

IO LINK/BREAKOUT BOARD

TMDS64DC01EVM/TMDS243DC01EVM

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REV	A
VER	1.0

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Size	Variant Name = PROC102A(001) TMDS64DC01EVM	Rev
C		E1
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REVISION HISTORY

REV #	VER #	DATE	DESCRIPTION OF CHANGES	AUTHOR	REVIEWED BY	APPROVED BY
A	0.1	09-06-2021	Schmeatic Imported from REV E1	Mistral Design Team	RAKESH RAJDEV	AJIT MB
A	1.0	09-06-2021	Added Diode at Base of transistor for Voltage Spike Protection on TX line of IO Link PHY Changed Resistors R78 R79 R84 R85 R90 R91 R96 R97 to 240E Baselined	Mistral Design Team	RAKESH RAJDEV	AJIT MB

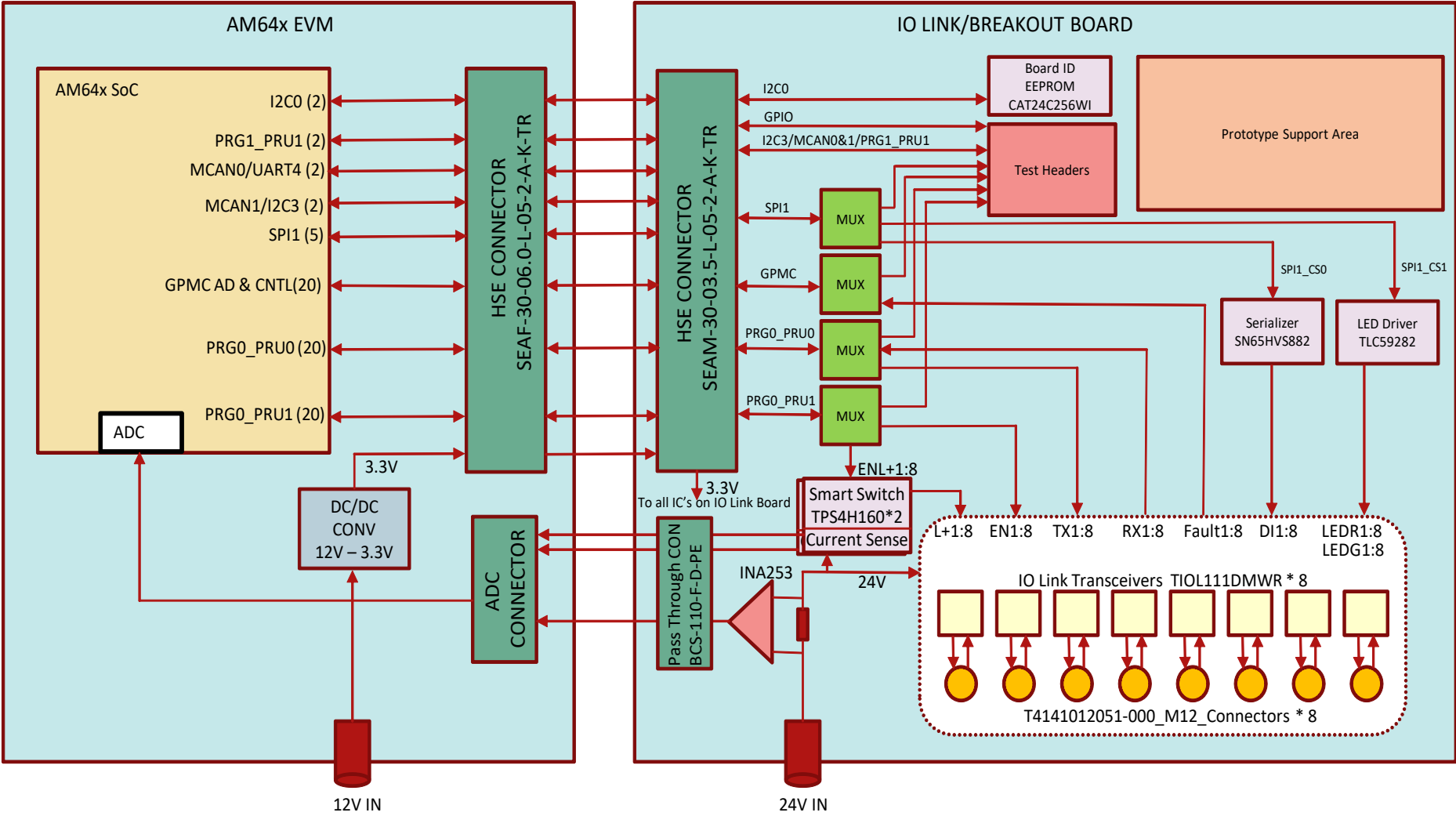
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Title REV HISTORY

Size	Variant Name = PROC102A(001) TMD564DC01EVM	Rev
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BLOCK DIAGRAM



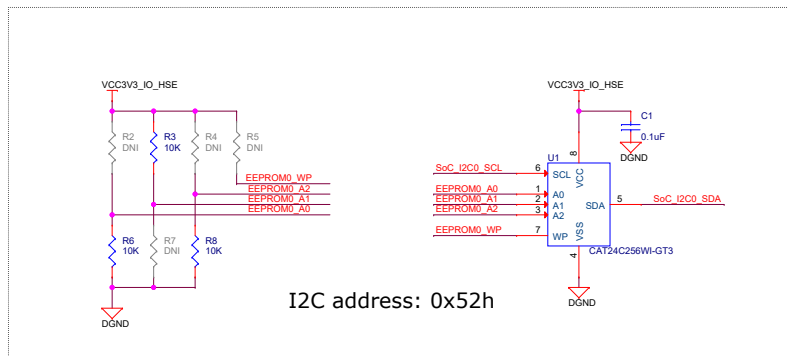
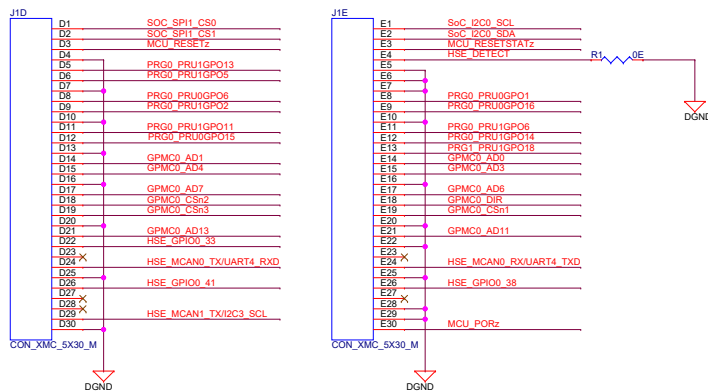
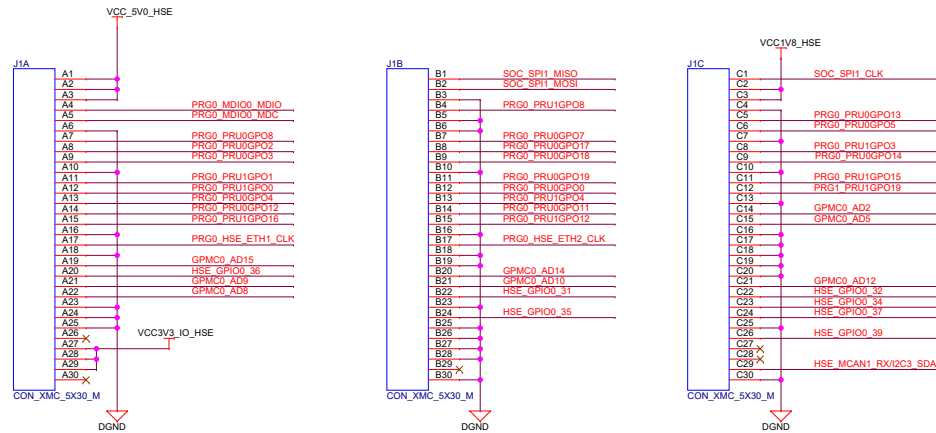
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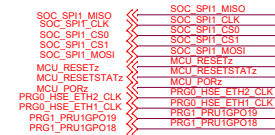
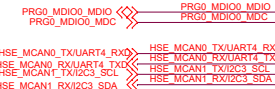
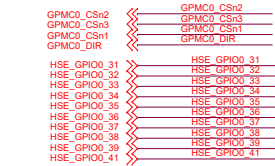
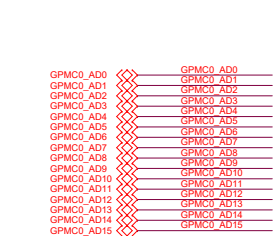
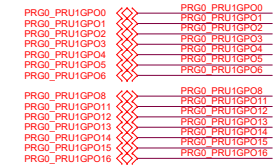
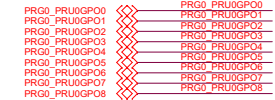
Title BLOCK DIAGRAM

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HSE CONNECTOR



Off Page Connections



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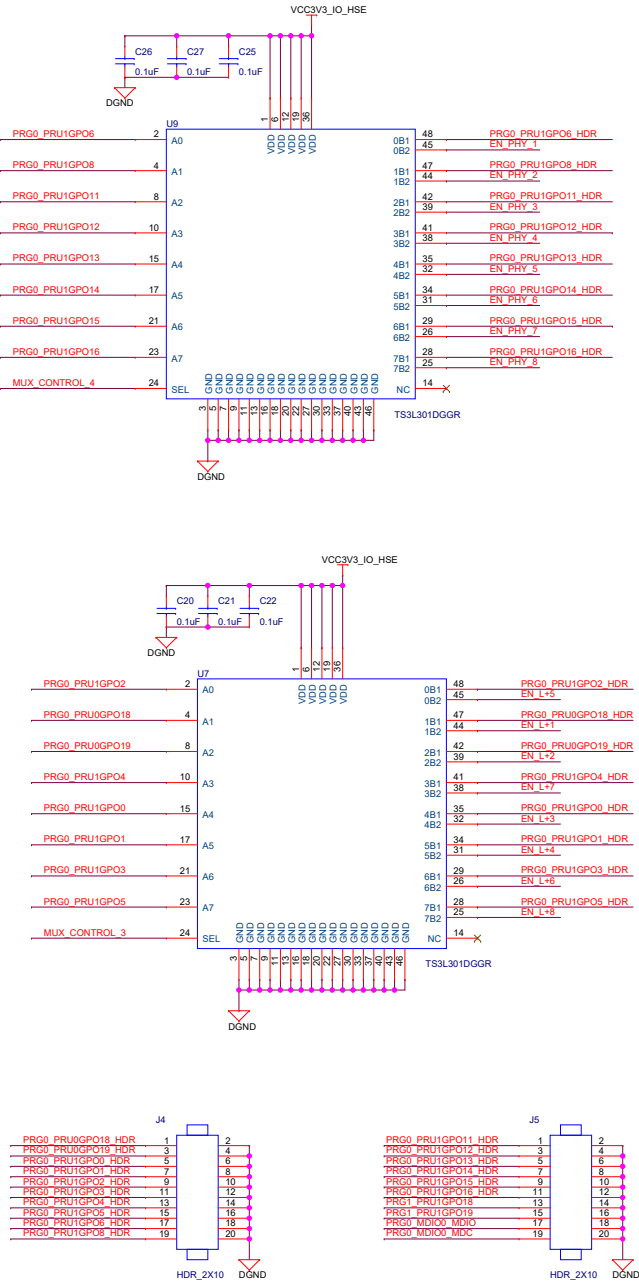
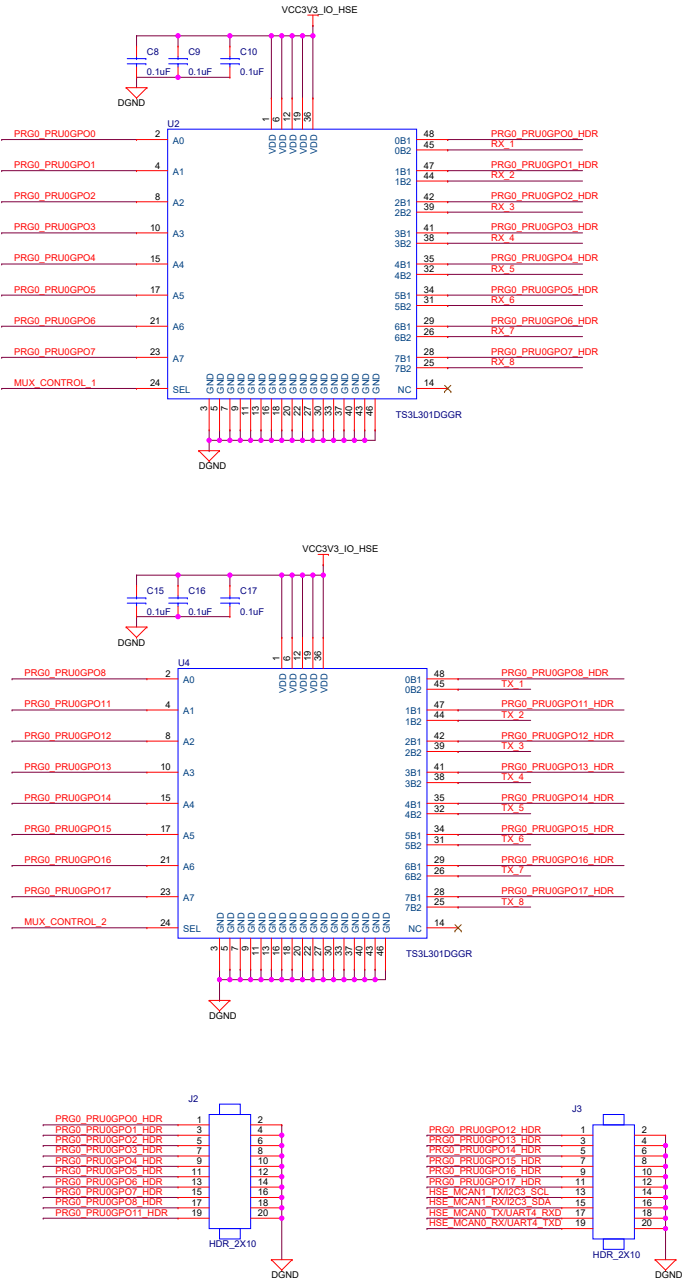
Title HSE CONNECTOR

Size Variant Name = PROC102A(001) TMD564DC01EVM

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Rev E1

PRG SIGNALS



Off Page Connections

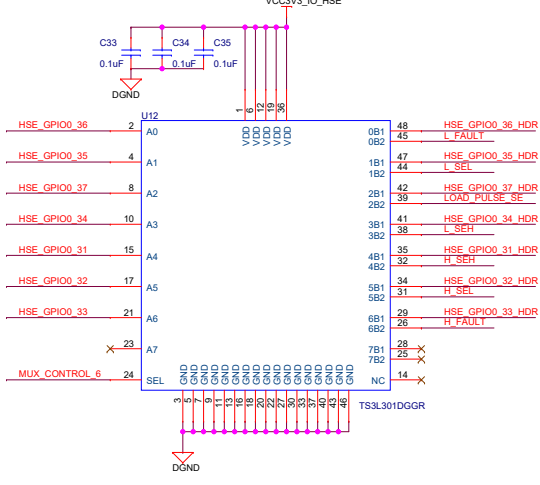
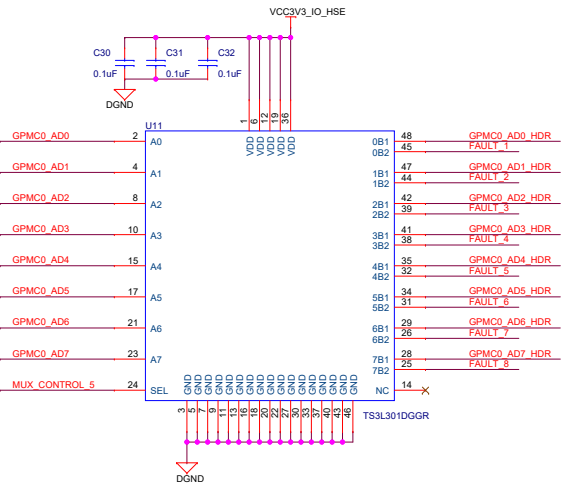
PRG0_PRU0GPO0	PRG0_PRU0GPO1
PRG0_PRU0GPO1	PRG0_PRU0GPO2
PRG0_PRU0GPO2	PRG0_PRU0GPO3
PRG0_PRU0GPO3	PRG0_PRU0GPO4
PRG0_PRU0GPO4	PRG0_PRU0GPO5
PRG0_PRU0GPO5	PRG0_PRU0GPO6
PRG0_PRU0GPO6	PRG0_PRU0GPO7
PRG0_PRU0GPO8	PRG0_PRU0GPO9
PRG0_PRU0GPO9	PRG0_PRU0GPO10
PRG0_PRU0GPO10	PRG0_PRU0GPO11
PRG0_PRU0GPO11	PRG0_PRU0GPO12
PRG0_PRU0GPO12	PRG0_PRU0GPO13
PRG0_PRU0GPO13	PRG0_PRU0GPO14
PRG0_PRU0GPO14	PRG0_PRU0GPO15
PRG0_PRU0GPO15	PRG0_PRU0GPO16
PRG0_PRU0GPO16	PRG0_PRU0GPO17
PRG0_PRU0GPO18	PRG0_PRU0GPO19
PRG0_PRU1GPO0	PRG0_PRU1GPO1
PRG0_PRU1GPO1	PRG0_PRU1GPO2
PRG0_PRU1GPO2	PRG0_PRU1GPO3
PRG0_PRU1GPO3	PRG0_PRU1GPO4
PRG0_PRU1GPO4	PRG0_PRU1GPO5
PRG0_PRU1GPO6	PRG0_PRU1GPO7
PRG0_PRU1GPO8	PRG0_PRU1GPO9
PRG0_PRU1GPO9	PRG0_PRU1GPO10
PRG0_PRU1GPO11	PRG0_PRU1GPO12
PRG0_PRU1GPO12	PRG0_PRU1GPO13
PRG0_PRU1GPO13	PRG0_PRU1GPO14
PRG0_PRU1GPO14	PRG0_PRU1GPO15
PRG0_PRU1GPO15	PRG0_PRU1GPO16
PRG0_PRU1GPO17	PRG0_PRU1GPO18
PRG0_PRU1GPO18	PRG0_PRU1GPO19
PRG0_MDIO0 MDIO	PRG0_MDIO0 MDC
PRG0_MDIO0 MDC	PRG1_MDIO0 MDIO
PRG1_MDIO0 MDIO	PRG1_MDIO0 MDC
HSE_MCAN1_RX12C3_SDA	HSE_MCAN1_RX12C3_SCL
HSE_MCAN1_TX12C3_SDA	HSE_MCAN1_TX12C3_SCL
HSE_MCAN0_RXUART4_RXD	HSE_MCAN0_RXUART4_TXD
HSE_MCAN0_TXUART4_RXD	HSE_MCAN0_TXUART4_TXD
RX_1	RX_2
RX_2	RX_3
RX_3	RX_4
RX_4	RX_5
RX_5	RX_6
RX_6	RX_7
RX_7	RX_8
TX_1	TX_2
TX_2	TX_3
TX_3	TX_4
TX_4	TX_5
TX_5	TX_6
TX_6	TX_7
TX_7	TX_8
EN_L+1	EN_L+2
EN_L+2	EN_L+3
EN_L+3	EN_L+4
EN_L+4	EN_L+5
EN_L+5	EN_L+6
EN_L+6	EN_L+7
EN_L+7	EN_L+8
EN_PHY_1	EN_PHY_2
EN_PHY_2	EN_PHY_3
EN_PHY_3	EN_PHY_4
EN_PHY_4	EN_PHY_5
EN_PHY_5	EN_PHY_6
EN_PHY_6	EN_PHY_7
EN_PHY_7	EN_PHY_8
MUX_CONTROL_1	MUX_CONTROL_2
MUX_CONTROL_2	MUX_CONTROL_3
MUX_CONTROL_3	MUX_CONTROL_4

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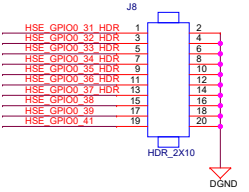
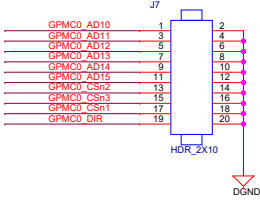
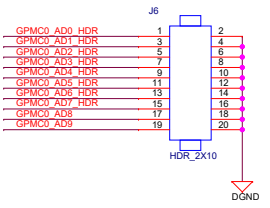
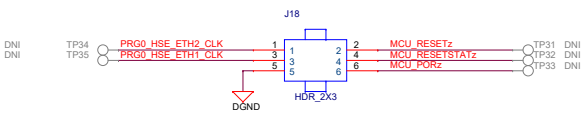
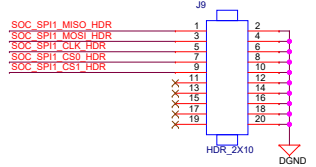
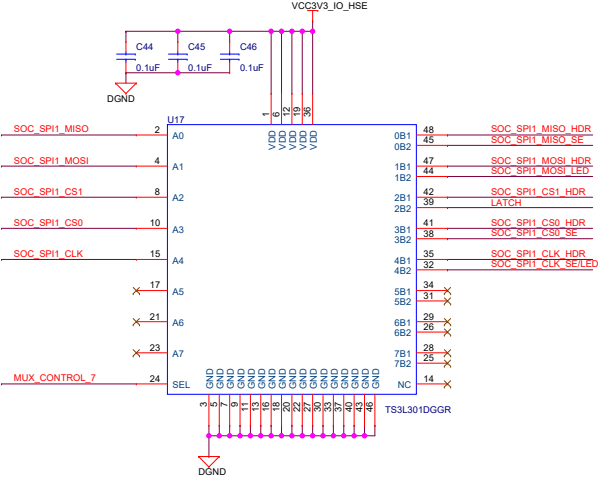


Title		PRG SIGNALS	
Size	Variant Name = PROC102A(001) TMS64DC01EVM	Rev	
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GPMC SIGNALS



PERIPHERAL_COMMUNICATION_SIGNALS



Off Page Connections

GPMC0_AD0	GPMC0_AD0
GPMC0_AD1	GPMC0_AD1
GPMC0_AD2	GPMC0_AD2
GPMC0_AD3	GPMC0_AD3
GPMC0_AD4	GPMC0_AD4
GPMC0_AD5	GPMC0_AD5
GPMC0_AD6	GPMC0_AD6
GPMC0_AD7	GPMC0_AD7
GPMC0_AD8	GPMC0_AD8
GPMC0_AD9	GPMC0_AD9
GPMC0_AD10	GPMC0_AD10
GPMC0_AD11	GPMC0_AD11
GPMC0_AD12	GPMC0_AD12
GPMC0_AD13	GPMC0_AD13
GPMC0_AD14	GPMC0_AD14
GPMC0_AD15	GPMC0_AD15
GPMC0_CS#2	GPMC0_CS#2
GPMC0_CS#3	GPMC0_CS#3
GPMC0_CS#1	GPMC0_CS#1
GPMC0_DIR	GPMC0_DIR
FAULT_1	FAULT_1
FAULT_2	FAULT_2
FAULT_3	FAULT_3
FAULT_4	FAULT_4
FAULT_5	FAULT_5
FAULT_6	FAULT_6
FAULT_7	FAULT_7
FAULT_8	FAULT_8
MUX_CONTROL_5	MUX_CONTROL_5
MUX_CONTROL_6	MUX_CONTROL_6
MUX_CONTROL_7	MUX_CONTROL_7
LOAD_PULSE_SE	LOAD_PULSE_SE
H_SEL	H_SEL
H_FAULT	H_FAULT
L_SEL	L_SEL
L_FAULT	L_FAULT
SOC_SPI1_MISO	SOC_SPI1_MISO
SOC_SPI1_CLK	SOC_SPI1_CLK
SOC_SPI1_CS#0	SOC_SPI1_CS#0
SOC_SPI1_CS#1	SOC_SPI1_CS#1
SOC_SPI1_MISO_SE	SOC_SPI1_MISO_SE
SOC_SPI1_CS#0_SE	SOC_SPI1_CS#0_SE
LOAD_PULSE_SE	LOAD_PULSE_SE
SOC_SPI1_MOSI_LED	SOC_SPI1_MOSI_LED
SOC_SPI1_CLK_SELED	SOC_SPI1_CLK_SELED
HSE_GPIO0_31	HSE_GPIO0_31
HSE_GPIO0_32	HSE_GPIO0_32
HSE_GPIO0_33	HSE_GPIO0_33
HSE_GPIO0_34	HSE_GPIO0_34
HSE_GPIO0_35	HSE_GPIO0_35
HSE_GPIO0_36	HSE_GPIO0_36
HSE_GPIO0_37	HSE_GPIO0_37
HSE_GPIO0_38	HSE_GPIO0_38
HSE_GPIO0_39	HSE_GPIO0_39
HSE_GPIO0_40	HSE_GPIO0_40
HSE_GPIO0_41	HSE_GPIO0_41
PRG0_HSE_ETH1_CLK	PRG0_HSE_ETH1_CLK
PRG0_HSE_ETH2_CLK	PRG0_HSE_ETH2_CLK
MCU_RESET#	MCU_RESET#
MCU_RESETSTAT#	MCU_RESETSTAT#
MCU_POR#	MCU_POR#

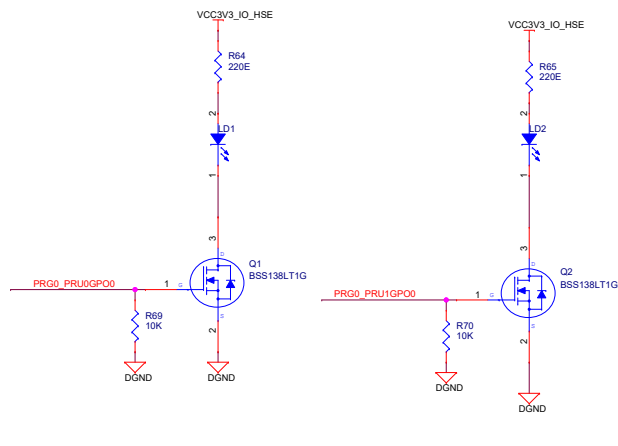
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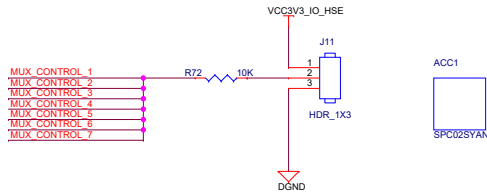
Title			GPMC & PERIPHERAL COMMUNICATION SIGNALS
Size	Variant Name = PROC102A(001) TMS64DC01EVM	Rev	E1
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LED'S

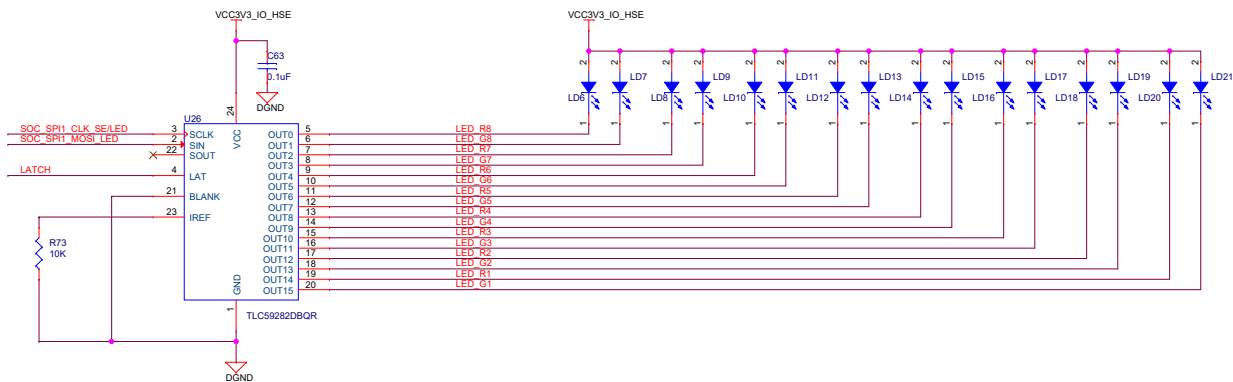
PRG0 & POWER_LED



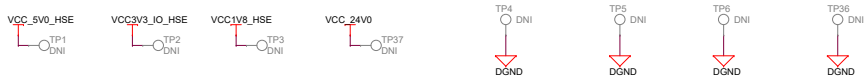
MUX SELECTION



SEL	INPUT/OUTPUT An	FUNCTION	
		An=nB1	HEADER SIDE IS ACTIVATED
L	nB1	An=nB1	HEADER SIDE IS ACTIVATED
H	nB2	An=nB2	IO LINK IS ACTIVATED



Test Points



Off Page Connections

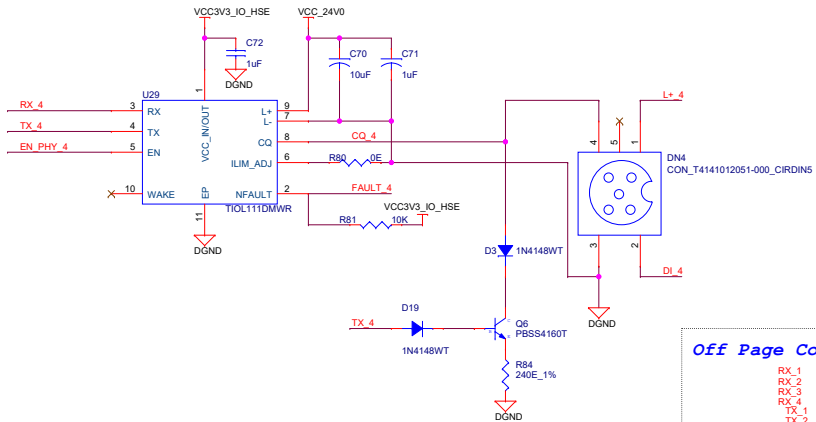
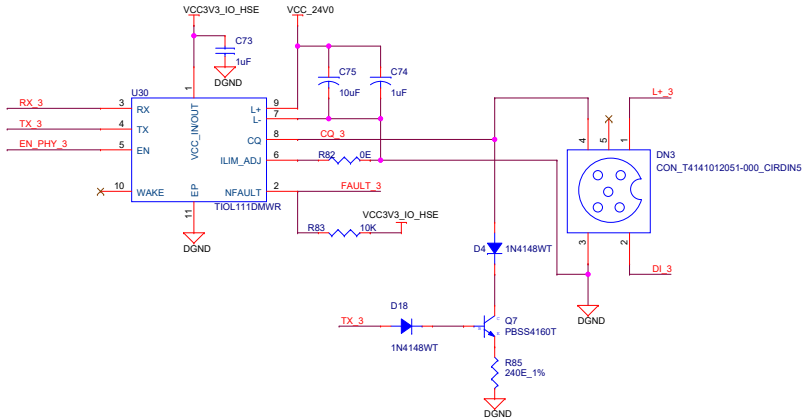
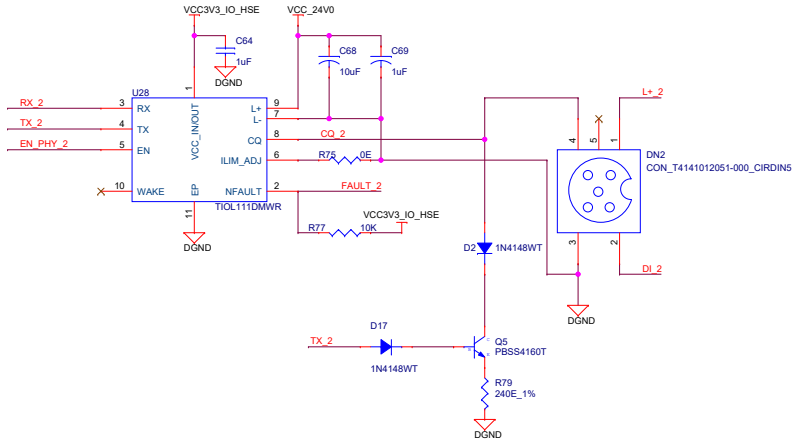
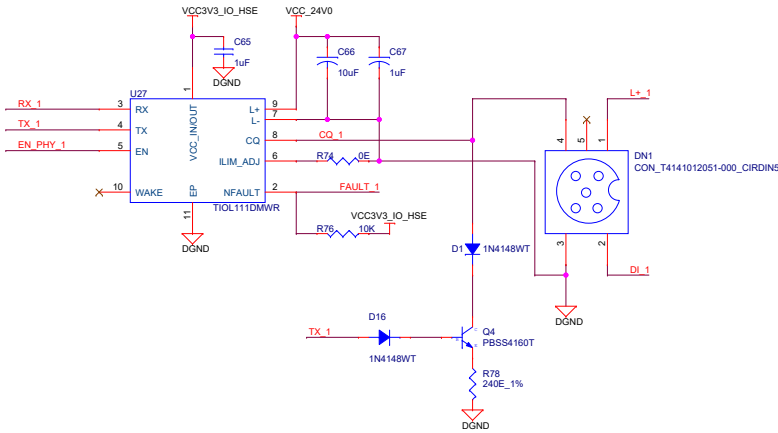
SOC_SPI1_MOSI_LED	SOC_SPI1_MOSI_LED
SOC_SPI1_CLK_SEALED	SOC_SPI1_CLK_SEALED
LATCH	LATCH
PRG0_PRU0GPO0	PRG0_PRU0GPO0
PRG0_PRU1GPO0	PRG0_PRU1GPO0
MUX_CONTROL_1	MUX_CONTROL_1
MUX_CONTROL_2	MUX_CONTROL_2
MUX_CONTROL_3	MUX_CONTROL_3
MUX_CONTROL_4	MUX_CONTROL_4
MUX_CONTROL_5	MUX_CONTROL_5
MUX_CONTROL_6	MUX_CONTROL_6
MUX_CONTROL_7	MUX_CONTROL_7

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Title LED		Rev
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C		
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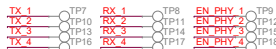
IO LINK TRANCIEVER[1:4]



Off Page Connections

RX_1	<<	RX_1
RX_2	<<	RX_2
RX_3	<<	RX_3
RX_4	<<	RX_4
TX_1	<<	TX_1
TX_2	<<	TX_2
TX_3	<<	TX_3
TX_4	<<	TX_4
DI_1	<<	DI_1
DI_2	<<	DI_2
DI_3	<<	DI_3
DI_4	<<	DI_4
FAULT_1	<<	FAULT_1
FAULT_2	<<	FAULT_2
FAULT_3	<<	FAULT_3
FAULT_4	<<	FAULT_4
L+ 4	<<	L+ 4
L+ 3	<<	L+ 3
L+ 1	<<	L+ 1
L+ 2	<<	L+ 2
EN_PHY_1	<<	EN_PHY_1
EN_PHY_2	<<	EN_PHY_2
EN_PHY_3	<<	EN_PHY_3
EN_PHY_4	<<	EN_PHY_4

Test Points



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Title IO LINK TRANCIEVER[1:4]

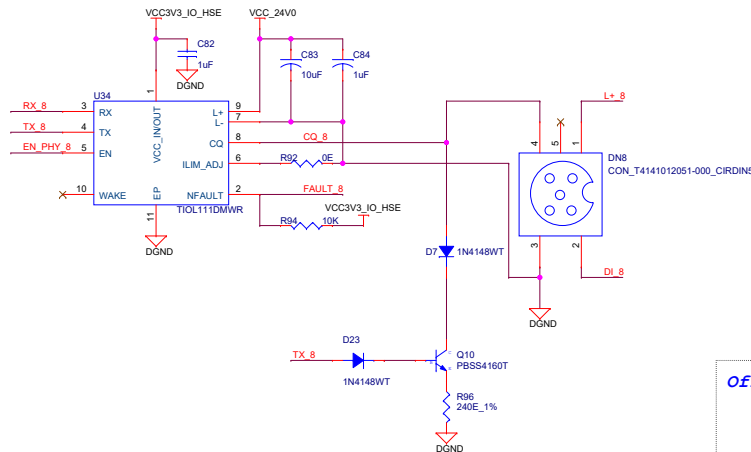
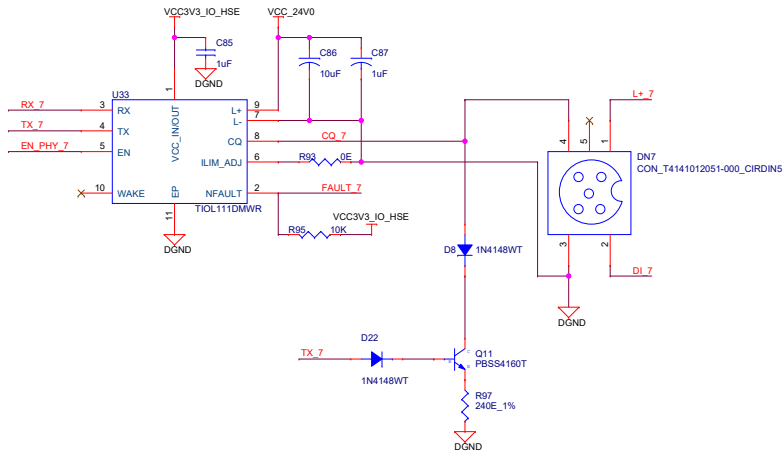
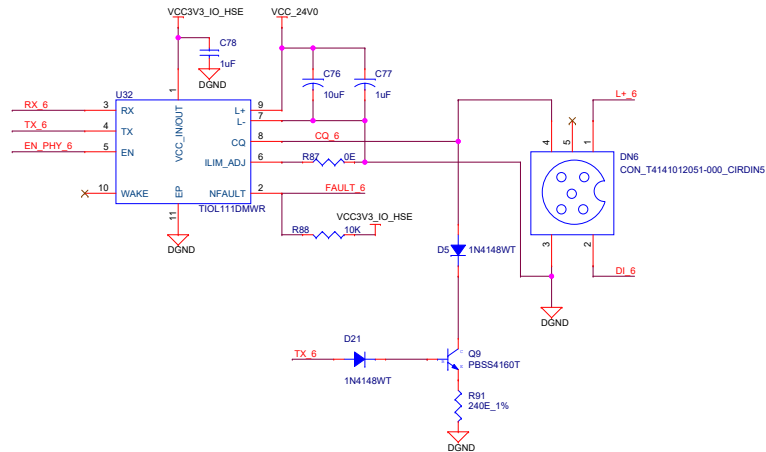
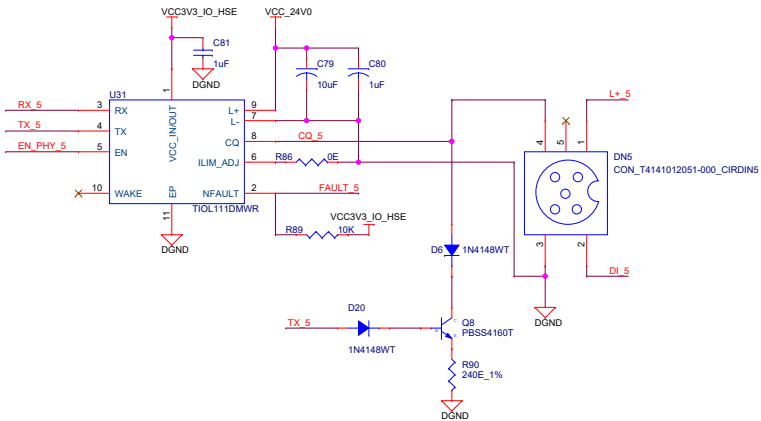
Size Variant Name = PROC102A(001) TMS64DC01EVM

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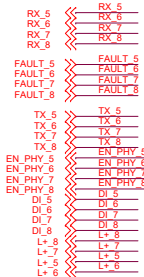
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Rev E1

IO LINK TRANCIEVER[5:8]



Off Page Connections



Test Points



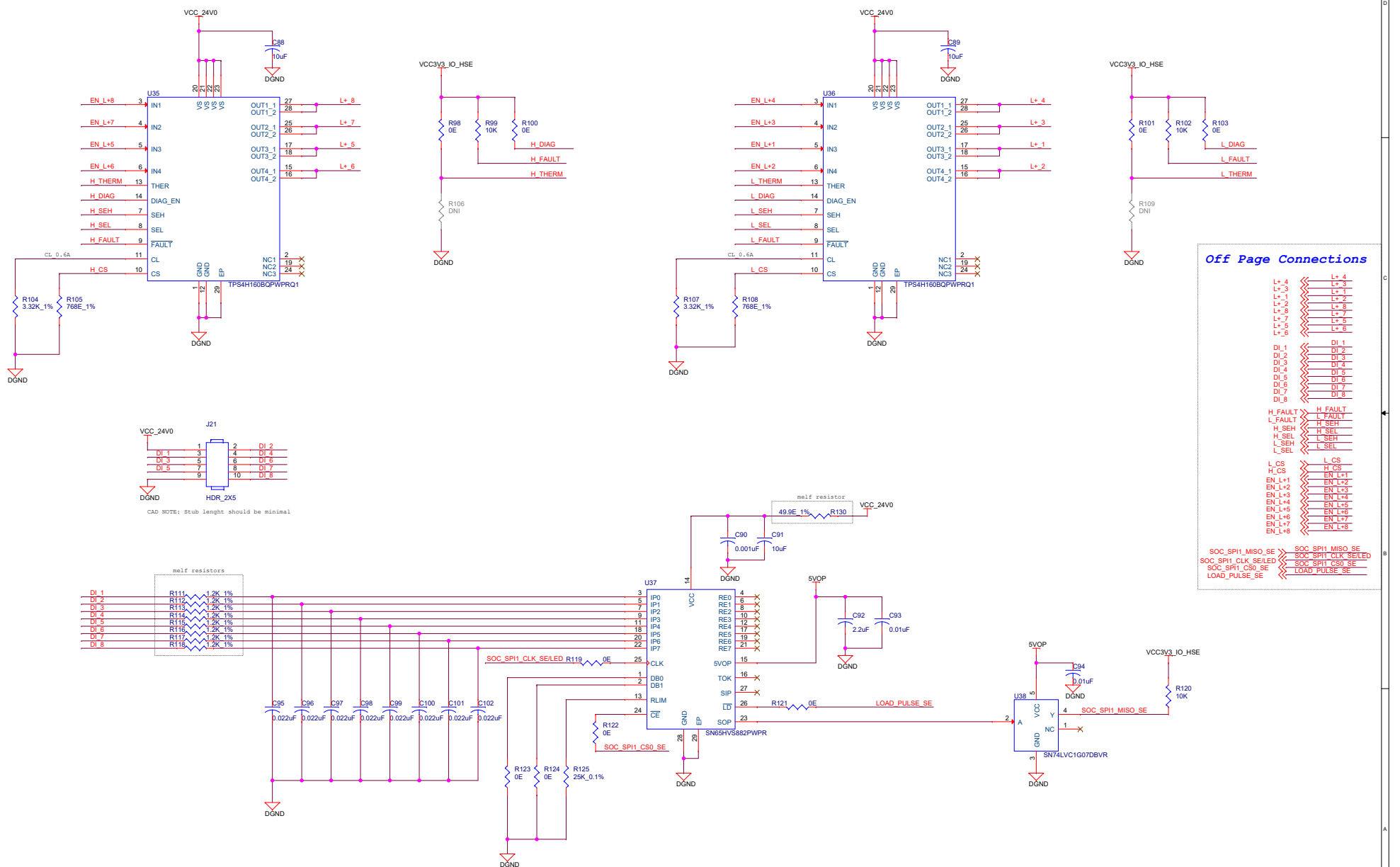
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Title IO LINK TRANCIEVER[5:8]

Size	Variant Name = PROC102A(001) TMS64DC01EVM	Rev
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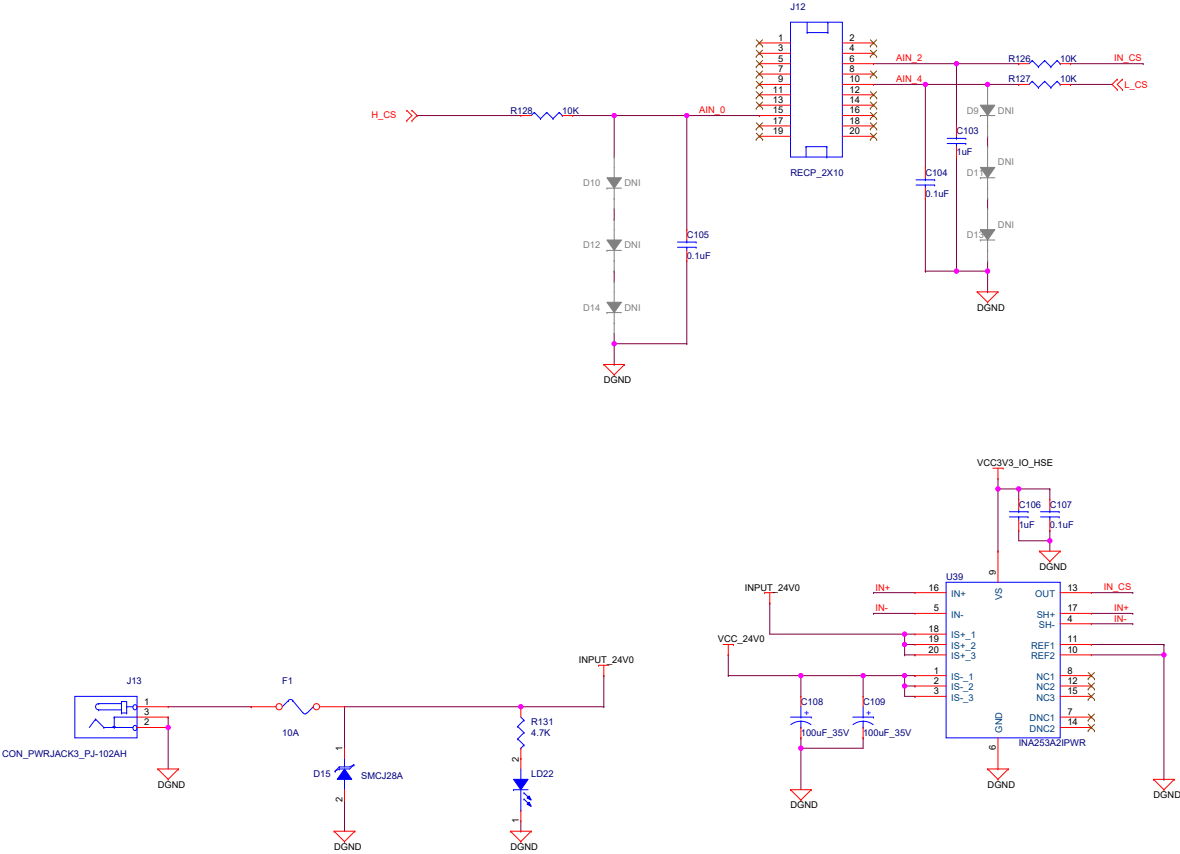
SMART SWITCH



Off Page Connections

L+ 4	L+ 4
L+ 3	L+ 3
L+ 2	L+ 2
L+ 1	L+ 1
L+ 8	L+ 8
L+ 7	L+ 7
L+ 6	L+ 6
DI 1	DI 1
DI 2	DI 2
DI 3	DI 3
DI 4	DI 4
DI 5	DI 5
DI 6	DI 6
DI 7	DI 7
DI 8	DI 8
H_FAULT	H_FAULT
L_FAULT	L_FAULT
H_SEH	H_SEH
H_SEL	H_SEL
L_SEH	L_SEH
L_SEL	L_SEL
L_CS	L_CS
H_CS	H_CS
EN_L+1	EN_L+1
EN_L+2	EN_L+2
EN_L+3	EN_L+3
EN_L+4	EN_L+4
EN_L+5	EN_L+5
EN_L+6	EN_L+6
EN_L+7	EN_L+7
EN_L+8	EN_L+8
SOC_SPI1_MISO_SE	SOC_SPI1_MISO_SE
SOC_SPI1_CLK_SE/LED	SOC_SPI1_CLK_SE/LED
SOC_SPI1_CS0_SE	SOC_SPI1_CS0_SE
LOAD_PULSE_SE	LOAD_PULSE_SE

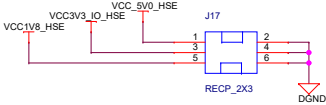
POWER AND ADC SECTION



Off Page Connections



POWER SUPPLY_HEADER



CAD NOTE: PLACE THIS HEADER NEAR PROTOTYPE SUPPORT AREA

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Title POWER AND ADC SECTION

Size Variant Name = PROC102A(001) TMD564DC01EVM

Date: Wednesday, September 28, 2021

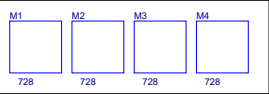
Sheet 11 of 12

Rev

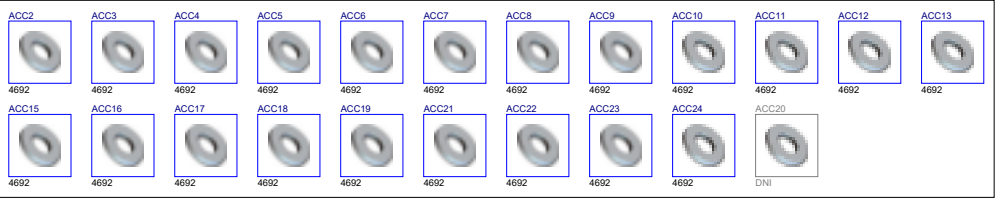
E1

HARDWARE SCHEMATICS

RUBBER FEET



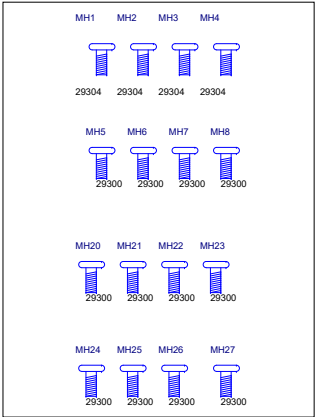
WASHER's



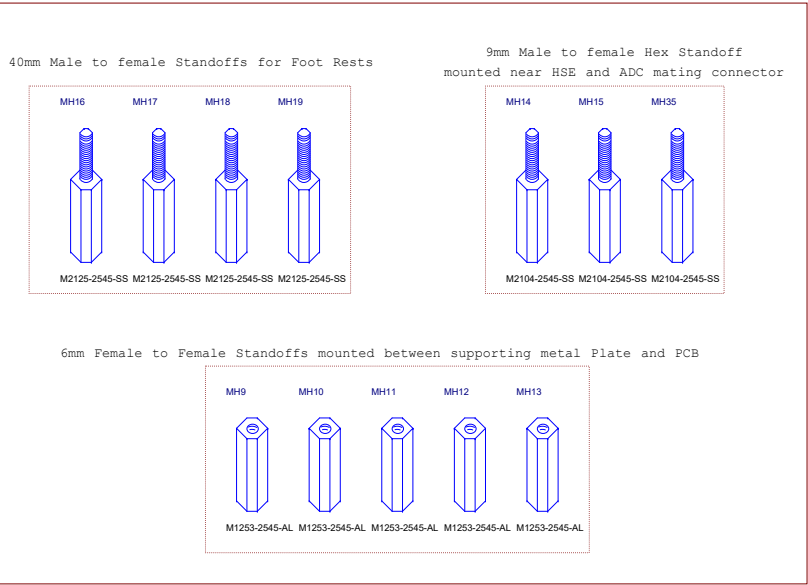
ASSEMBLY NOTES

- 1. All MSL components should be baked as per JEDEC standard.
- 2. PCB should be baked at 120 degree for 8 hours.
- 3. Board assembly must comply with workmanship standards. IPC-A-610 Class 2, unless otherwise specified.
- 4. These assemblies are ESD sensitive, ESD precautions shall be observed.
- 5. These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.
- 6. Provide serial numbers to the assembled boards for identification.
- 7. The assembled board are wrapped in ESD Covers(individual) and packed securely before shipment.

SCREWS



STANDOFFs



LABELS

Board Serial No.

LBL1
PCB LABEL
DNI

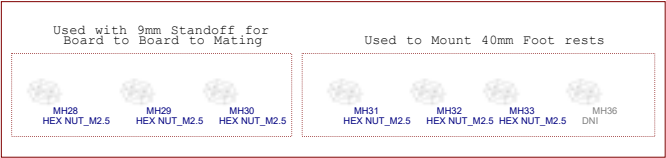
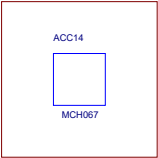
ORDERABLE PART NO

Variant	Label Text
001	TMDS64DC01EVM
002	TMDS243DC01EVM

Assembly Revision

LBL3
PCB LABEL
DNI

Metal Plate for supporting IO Link M12 Connector



BARE PCB

Assembled PCB

FIDUCIALS



LOGOs



For Evaluation only; not FCC approved for resale

LOGOs



Texas Instruments



WEEE Mark



CE Mark

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Title HARDWARE SCHEMATIC

Size	Variant Name = PROC102A(001) TMDS64DC01EVM	Rev
C		E1
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