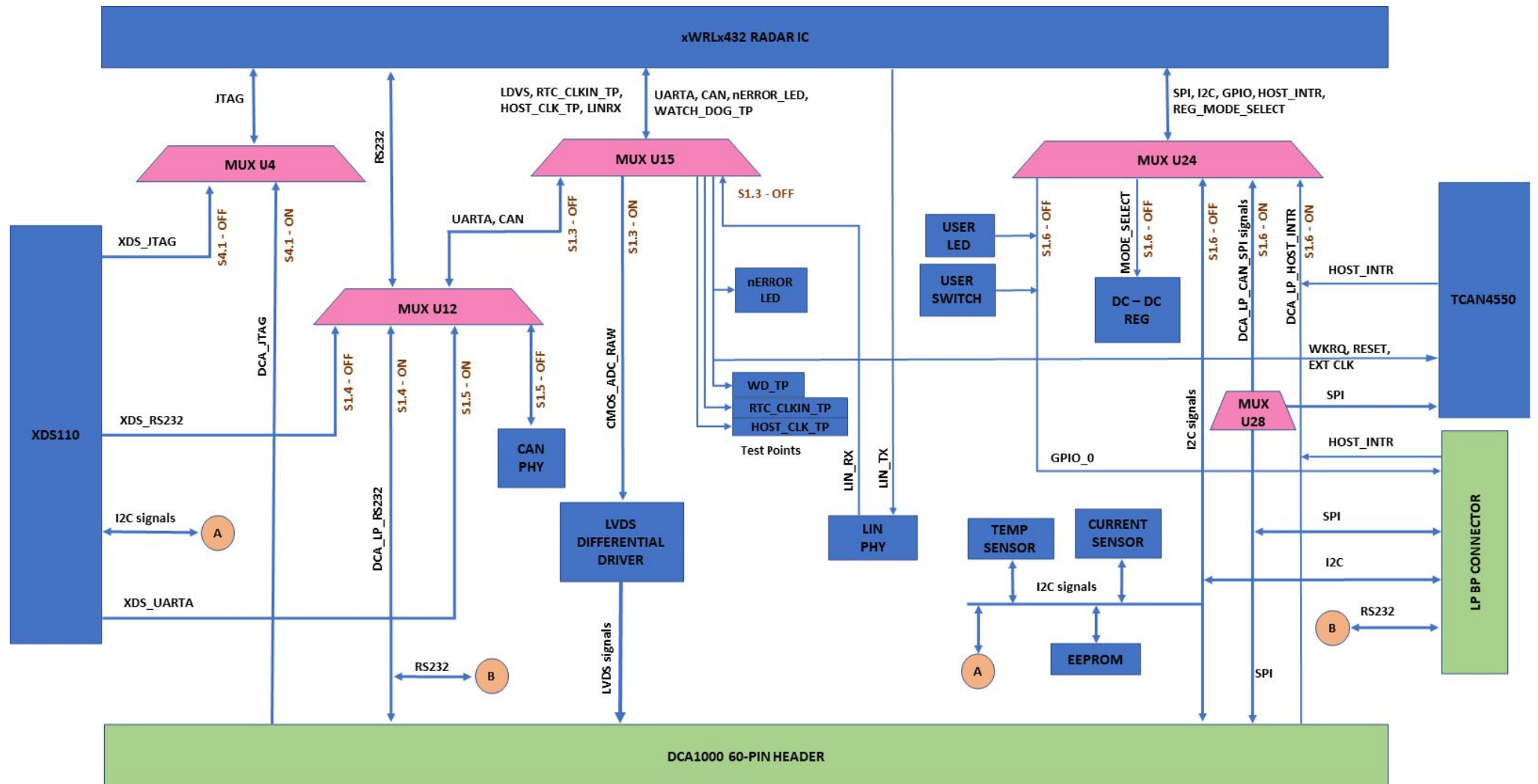




## MUX BLOCK DIAGRAM



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Orderable: <b>AWRL1432BOOST-BS</b>	Designed for: <b>Public Release</b>	Mod. Date: <b>05-10-2023</b>
TID #: <b>N/A</b>	Project Title: <b>xWRL1432BOOST BSD</b>	
Number: <b>PROC176</b>	Rev: <b>A</b>	Sheet Title: <b>MUX BLOCK DIAGRAM</b>
SVN Rev: <b>3057</b>	Assembly Variant: <b>001_AWR</b>	Sheet <b>2</b> of <b>17</b>
Drawn By: <b>Mistral</b>	File: <b>PROC176A_MUX_Block_Diagram.SchDoc</b>	Size: <b>B</b>
Engineer: <b>Mistral</b>	Contact: <b>http://www.ti.com/support</b>	

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3	TABLE OF CONTENTS
4	USB_PWR_DC_JACK_SWITCH
5	DC REGULATORS
6	xWRL1432_CHIP
7	DECOUPLING_CAPS
8	TEMP_CURRENT_SENSORS_EEPROM
9	QSPL_FLASH_LVDS_DRIVER
10	ANALOG_MUX_SOP_CTRL
11	XDS110_INTERFACE_1A
12	XDS110_INTERFACE_1B
13	CAN_LIN_PHY_INTERFACE
14	SPI_CAN_SECTION
15	DCA1000_CONN_RESET
16	LP_BP_CONN_HEADER
17	EVM_HARDWARE

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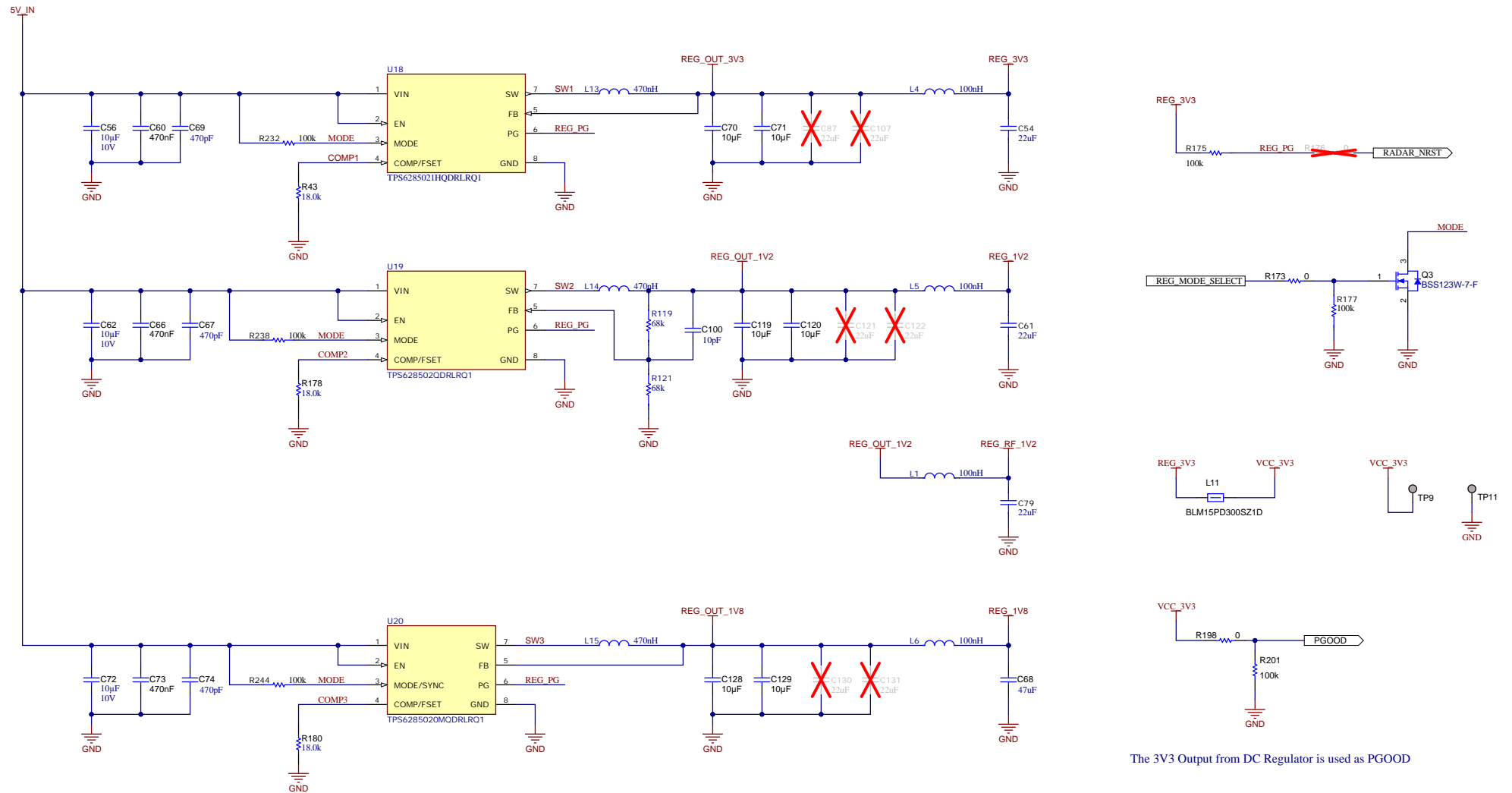


If  $V_{PR1}$  is high ( $V_{PR1} > V_{REF}$ ), then  $V_{out} = V_{in1}$   
 If  $V_{PR1}$  is low ( $V_{PR1} < V_{REF}$ ), then  $V_{out} = V_{in2}$

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TID #: <b>N/A</b>	Part Title: <b>AWRL1432B005T BSD</b>	 <b>TEXAS INSTRUMENTS</b>
Number: <b>PROC176</b>	Rev: <b>A</b>	
S/N: Rev: <b>3057</b>	Sheet Title: <b>USB PWR DC JACK SWITCH</b>	
Drawn by: <b>Mistral</b>	Assembly Variant: <b>001_AWR</b>	Sheet <b>4</b> of <b>17</b>
Engineer: <b>Mistral</b>	File: <b>PROC176A_USB PWR DC Jack Switch</b>	Size: <b>B</b>
	Contact: <b>http://www.ti.com/support</b>	<a href="http://www.ti.com">http://www.ti.com</a> © Texas Instruments 2023

## DC-DC REGULATORS - 3.3V, 1.2V & 1.8V OUTPUTS



CAD NOTE : Place all Input & Output Decaps close to Regulator Pins - U[18:20]

The 3V3 Output from DC Regulator is used as PGOOD

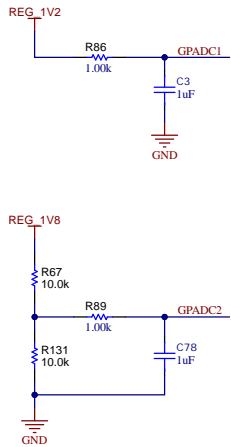
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Orderable: AWR1432BOOST-BSD	Designed for: Public Release	Mod. Date: 14-03-2024
TID #: N/A	Project Title: xWRL1432BOOST BSD	
Number: PROC176	Rev: A	Sheet Title: DC REGULATORS
SVN Rev: 3091	Assembly Variant: 001_AWR	Sheet 5 of 17
Drawn By: Mistral	File: PROC176A_DC_Regulators_SchDoc	Size: B
Engineer: Mistral	Contact: http://www.ti.com/support	http://www.ti.com

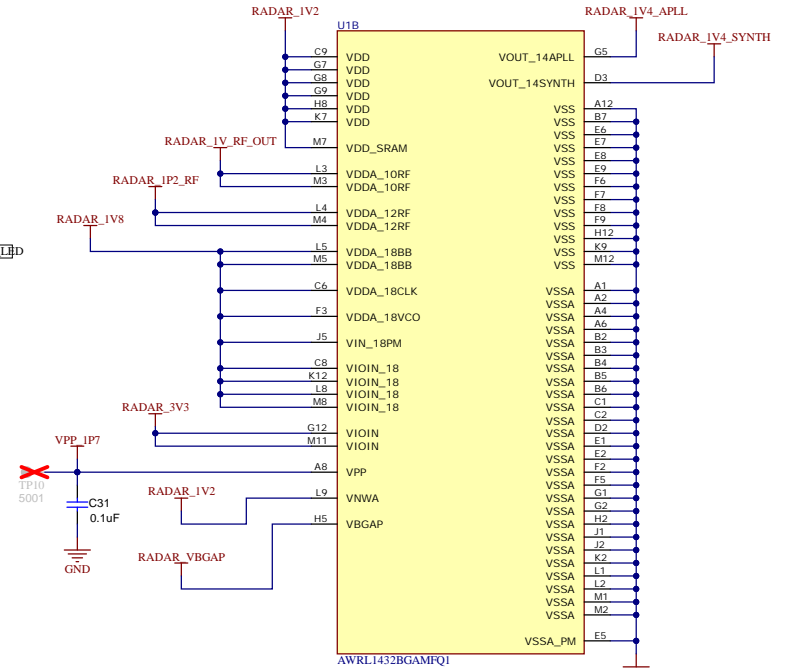
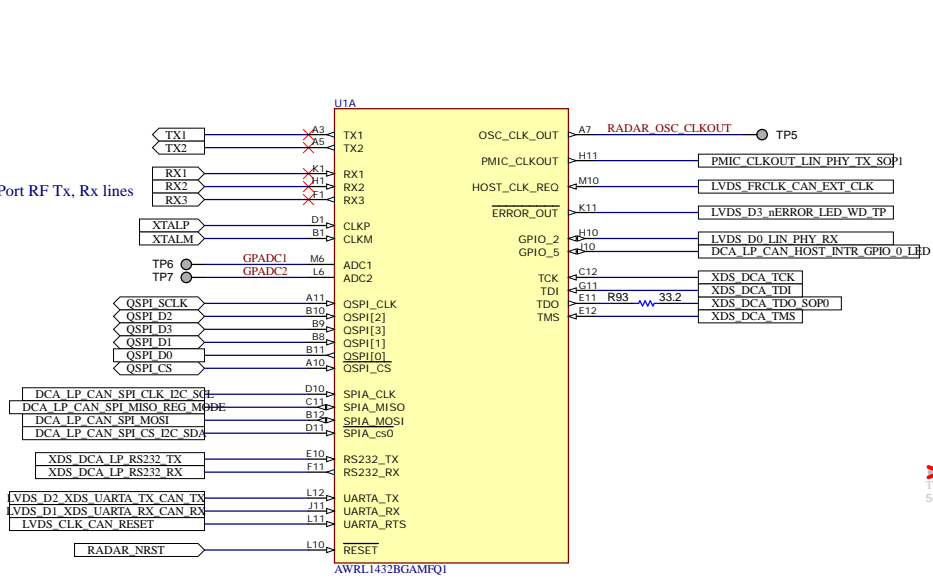
**xWRL1432 CHIP**

**Design Note:**

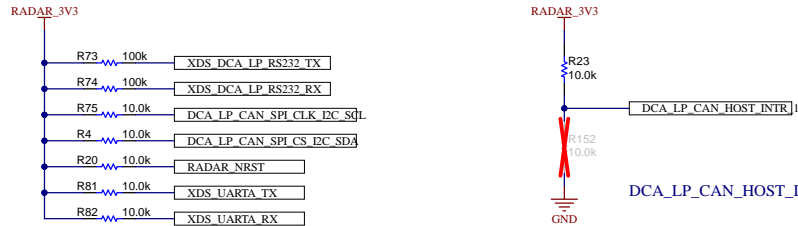
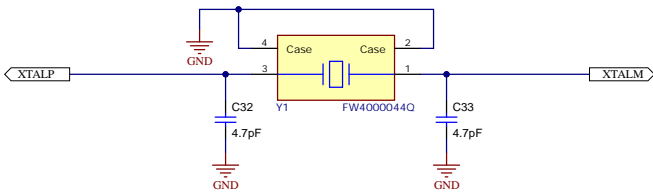
1. Antenna traces are GCPW traces
2. 'Generic No ERCs' were placed intentionally on Single Port RF Tx, Rx lines



CAD Note: Place C3 and C78 close to xWRLx432S IC



## 40 MHz CRYSTAL OSCILLATOR

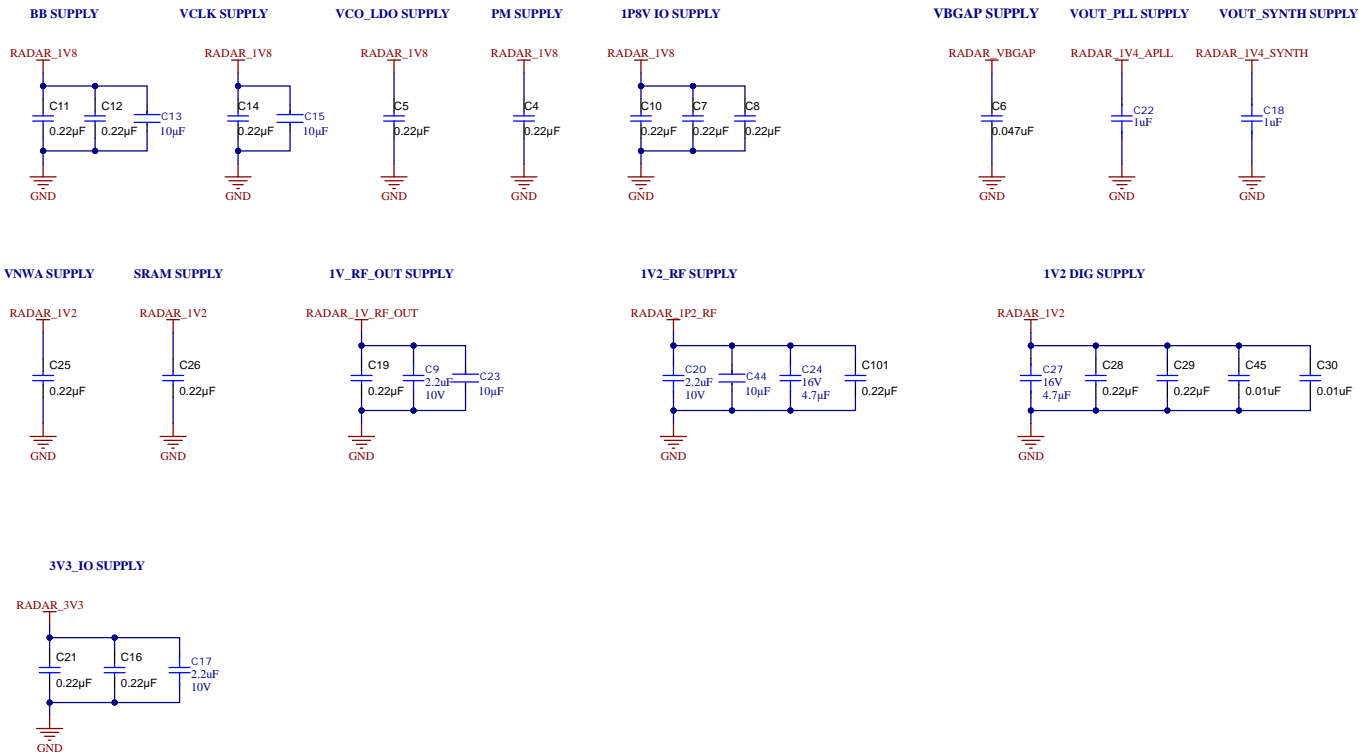


DCA\_LP\_CAN\_HOST\_INTR\_1 is the SPI\_BUSY signal

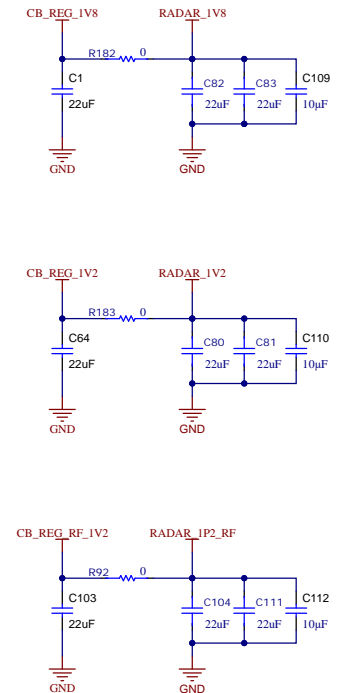
Orderable: <b>AWRL1432BOOST-RSD</b>	Designed for: <b>Public Release</b>	Mod. Date: 14-03-2024
TID #:	<b>N/A</b>	Project Title: <b>xWRL1432BOOST BSD</b>
Model: <b>PROC16E</b>	Rev: <b>A</b>	Sheet Title: <b>xWRL1432_CHIP</b>
SVN Rev: 3091	Assembly Variant: <b>001_AWR</b>	Sheet: <b>6 of 17</b>
Drawn by: <b>Mistral</b>	File: <b>PROC176A_xWRL1432_Chip_SchDoc</b>	Size: <b>B</b>
Engineer: <b>Mistral</b>	Contact: <b>http://www.ti.com/support</b>	 <a href="http://www.ti.com">http://www.ti.com</a> © Texas Instruments 2023

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INSTRUMENTS**  
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Texas Instruments 2023

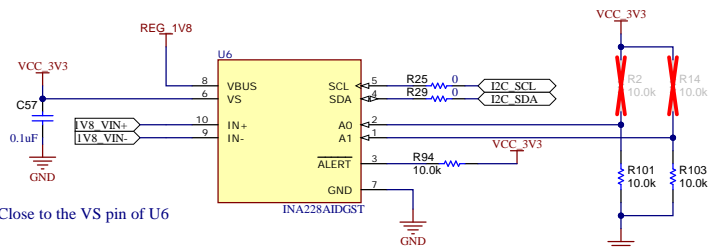
**SUPPLY\_DECOUPLING\_CAPS**

## DC-DC LC FILTERS



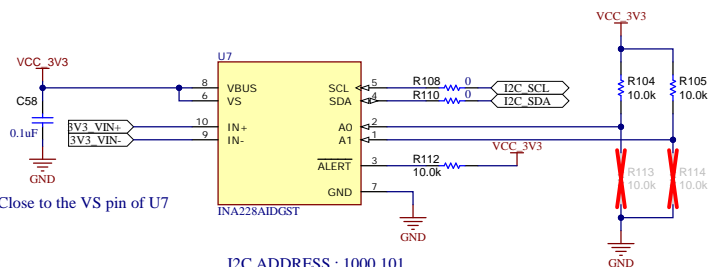
Design note: Alternate Ferrite bead part for R182,R183, R92 is BLM18KG121TH1D

## CURRENT SENSORS



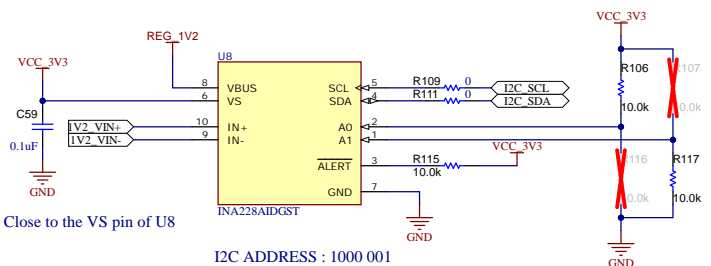
Place C57 Close to the VS pin of U6

I2C ADDRESS : 1000 000



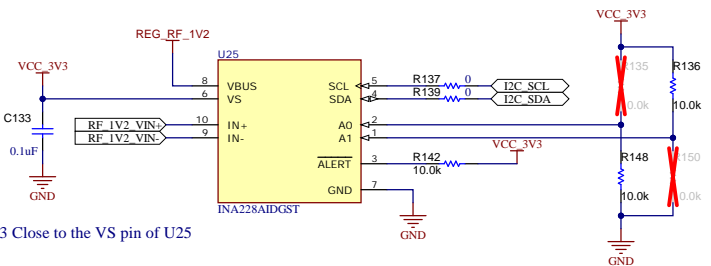
Place C58 Close to the VS pin of U7

I2C ADDRESS : 1000 101



Place C59 Close to the VS pin of U8

I2C ADDRESS : 1000 001



Place C133 Close to the VS pin of U25

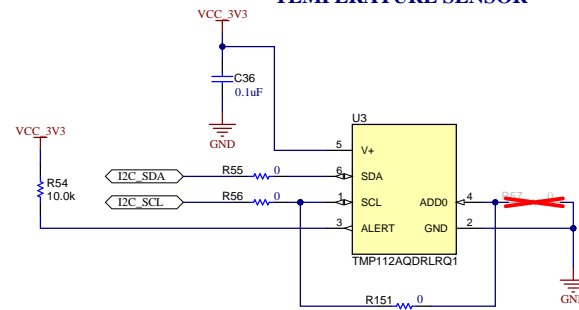
I2C ADDRESS : 1000 100

## CURRENT SENSE RESISTORS



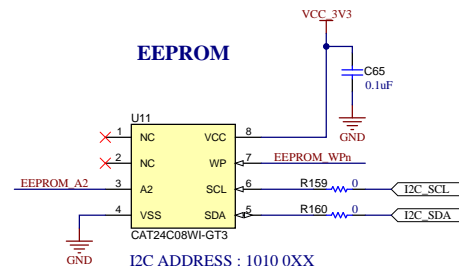
Design Note: 'Generic No ERCs' were placed intentionally on either sides of Current sense resistors

## TEMPERATURE SENSOR

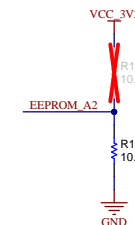
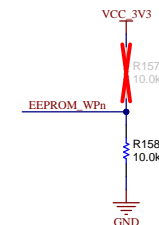


I2C ADDRESS : 1001 011

## EEPROM



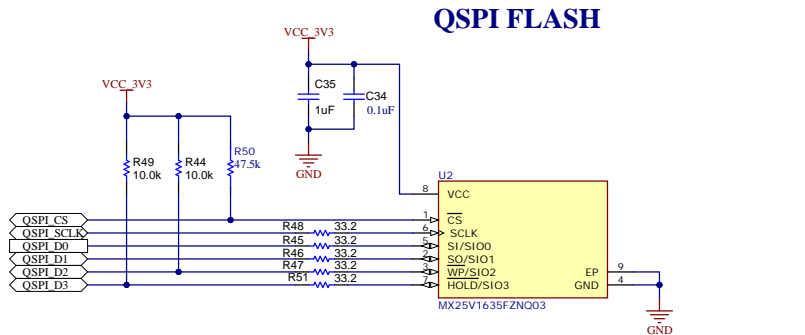
I2C ADDRESS : 1010 0XX



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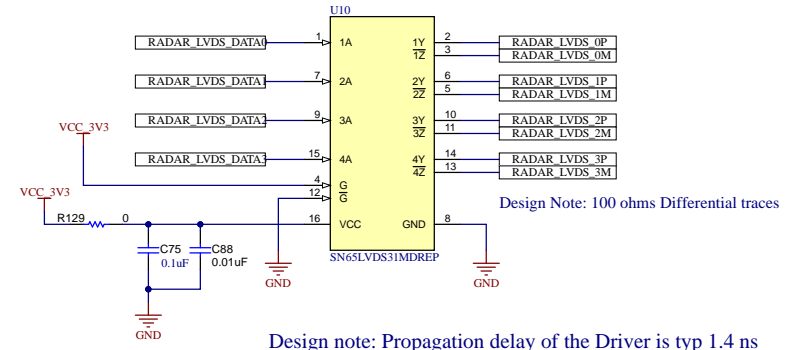
Orderable: AWR1432BOOST-BSD	Designed for: Public Release	Mod. Date: 02-08-2023
TID #: N/A	Project Title: xWRL1432BOOST BSD	
Number: PROC176	Rev: A	Sheet Title: TEMP CURRENT SENSORS EEPROM
SVN Rev: 3057	Assembly Variant: 001_AWR	Sheet 8 of 17
Drawn By: Mistral	File: PROC176A Temp Current Sensors and EEPROM BOM Doc	http://www.ti.com
Engineer: Mistral	Contact: http://www.ti.com/support	© Texas Instruments 2023



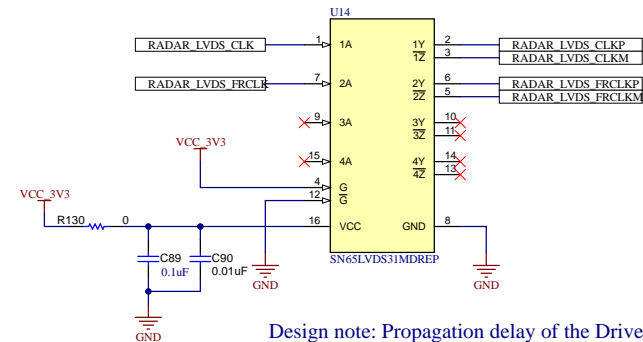
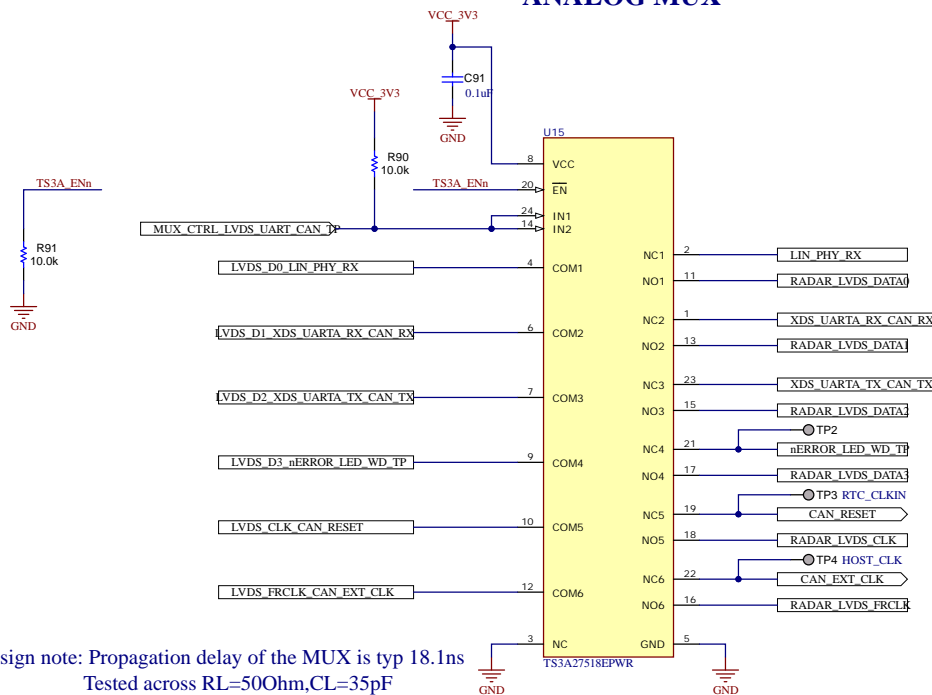


Design note: Alternate Flash part is MX25V1635FZNO03

## DIFFERENTIAL LVDS DRIVER



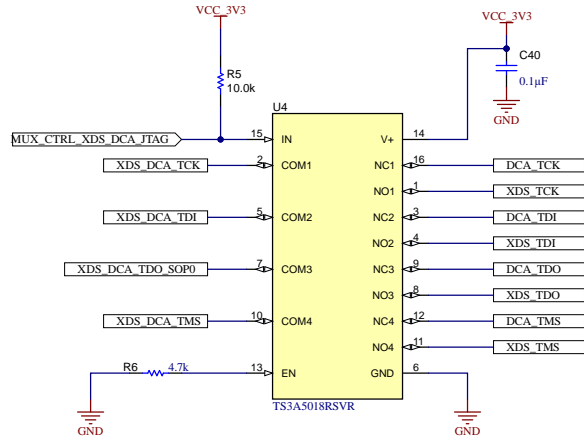
## ANALOG MUX



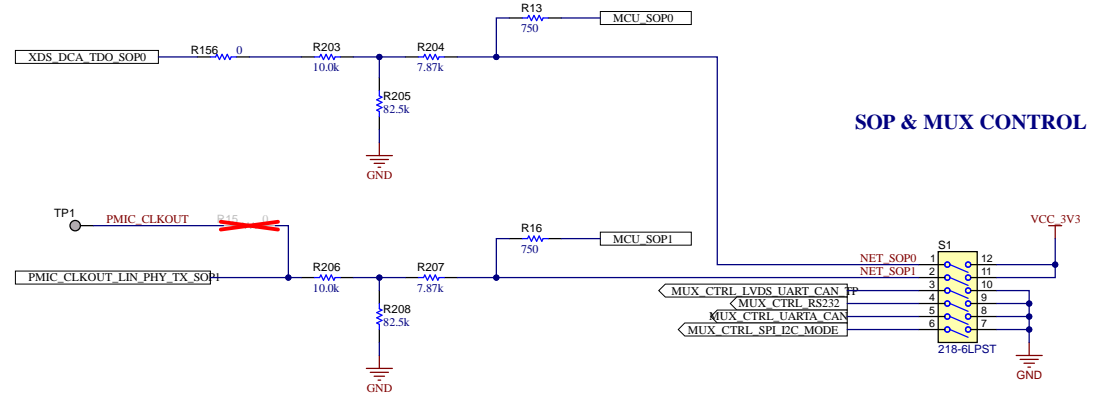
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Orderable: AWR1432BOOST-BSD	Designed for: Public Release	Mod. Date: 02-08-2023
TID #: N/A	Project Title: xWRL1432BOOST BSD	
Number: PROC176	Rev: A	Sheet Title: QSPI FLASH LVDS DRIVER
SVN Rev: 3057	Assembly Variant: 001_AWR	Sheet: 9 of 17
Drawn By: Mistral	File: PROC176A_QSPI Flash LVDS_Driver.SchDoc	Size: B
Engineer: Mistral	Contact: http://www.ti.com/support	

## ANALOG MUX

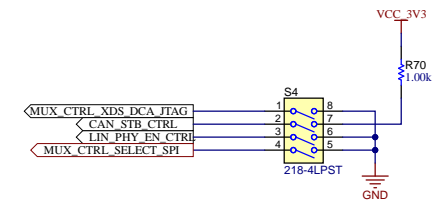


## SOP & MUX CONTROL



## SOP CONFIGURATION

SOPMode	PMIC_CLK_OUT, TDO	Combination (S1.2, S1.1)
SOP_MODE1	Device Management Mode	0 0
SOP_MODE2	Application Mode / Functional Mode	0 1
SOP_MODE3	Test mode	1 0
SOP_MODE4	Debug Mode	1 1

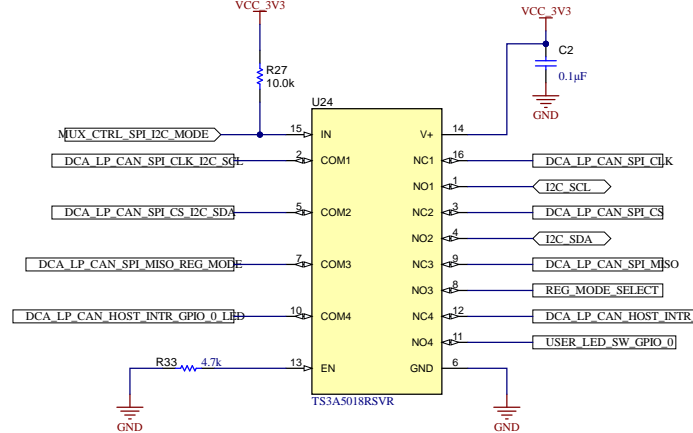
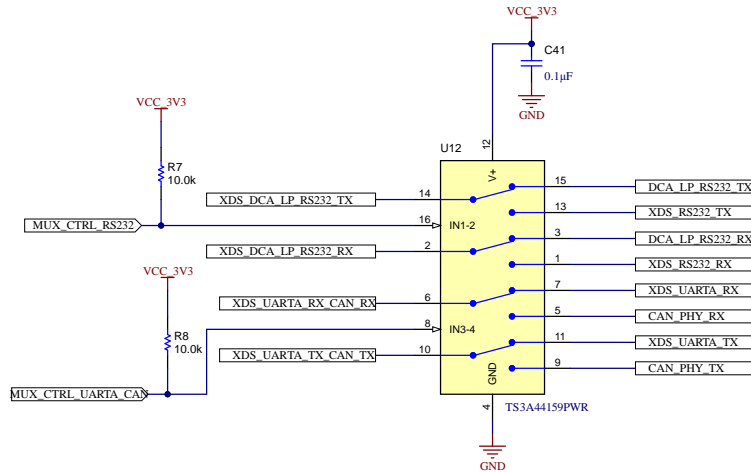


## MUX TABLE

	Switch Position OFF	Switch Position ON
S1.3	LVDS	LIN_RX, XDS_UARTA/CAN, NERROR_LED, WATCH_DOG_TP, RTC_CLK_IN_TP, HOST_CLK_TP
S1.4	XDS_RS232	DCA_LP_RS232
S1.5	CAN	XDS_UARTA
S1.6	I2C, REG_MODE, LED_SW_GPIO	SPI
S4.1	XDS_JTAG	DCA_JTAG
S4.4	DCA_LP_FTDI - SPI	TCAN - SPI

## CONTROL TABLE

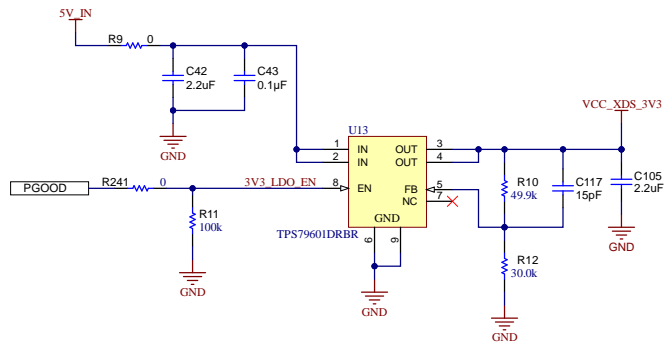
	Switch Position OFF	Switch Position ON
S4.2	CAN PHY : Stand-by Mode Disable	CAN PHY : Stand-by Mode Enable
S4.3	LIN PHY : Enable	LIN PHY : Disable



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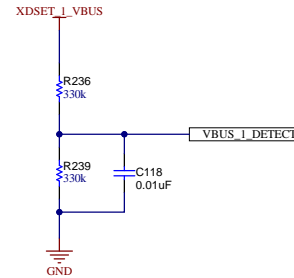
## XDS110(1/2)

### 5V TO 3.3V LDO

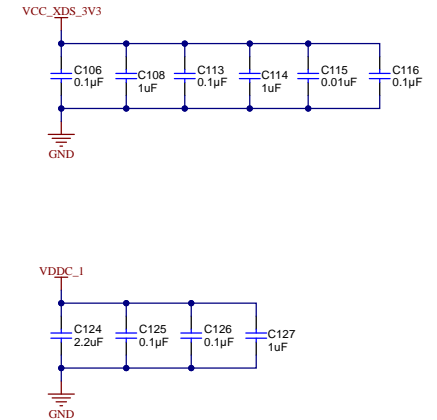


By Default LDO is disabled  
When 3V3 DC-DC regulator is powered up, then it gets enabled

### VBUS\_DETECT



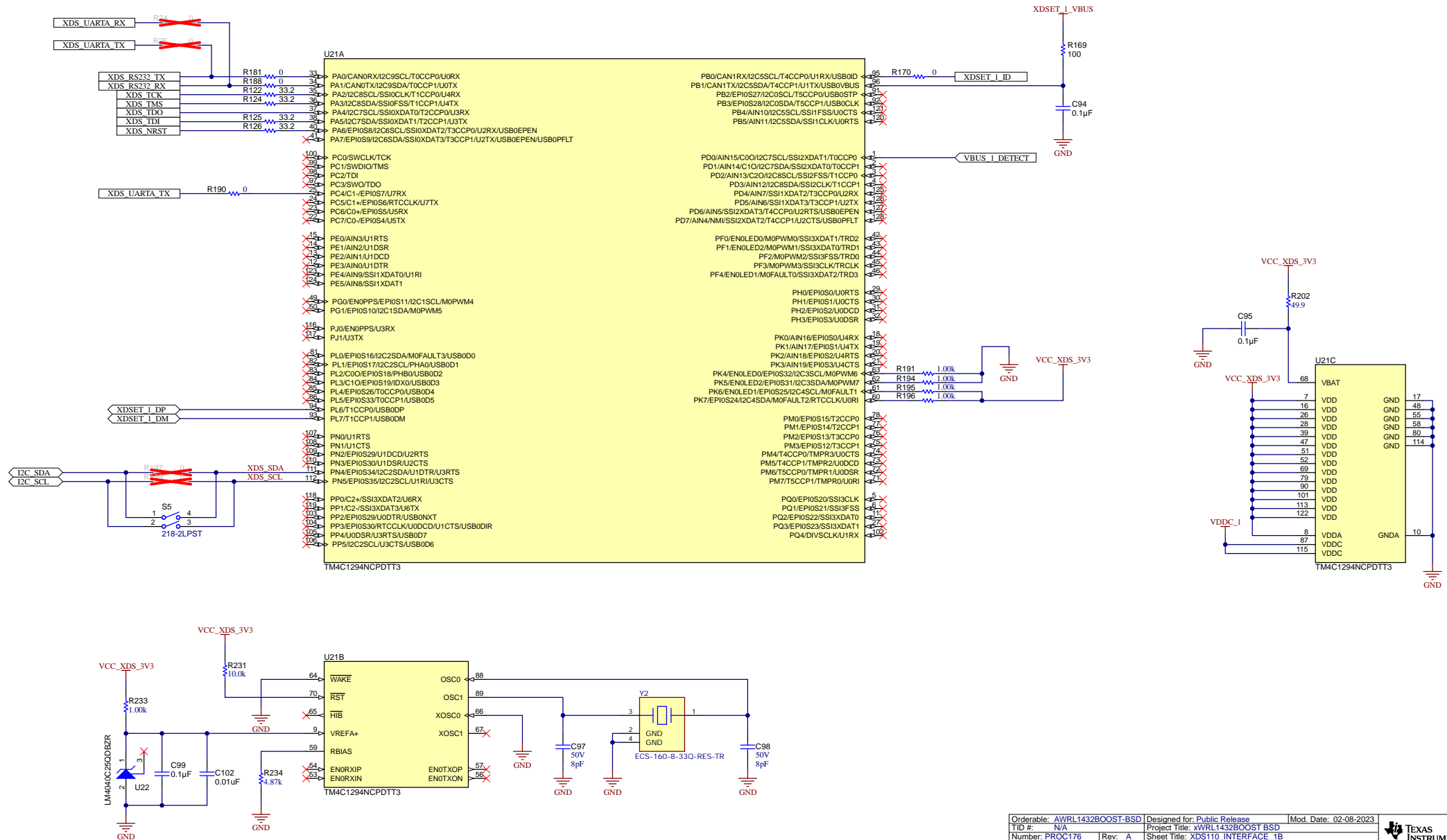
### DECOUPLING CAPACITORS - XDS110



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Orderable: <b>AWRL1432BOOST-BSD</b>	Designed for: <b>Public Release</b>	Mod. Date: <b>31-08-2023</b>
TID #: <b>N/A</b>	Project Title: <b>xWRL1432BOOST BSD</b>	
Number: <b>PROC176</b>	Rev: <b>A</b>	Sheet Title: <b>XDS110_INTERFACE_1A</b>
SVN Rev: <b>3057</b>	Assembly Variant: <b>001_AWR</b>	Sheet 11 of 17
Drawn By: <b>Mistral</b>	File: <b>PROC176A_XDS110_Interface_1A.SchDoc</b>	Size: <b>B</b>
Engineer: <b>Mistral</b>	Contact: <b>http://www.ti.com/support</b>	

**XDS110(2/2)**



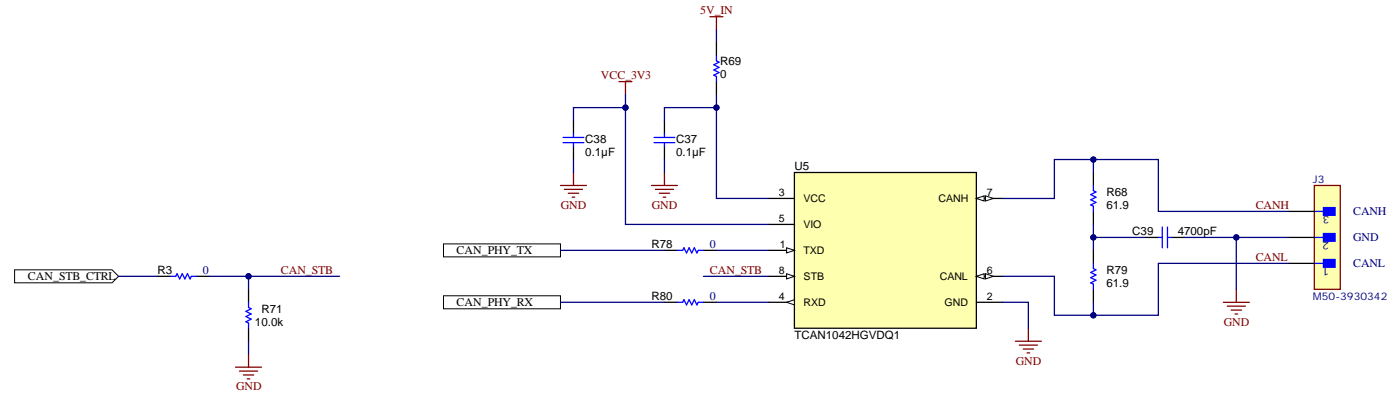
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Orderable: <b>AWRL1432B0051-BSD</b>		Project for: <b>Public Release</b>		Mod. Date: 02-08-2023	
TID #: <b>N/A</b>		Design Title: <b>xWRL1432B002 BSD</b>			
S/N: <b>PROC176</b>		Rev: <b>A</b>		Sheet Title: <b>XD5110 INTERFACE 1B</b>	
SVN Rev: <b>3057</b>		Assembly Variant: <b>001_AWR</b>			Sheet: <b>12 of 17</b>
Drawn By: <b>Mistral</b>		File: <b>PROC176A_XD5110 Interface 1B_SchDoc</b>			Size: <b>B</b>
Engineer: <b>Mistral</b>		Contact: <b>http://www.ti.com/support</b>			

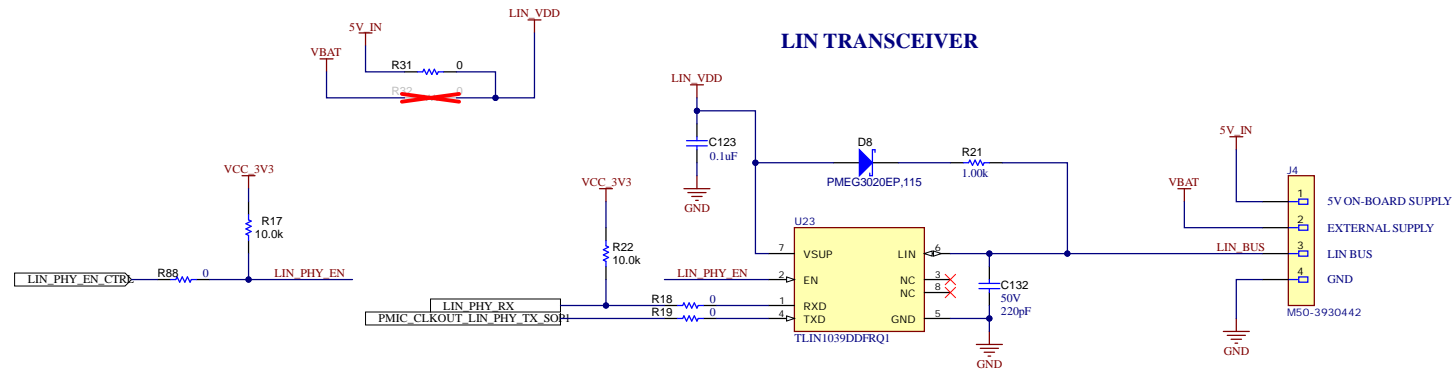


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## CAN TRANSCEIVER



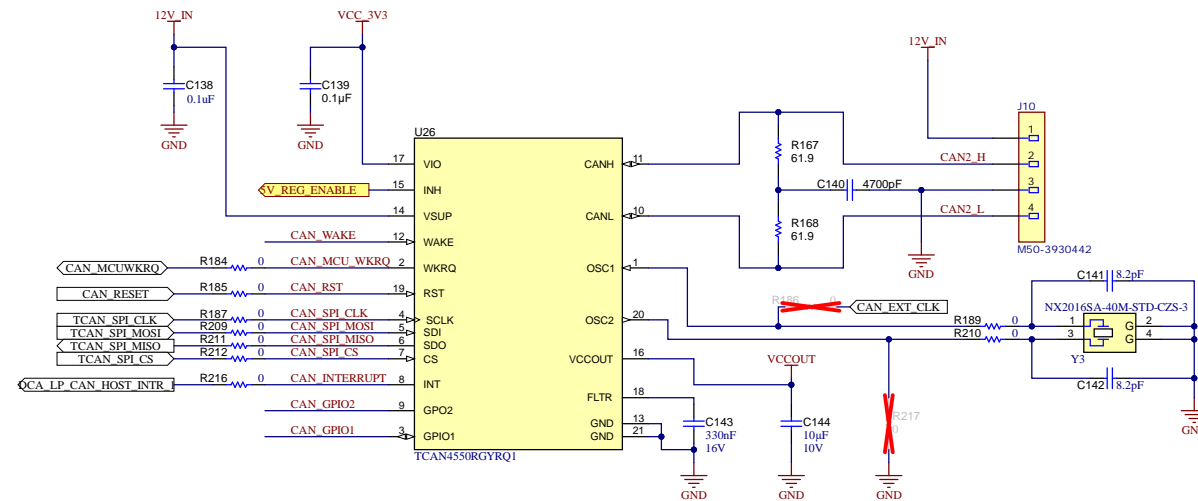
## LIN TRANSCEIVER



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Orderable: AWR1432BOOST-BSD	Designed for: Public Release	Mod. Date: 02-08-2023
TID #: N/A	Project Title: xWRL1432BOOST BSD	
Number: PROC176	Rev: A	Sheet Title: CAN LIN PHY INTERFACE
SVN Rev: 3057	Assembly Variant: 001 AWR	Sheet 13 of 17
Drawn By: Mistral	File: PROC176A CAN LIN PHY Interface.SchDoc	Size: B
Engineer: Mistral	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	

## SPI CAN TRANSCEIVER



**Note to TI for Review:**

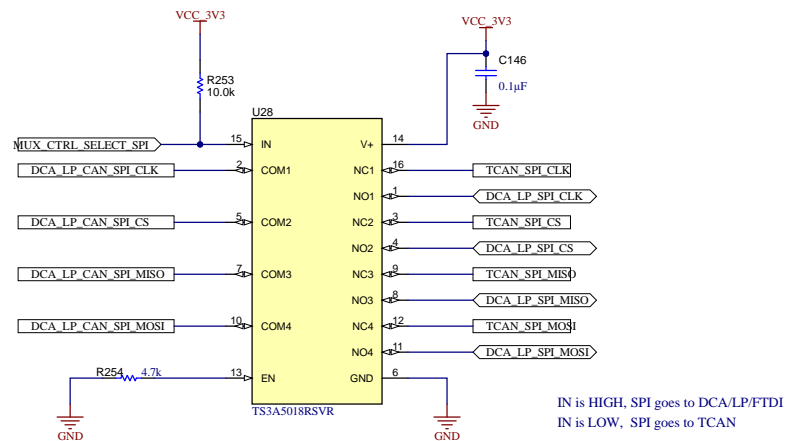
Kindly review and give comments on the current signal connections to TCAN4550

The CAN RESET signal is connected to GPIO\_6 - pin L11 of 1432 MCU

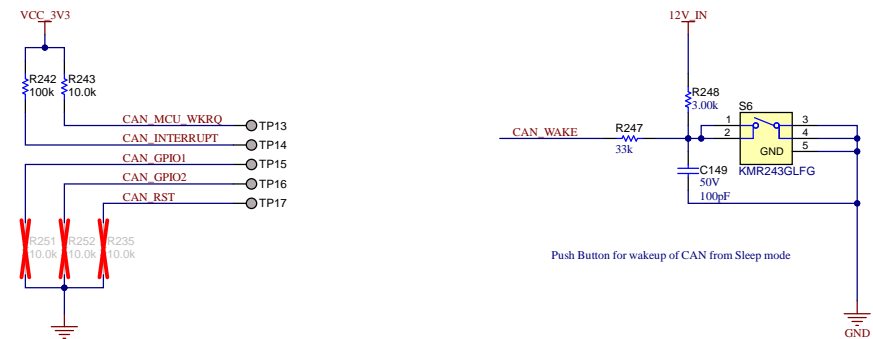
The CAN GPIO1 and WKRQ are connected to nERROR LED (GPIO\_4 and WU\_REQIN - pin K11)

The CAN INTERRUPT is connected to DCA\_LP\_HOST\_INTR (SPI Busy) signal (GPIO\_5 - pin J10)

## ANALOG MUX FOR SPI

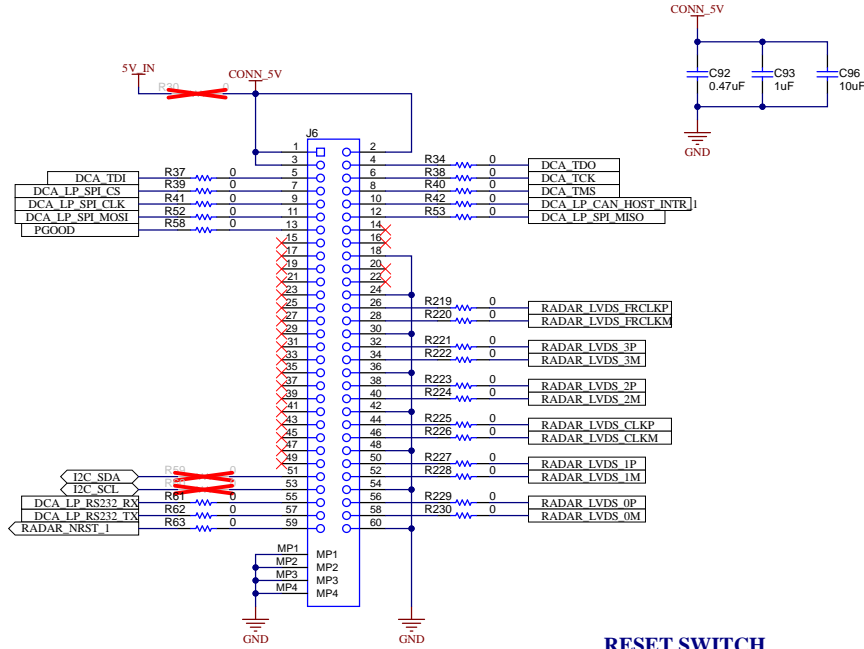


IN is HIGH, SPI goes to DCA/LP/FTDI  
IN is LOW, SPI goes to TCAN



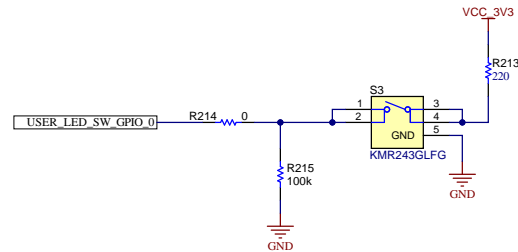
### Push Button for wakeup of CAN from Sleep mode

## 60-PIN HD CONNECTOR FOR DCA1000

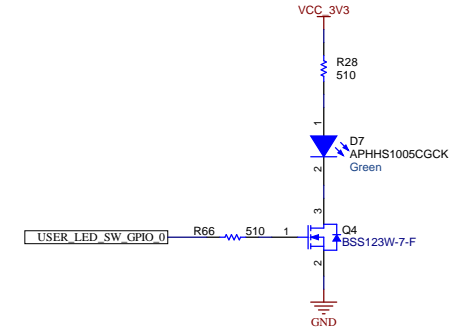


## RESET, USER LED & SWITCHES

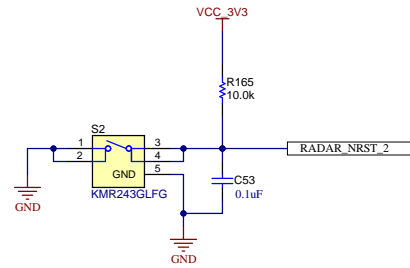
### USER SWITCH



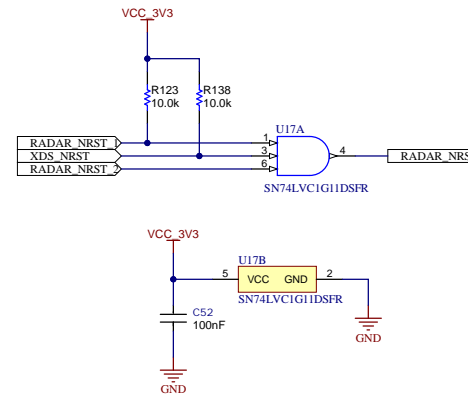
### USER LED



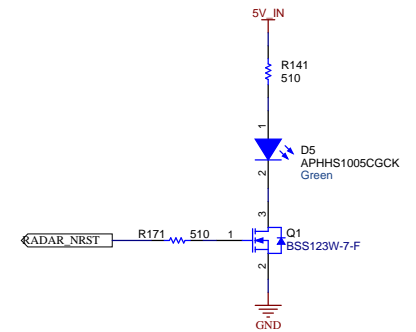
### RESET SWITCH



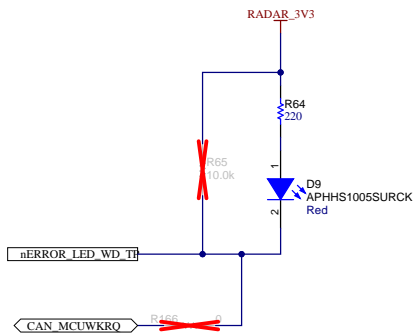
### RESET



### RESET LED



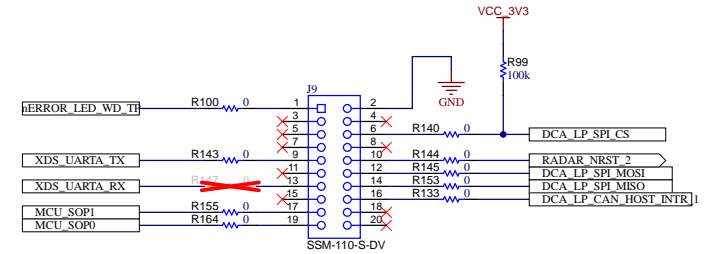
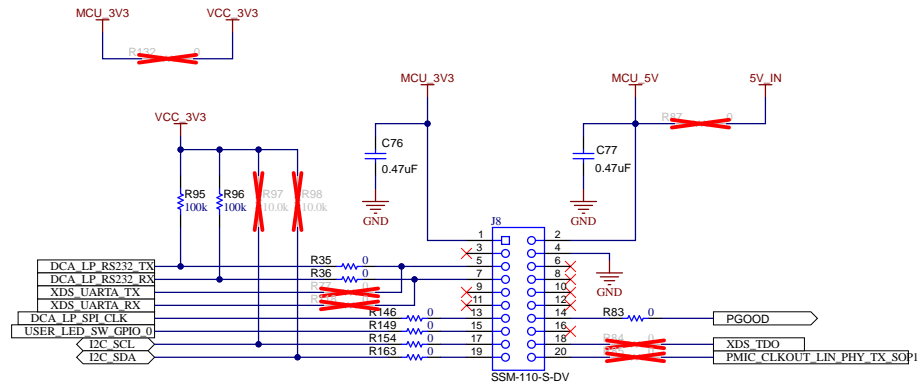
### nERROR LED



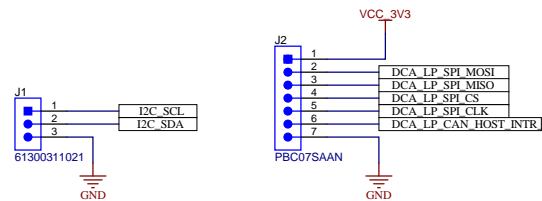
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Orderable: AWR1432BOOST-BSD	Designed for: Public Release	Mod. Date: 14-03-2024
TID #: N/A	Project Title: xWRL1432BOOST BSD	
Number: PROC176	Rev: A	Sheet Title: DCA1000 CONN RESET
SVN Rev: 3091	Assembly Variant: 001 AWR	Sheet 15 of 17
Drawn By: Mistral	File: PROC176A DCA1000 Connector Reset.Sch	Size: B
Engineer: Mistral	Contact: http://www.ti.com/support	

## LP/BP CONNECTOR



## I2C & SPI HEADER FOR FTDI INTERFACE



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