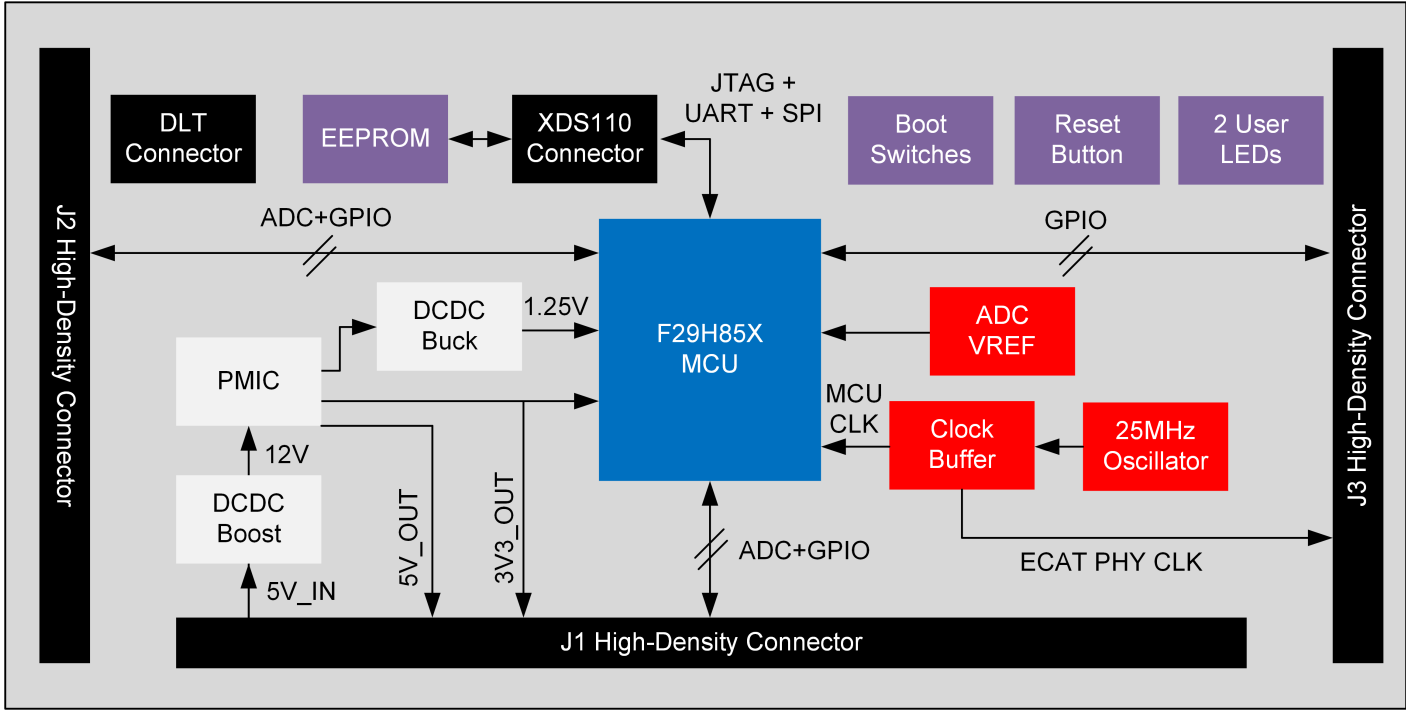


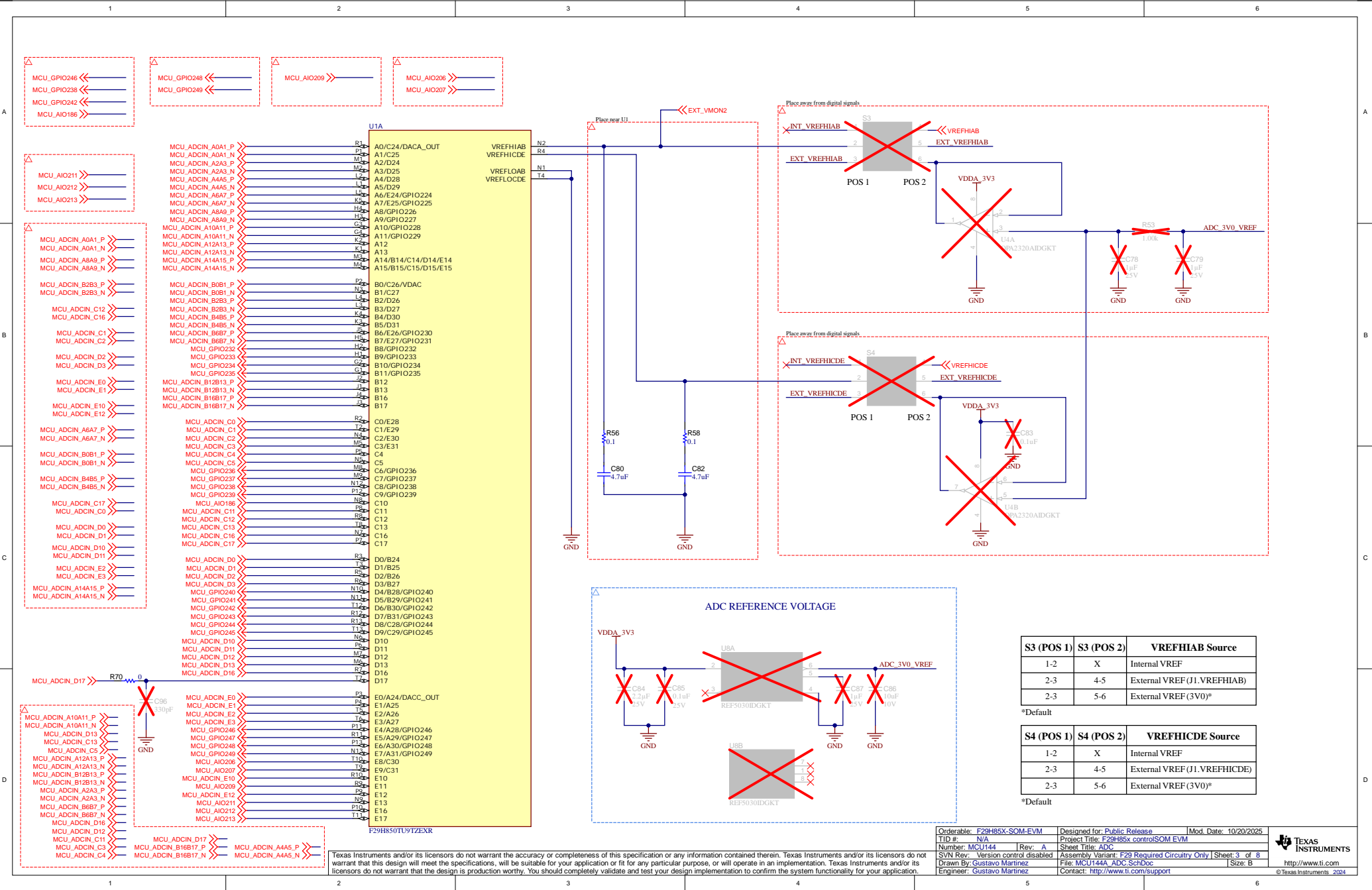
Revision History				
Rev	ECN #	Approved Date	Approved by	Notes
E1	N/A	N/A	GM	Original engineering release.
A	N/A	Oct. 17, 2024	GM	- Changed default boot mode to 11b - Changed C97 part number - Changed internal VREF connection on S3/S4 - Changed FSI connections on J5 - Removed tracking feature from U7 - Added soft start capacitor to U7 - Changed filtering scheme for ADC external reference
A	N/A	Oct. 20, 2025	GM	Updated notes in SOM power schematic; no functional change to EVM.



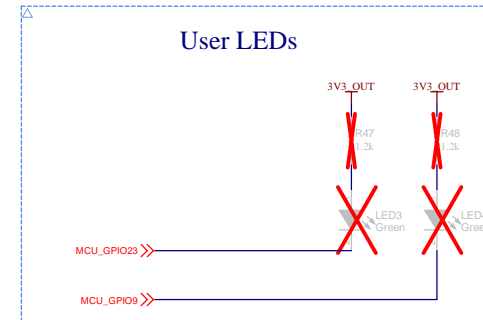
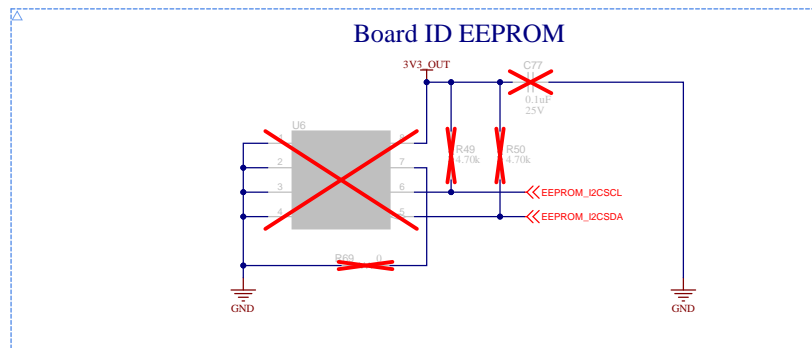
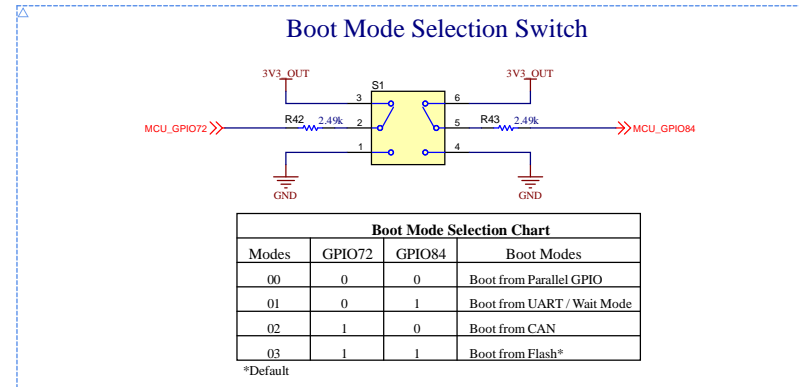
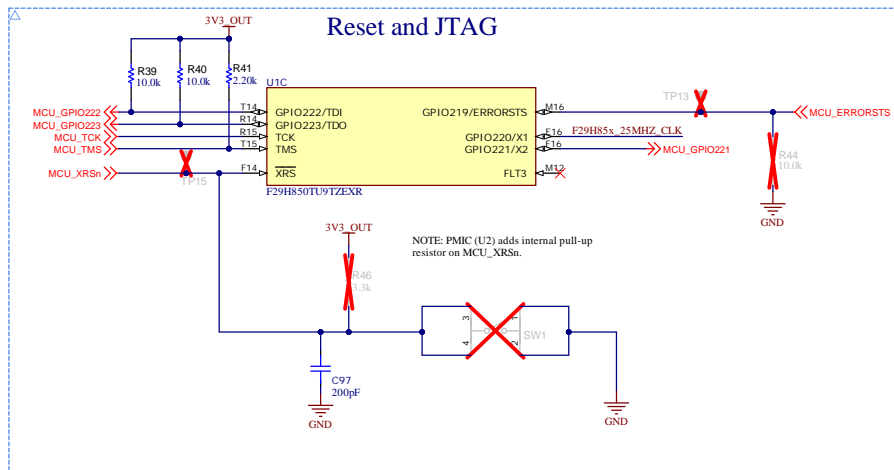
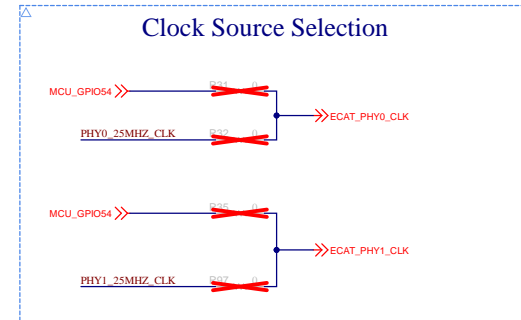
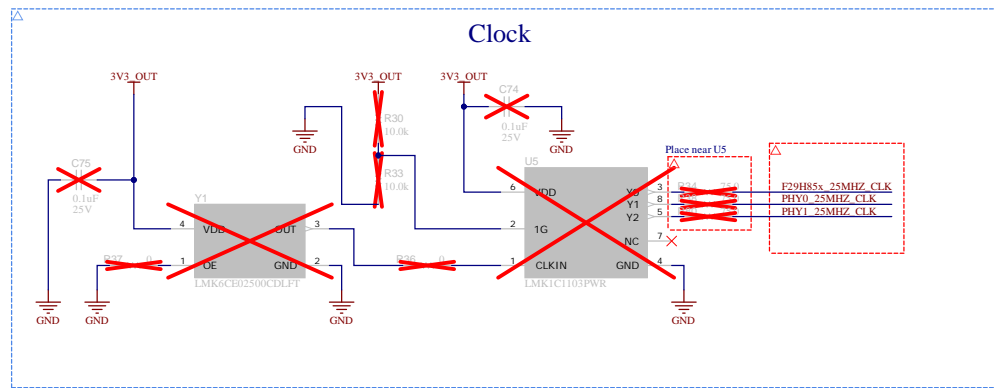
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Orderable: F29H85X-SOM-EVM	Designed for: Public Release	Mod. Date: 10/20/2025
TID #: N/A	Project Title: F29H85X control SOM EVM	
Number: MCU144	Rev: A	Sheet Title: Block Diagram
SVN Rev: Version control disabled	Assembly Variant: F29 Required Circuitry Only	Sheet: 1 of 8
Drawn By: Gustavo Martinez	File: MCU144A_Coversheet.SchDoc	Size: B
Engineer: Gustavo Martinez	Contact: http://www.ti.com/support	http://www.ti.com



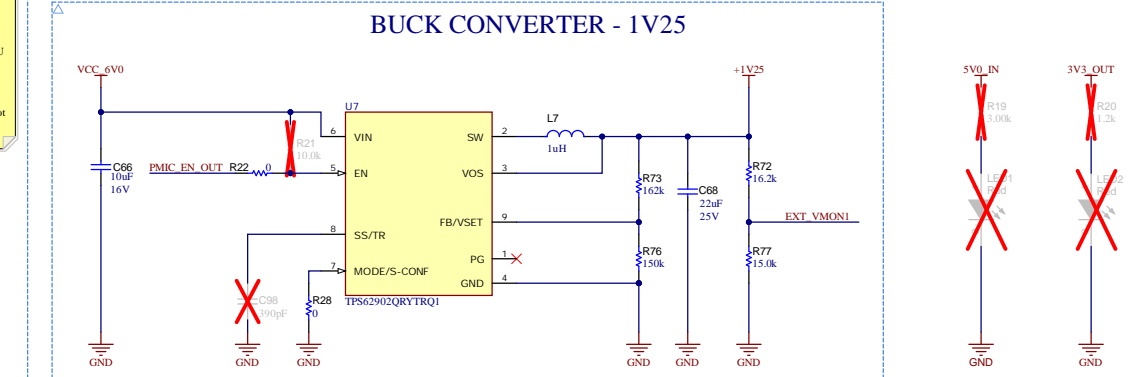
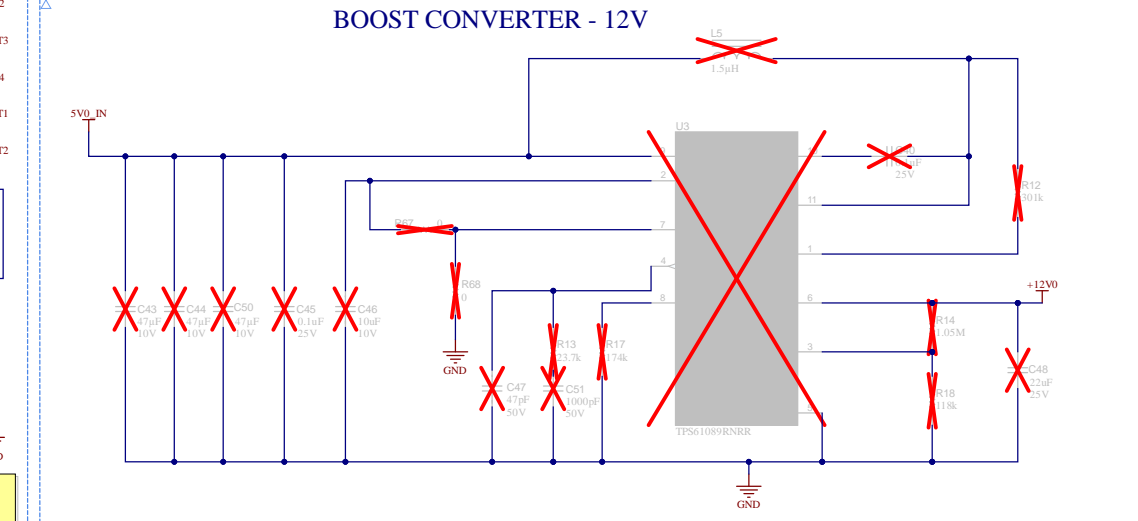
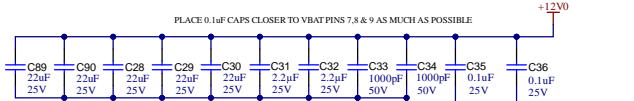
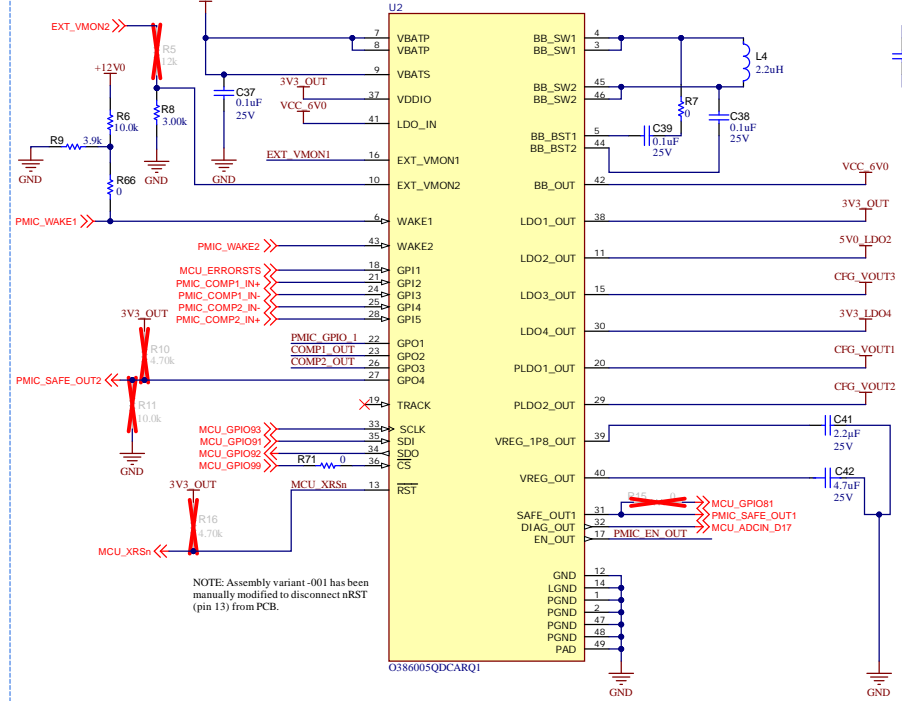


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TPS653860 PMIC



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Orderable: F29H85X-SOM-EVM	Designed for: Public Release	Mod. Date: 10/30/2025
TID #: N/A	Project Title: F29H85X controlSOM EVM	
Number: MCUI44	Rev: A	Sheet Title: controlSOM Power
SVN Rev: Version control disabled	Assembly Variant: F29 Required Circuitry Only	Sheet: 5 of 8
Drawn By: Gustavo Martinez	File: MCUI44A_SOM_Power.SchDoc	Size: B
Engineer: Gustavo Martinez	Contact: http://www.ti.com/support	

The diagram illustrates the J1A connector pinout and its connections. The central grey block represents the J1A connector with pins numbered 1 to 30. Red 'X' marks indicate connections that are not made. Blue lines show the wiring paths to various components.

MCU Connections (Left Side):

- MCU_GPIO26, MCU_GPIO27, MCU_GPIO5, MCU_GPIO4, MCU_GPIO3, MCU_GPIO2, MCU_GPIO1, MCU_GPIO0 (Pins 1-8)
- MCU_GPIO222, MCU_GPIO223, EEPROM_I2CSCL, EEPROM_I2CSDA (Pins 19-22)
- MCU_XRSn, MCU_GPIO42, MCU_GPIO43, MCU_CANrx, MCU_CANRX, MCU_GPIO61, MCU_GPIO60, MCU_GPIO59, MCU_GPIO58 (Pins 29-35)
- SOM_GPIO51, SOM_GPIO50, SOM_GPIO49, MCU_GPIO105, MCU_GPIO53, MCU_GPIO103 (Pins 51-57)

MCU Connections (Right Side):

- MCU_GPIO88, MCU_GPIO26, MCU_GPIO21, MCU_GPIO20, MCU_GPIO17, MCU_GPIO100, MCU_GPIO13, MCU_GPIO12 (Pins 9-16)
- MCU_TCK, MCU_TMS (Pins 21-22)
- PMIC_WAKE1 (Pin 30)
- MCU_GPIO46, MCU_GPIO47, MCU_GPIO232, MCU_GPIO35, MCU_GPIO36, MCU_GPIO37, MCU_GPIO212, MCU_AIO213, MCU_AIO211, MCU_AIO186, MCU_GPIO242, MCU_GPIO238, MCU_GPIO246 (Pins 39-49)

Power and Ground Connections:

- 5V0_IN (Pin 17)
- 3V3_OUT (Pin 22)
- 3V3_OUT (Pin 23)
- 5V0_OUT_CAN (Pin 40)
- GND (Pin 1)
- GND (Pin 51)
- GND (Pin 57)
- GND (Pin 49)

Resistors:

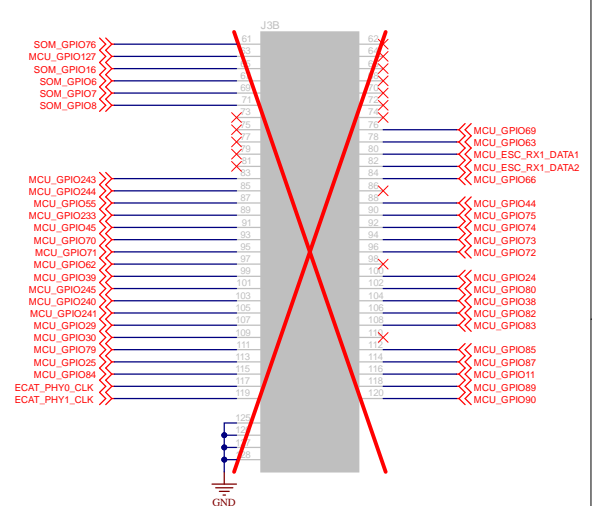
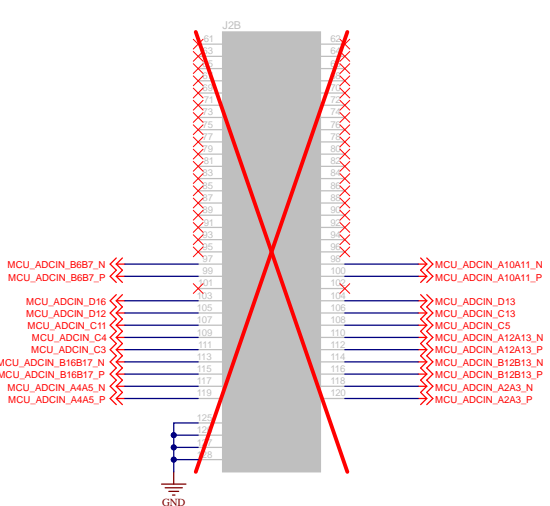
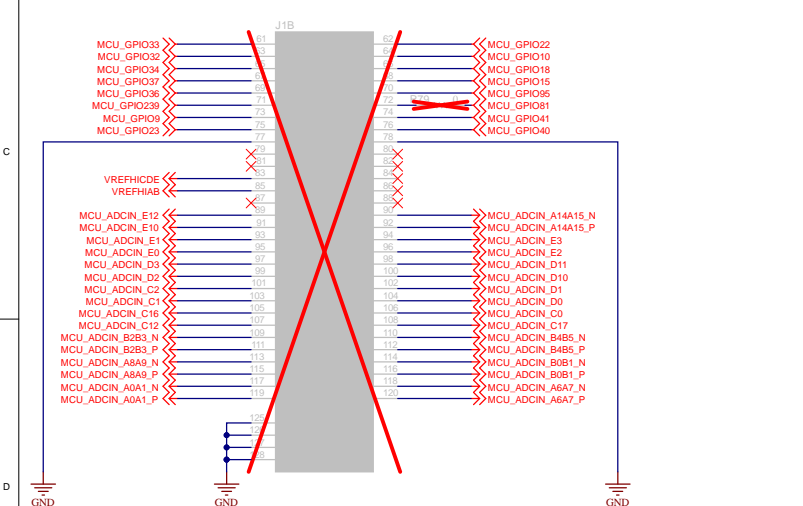
- R1: 4.70k (between 3V3_OUT and PMIC_SAFE)
- R2: 0.0k (between 5V0_OUT_CAN and PMIC_SAFE)


Pinout diagram for J2A connector showing MCU_GPIO connections. The diagram shows a central grey connector block with pins numbered 1 to 59. Red 'X' marks indicate pins that are not connected. Blue lines connect specific MCU_GPIO pins to the connector pins. The connections are:

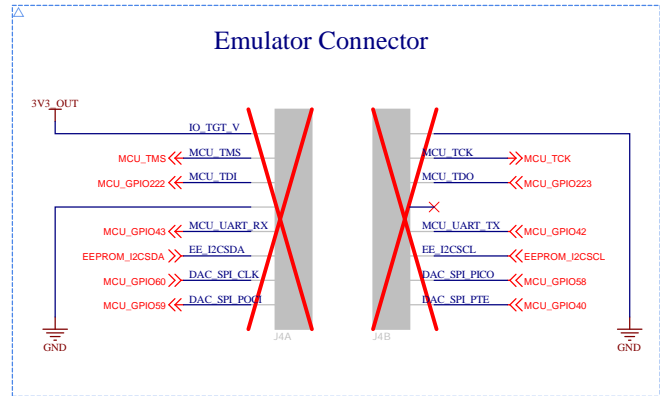
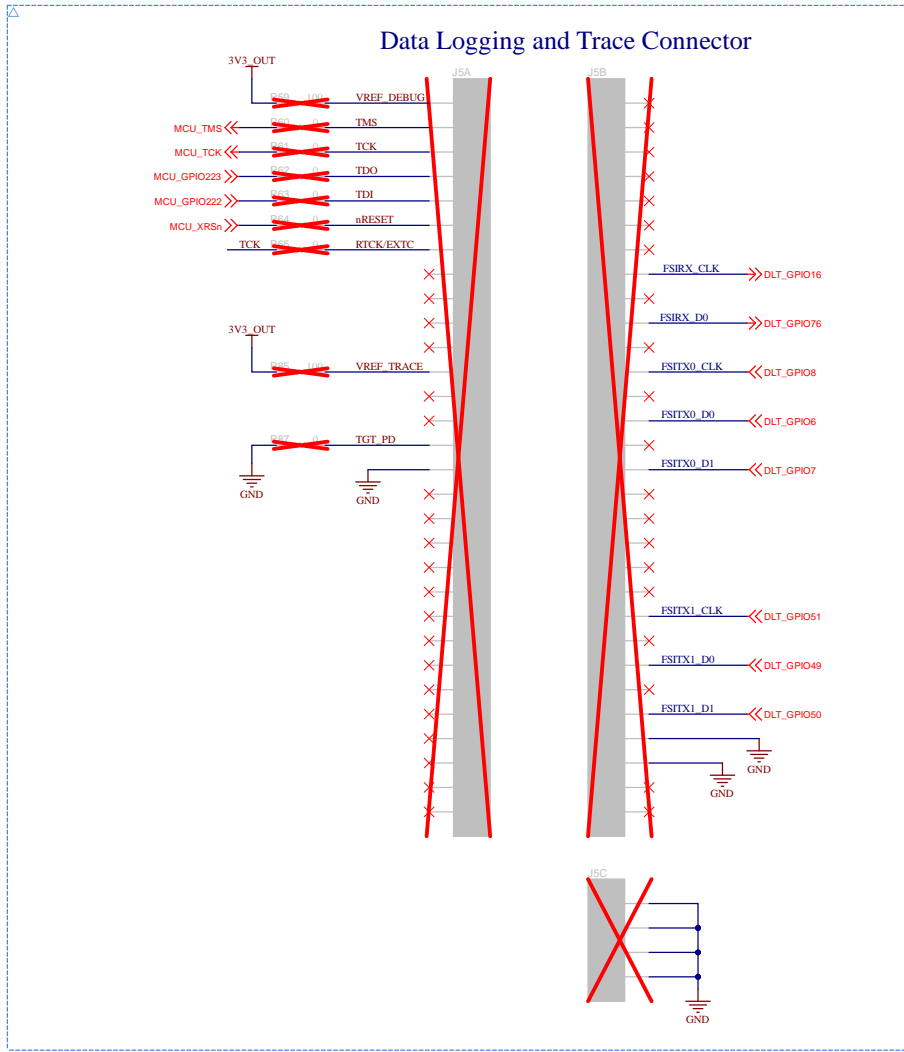
- MCU_GPIO235 to pin 21
- MCU_GPIO234 to pin 23
- MCU_AIO207 to pin 25
- MCU_AIO206 to pin 27
- MCU_AIO209 to pin 29
- MCU_GPIO48 to pin 31
- MCU_GPIO249 to pin 33
- MCU_GPIO248 to pin 35
- MCU_GPIO237 to pin 37
- MCU_GPIO236 to pin 39
- MCU_GPIO221 to pin 51
- MCU_GPIO14 to pin 53
- MCU_GPIO19 to pin 55
- MCU_GPIO57 to pin 57
- MCU_GPIO56 to pin 59

Pinout diagram for J3A connector. The diagram shows a central grey block labeled J3A with pins numbered 1 to 40 on the left and 1 to 40 on the right. A large red 'X' is drawn over the entire pinout area. Connections include:

- 5V0_IN to pin 29
- PMIC_SAFE_OUT2 to pin 28
- PMIC_COMP2_IN+ to pin 31
- PMIC_COMP2_IN- to pin 32
- PMIC_COMP1_IN+ to pin 35
- PMIC_COMP1_IN- to pin 36
- PMIC_WAKE2 to pin 40
- MCU_GPIO247 to pin 37
- Pins 12, 13, 14, and 15 connected to ground



Orderable: F29H85X-SOM-EVM	Designed for: Public Release	Mod. Date: 7/1/2014	 TEXAS INSTRUMENTS	
TID #:	N/A	Project Title: F29H85X controlSOM EVM		
Model:	MCU144A	Rev: A		Sheet Title: Baseband Connectors
S/N:	Version control disabled			
Drawn By:	Gustavo Martinez			Assembly Variant: F29 Required Circuitry Only Sheet: 6 of 8
Engineer:	Gustavo Martinez		File: MCU144A_Baseband_Connectors_SchDoc Size: B	
http://www.ti.com/support			http://www.ti.com © Texas Instruments 2014	



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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: Emulation Connectors
SVN Rev: Version control disabled	Assembly Variant: F29 Required Circuitry Only	Sheet: 7 of 8
Drawn By: Gustavo Martinez	File: MCU144A_Emulation_Connectors.SchDoc	Size: B
Engineer: Gustavo Martinez	Contact: http://www.ti.com/support	



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~~

This Assembly Note is for PCB labels only

772 ~~XXXXXXXXXX~~
These assemblies are ESD sensitive, ESD precautions shall be observed.

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

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

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Orderable: F29H85X-SOM-EVM		Designed for: Public Release		Mod. Date: 12/31/2024	
TID: N/A		Project: F29H85X-controlSOM		 TEXAS INSTRUMENTS	
Number: MCU144		Rev: A			
S/N: Version control disabled		Sheet Title: EVM Hardware			
Drawn By: Gustavo Martinez		Assembly Variant: F29 Required Circuitry Only			
Engineer: Gustavo Martinez		File: MCU144A_EVM Hardware_SchDoc		Size: B	
		Contact: http://www.ti.com/support		http://www.ti.com © Texas Instruments 2024	

