com/support | |

TPS653860 PMIC



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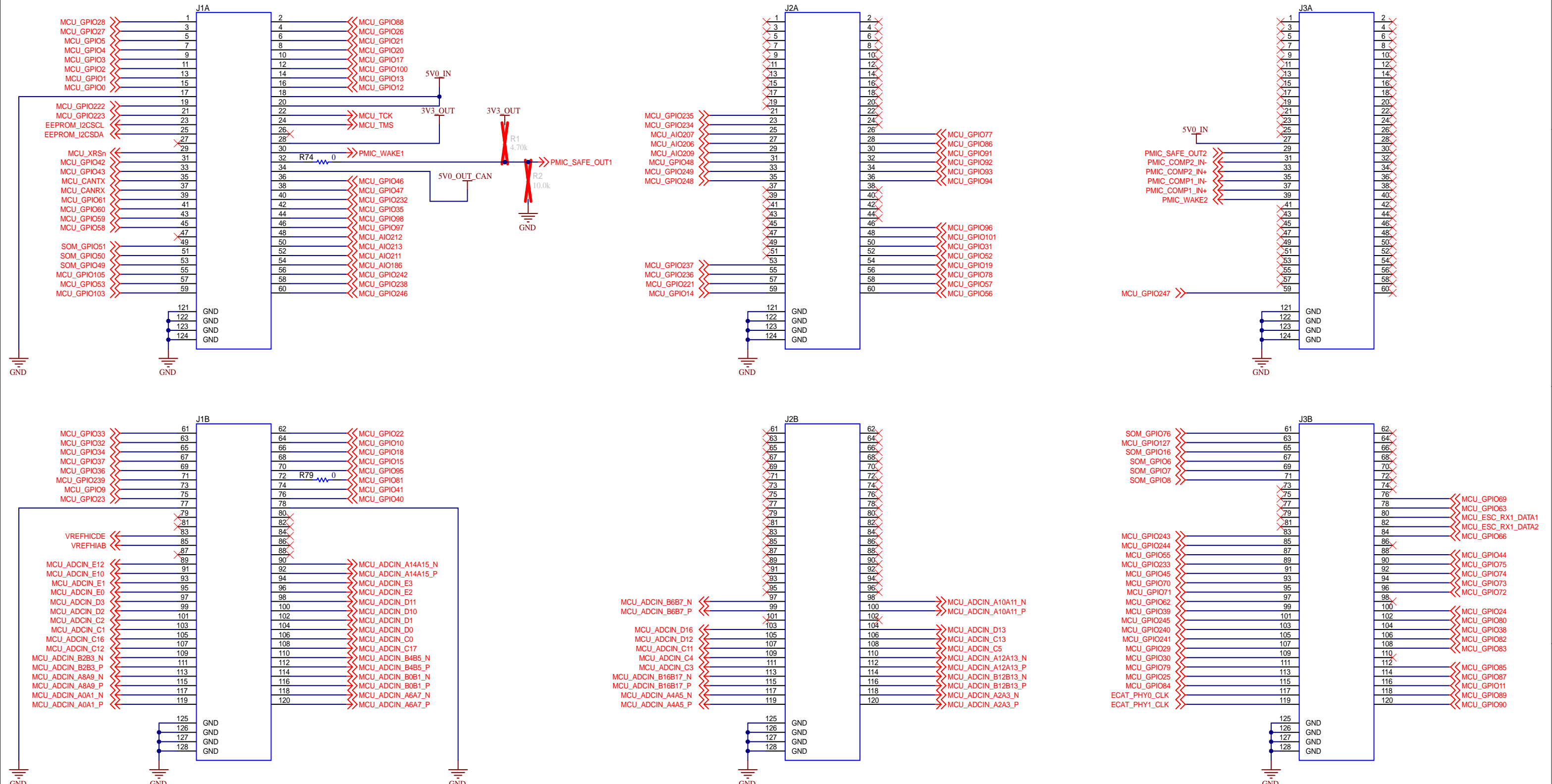
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| Orderable: F29H85X-SOM-EVM | Designed for: Public Release | Mod. Date: 12/17/2024 |
| TID #: N/A | Project Title: F29H85x controlSOM EVM | |
| Number: MCU144 | Rev: A | Sheet Title: controlSOM Power |
| SVN Rev: Version control disabled | Assembly Variant: 002 | Sheet: 5 of 8 |
| Drawn By: Gustavo Martinez | File: MCU144A_SOM_Power.SchDoc | Size: B |
| Engineer: Gustavo Martinez | Contact: http://www.ti.com/support | |



High Density Connector J1

High Density Connector J2

High Density Connector J3

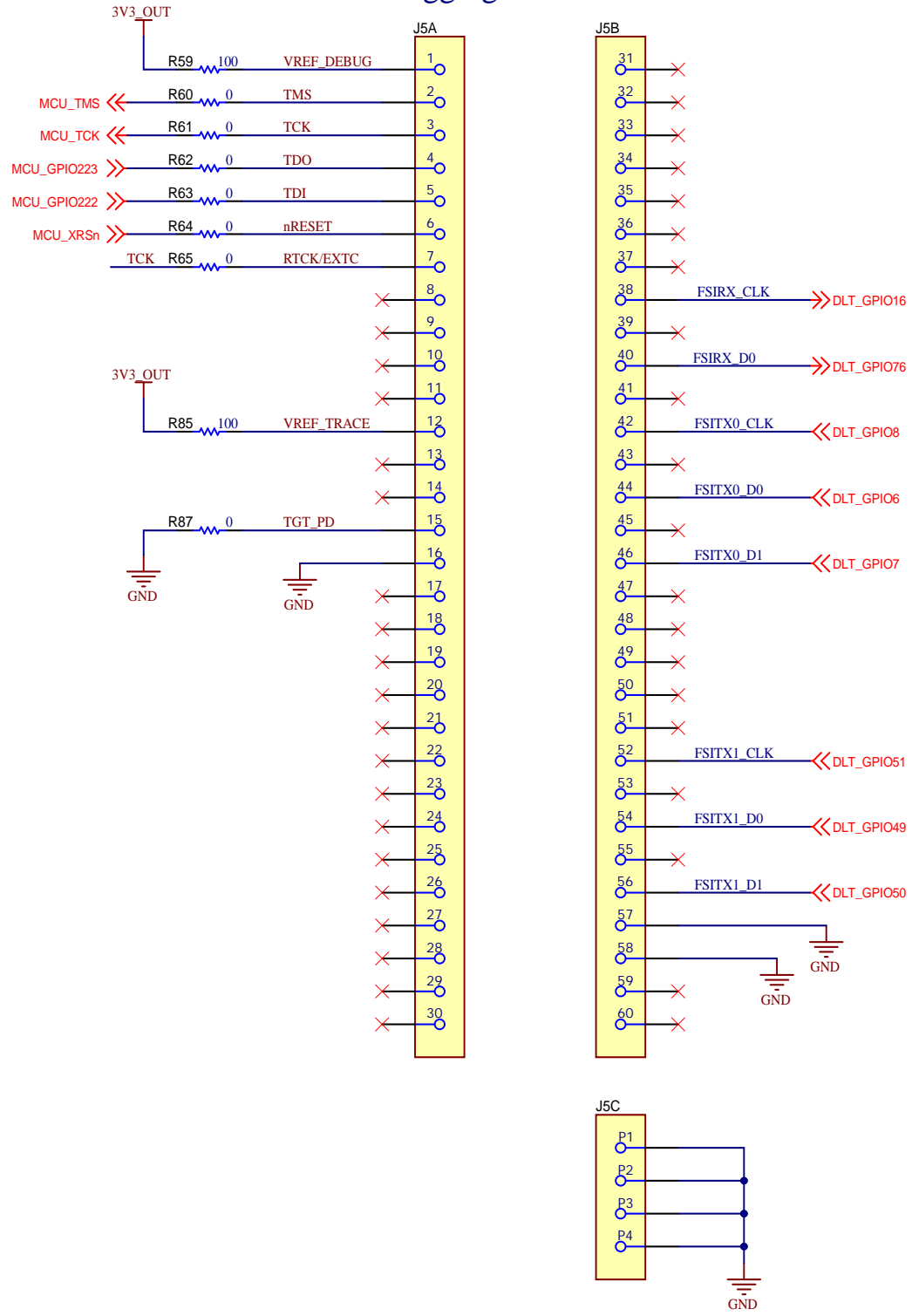


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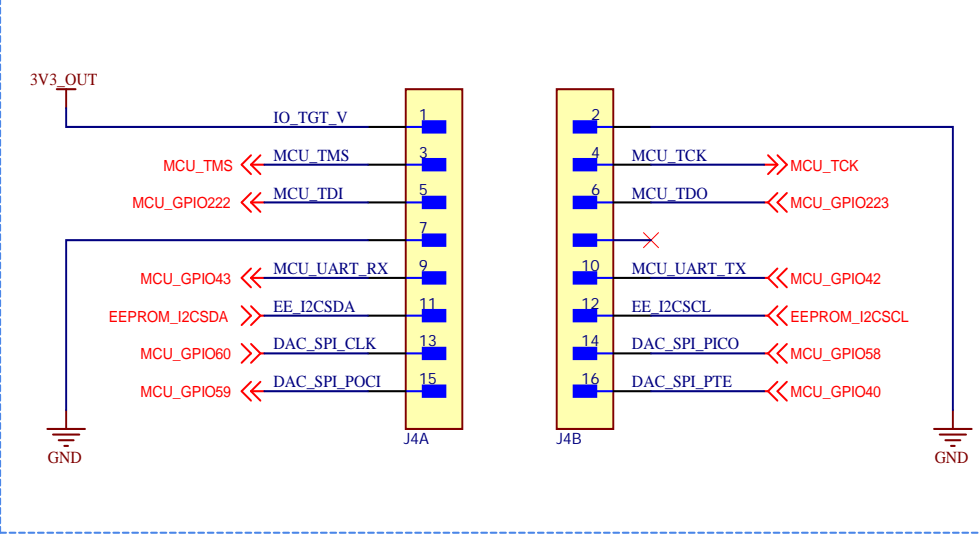
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| Orderable: F29H85X-SOM-EVM | Designed for: Public Release | Mod. Date: 7/1/2024 |
| TID #: N/A | Project Title: F29H85x controlSOM EVM | |
| Number: MCU144 | Rev: A | Sheet Title: Baseboard Connectors |
| SVN Rev: Version control disabled | Assembly Variant: 002 | Sheet: 6 of 8 |
| Drawn By: Gustavo Martinez | File: MCU144A_Baseboard_Connectors.SchDoc | Size: B |
| Engineer: Gustavo Martinez | Contact: http://www.ti.com/support | |



Data Logging and Trace Connector



Emulator Connector

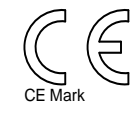


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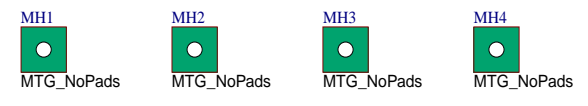
PCB Number: MCU144
PCB Rev: A

PCB LOGO
Texas Instruments



PCB LOGO
FCC disclaimer

PCB LOGO
WEEE logo



| Variant/Label Table | |
|---------------------|--|
| Variant | Variant Description |
| 001 | 25-MHz clock disabled; U2 NRST read-back disabled; see user guide for details. |
| 002 | 25-MHz clock disabled; see user guide for details. |
| 003 | Full-feature |

ZZ1
Label Assembly Note
This Assembly Note is for PCB labels only

ZZ2
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

| | | | |
|-----------------------------------|--|---------------------------|---|
| Orderable: F29H85X-SOM-EVM | Designed for: Public Release | Mod. Date: 12/31/2024 |  http://www.ti.com <small>© Texas Instruments 2024</small> |
| TID #: N/A | Project Title: F29H85x controlSOM EVM | | |
| Number: MCU144 | Rev: A | Sheet Title: EVM Hardware | |
| SVN Rev: Version control disabled | Assembly Variant: 002 | Sheet: 8 of 8 | |
| Drawn By: Gustavo Martinez | File: MCU144A_EVM_Hardware.SchDoc | Size: B | |
| Engineer: Gustavo Martinez | Contact: http://www.ti.com/support | | |

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