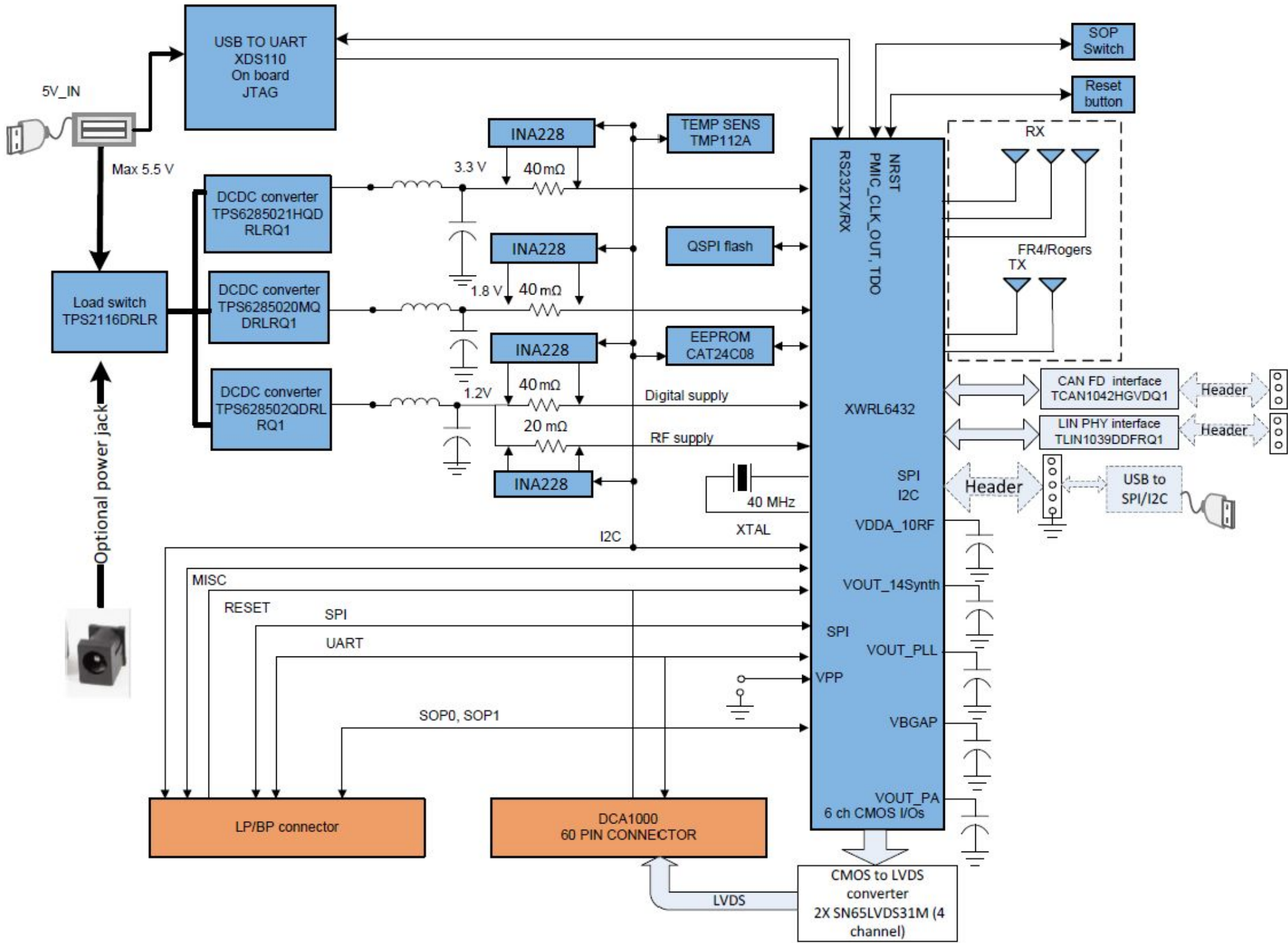


BLOCK DIAGRAM



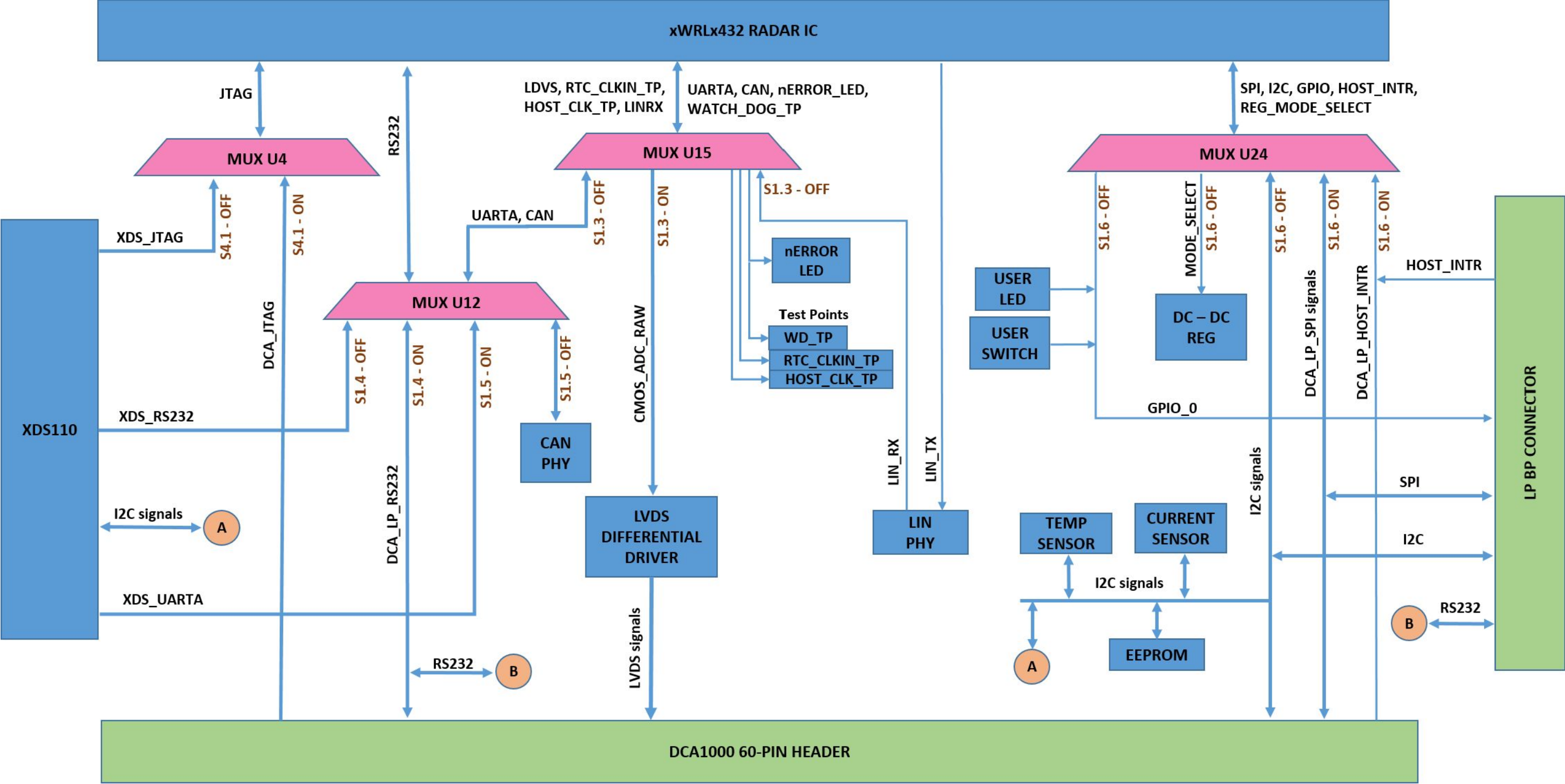
Revision History

Rev	ECN #	Approved Date	Approved by	Notes
B	1	01-Aug-22	Chethan	SOP0 net isolated from analog mux U4
B	2	01-Aug-22	Chethan	Reset circuit discrete components package changed from 0201 to 0402 (C53, R123, R138, R165)
B	3	04-Aug-22	Chethan	LIN header J4 changed from 3x1 to 4x1 5V net brought to J4 connector
B	4	05-Aug-22	Chethan	I2C bus isolated from DCA1000 connector R59 and R60 made DNI
B	5	18-Aug-22	Chethan	User LED D7 source changed from 5V_IN to VCC_3V3
B	6	30-Aug-22	Chethan	Added 2-Pos SPST switch for XDS I2C lines
B	7	10-July-23	Chethan	1. INA226 Replaced By INA228 2. R200, R192, R193 Replaced to 40 mOhm 3. R134 Replaced to 20 mOhm

S.No	DESCRIPTION	I2C ADDRESS
1	CURRENT SENSOR 3.3V	100 0101
2	CURRENT SENSOR 1.8V	100 0000
3	CURRENT SENSOR 1.2V	100 0001
4	CURRENT SENSOR RF_1.2V	100 0100
5	TEMPERATURE SENSOR	100 1011
6	EEPROM	1010 0XX

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

MUX BLOCK DIAGRAM



1	2	3	4	5	6
A					A
B					B
C					C
D					D

TABLE OF CONTENTS

SHEET NO.	SHEET NAME
1	BLOCK DIAGRAM
2	MUX BLOCK DIAGRAM
3	TABLE OF CONTENTS
4	USB_PWR_DC_JACK_SWITCH
5	DC REGULATORS
6	xWRL6432_CHIP
7	DECOUPLING_CAPS
8	TEMP_CURRENT_SENSORS_EEPROM
9	QSPI_FLASH_LVDS_DRIVER
10	ANALOG_MUX_SOP_CTRL
11	XDS110_INTERFACE_1A
12	XDS110_INTERFACE_1B
13	CAN_LIN_PHY_INTERFACE
14	DCA1000_CONN_RESET
15	LP_BP_CONN_HEADER
16	EVM_HARDWARE

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWRL6432BOOST	Designed for: Public Release	Mod. Date: 11-07-2023
TID #: N/A	Project Title: xWRL6432BOOST	
Number: PROC117	Rev: B	Sheet Title: TABLE OF CONTENTS
SVN Rev: Not in version control	Assembly Variant: 002_AWR	Sheet: 3 of 16
Drawn By: Mistral	File: PROC117B_Table_Of_Contents.SchDoc	Size: B
Engineer: Mistral	Contact: http://www.ti.com/support	

 **TEXAS
INSTRUMENTS**

<http://www.ti.com>
© Texas Instruments 2022

A



A

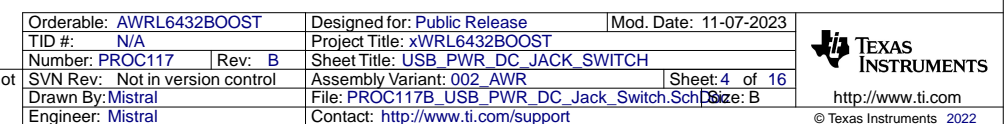


C

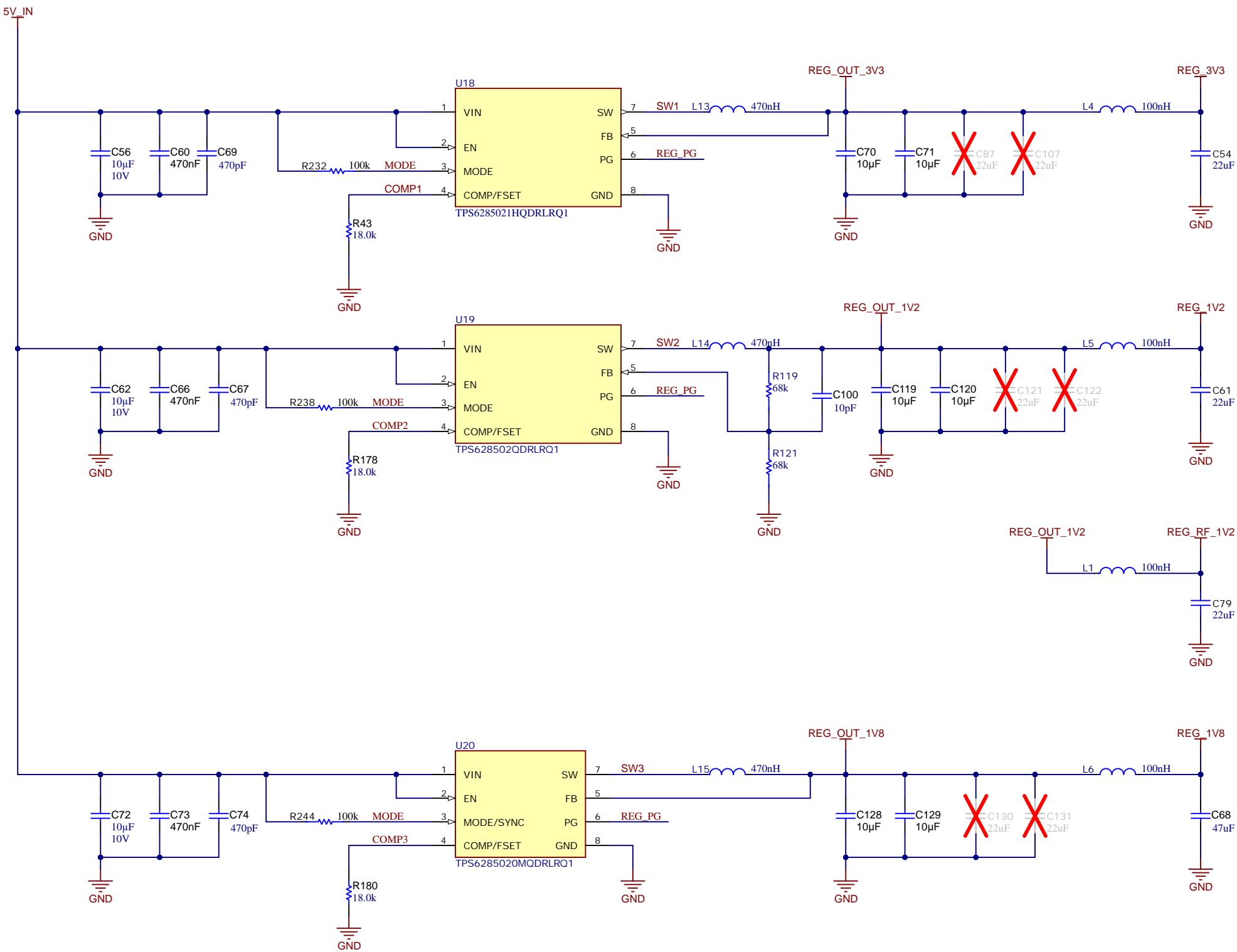


If VPR1 is low ($V_{PR1} < V_{REF}$), then $V_{out} = V_{in2}$

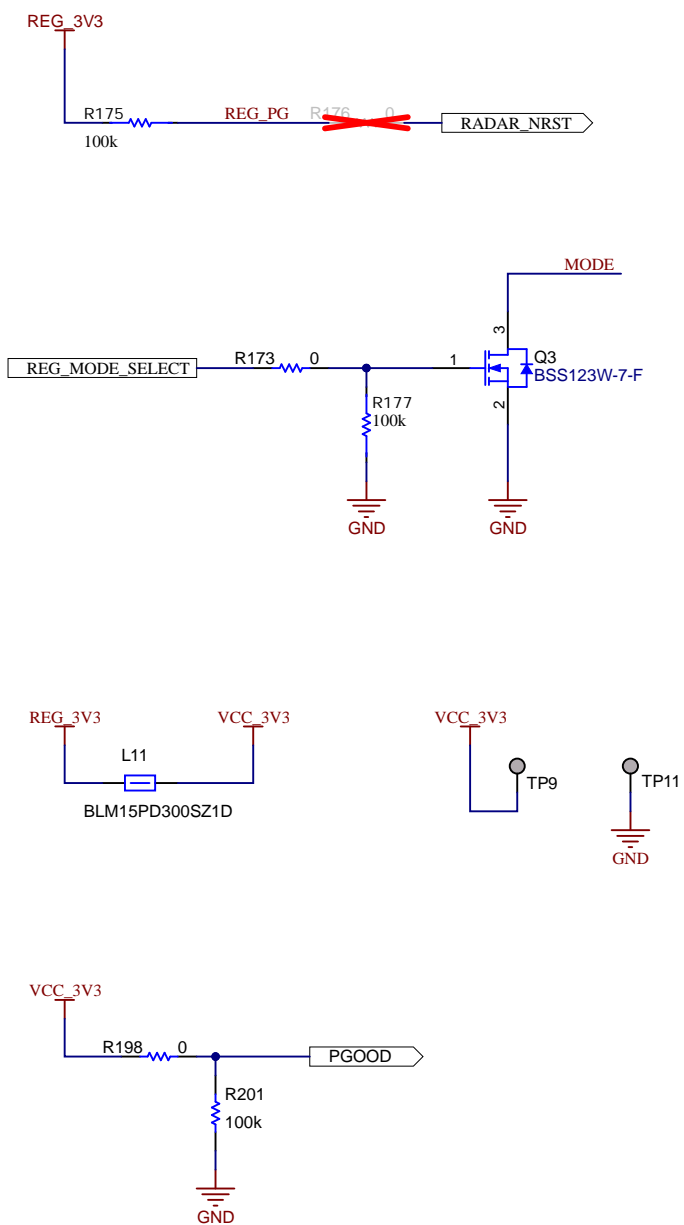
C



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



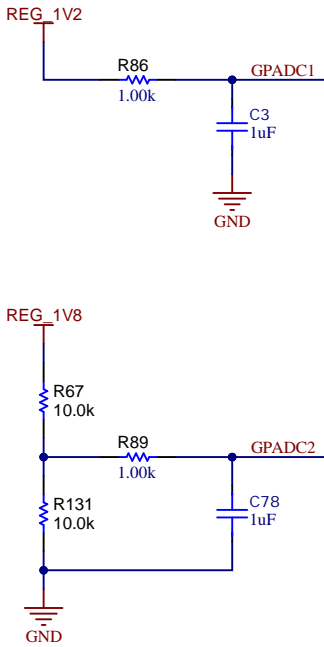
CAD NOTE : Place all Input & Output Decaps close to Regulator Pins - U[18:20]



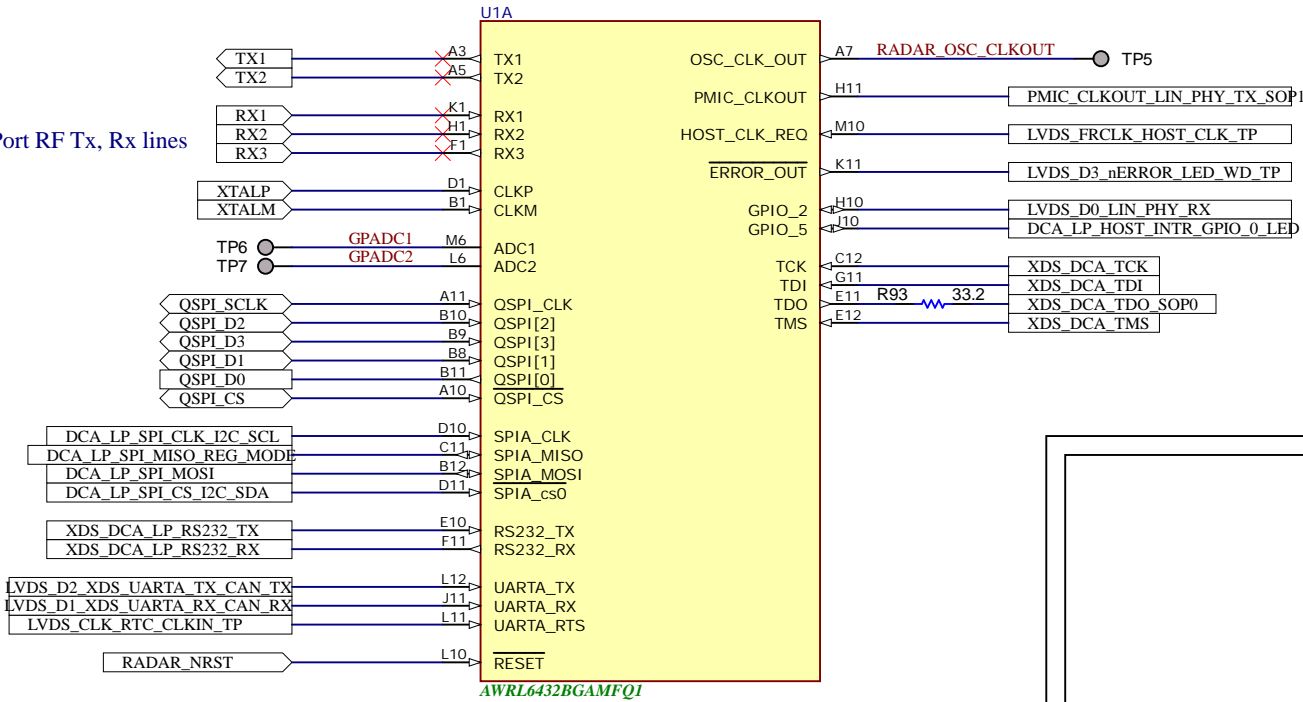
The 3V3 Output from DC Regulator is used as PGOOD

xWRL6432 CHIP - INTERFACE

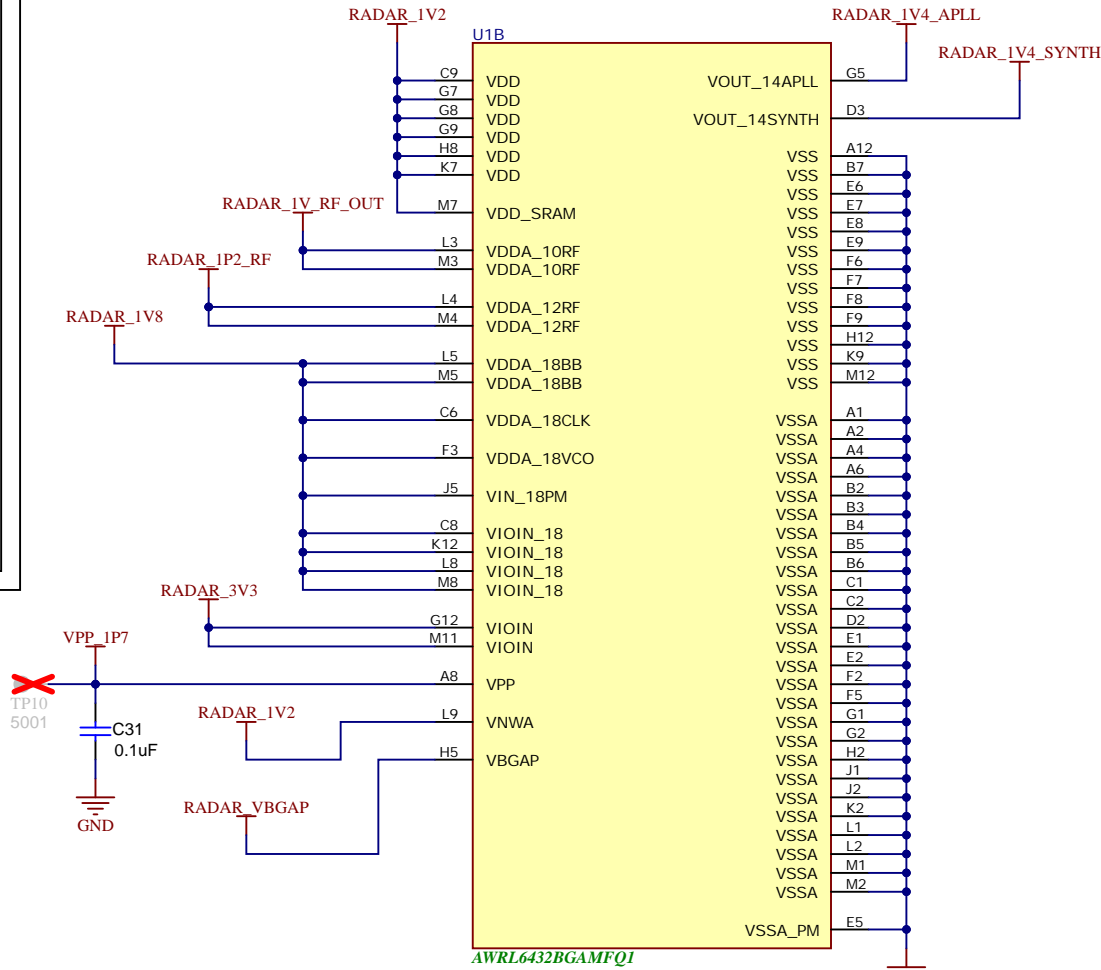
Design Note:
1. Antenna traces are GCPW traces
2. 'Generic No ERCs' were placed intentionally on Single Port RF Tx, Rx lines



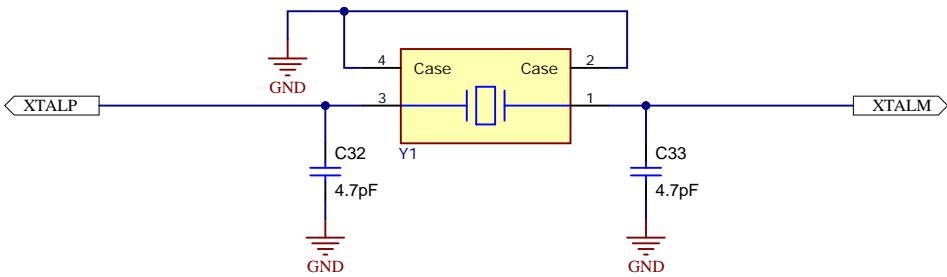
CAD Note: Place C3 and C78 close to xWRLx432S IC



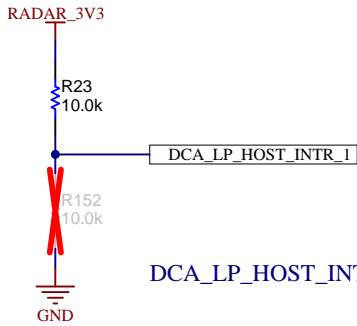
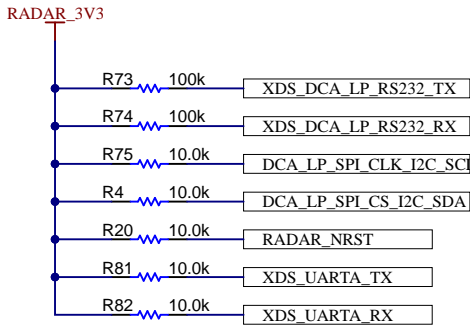
xWRL6432 CHIP - POWER



40 MHz CRYSTAL OSCILLATOR



Alternate Crystal part number : CX2016SA40000D0PTWC1

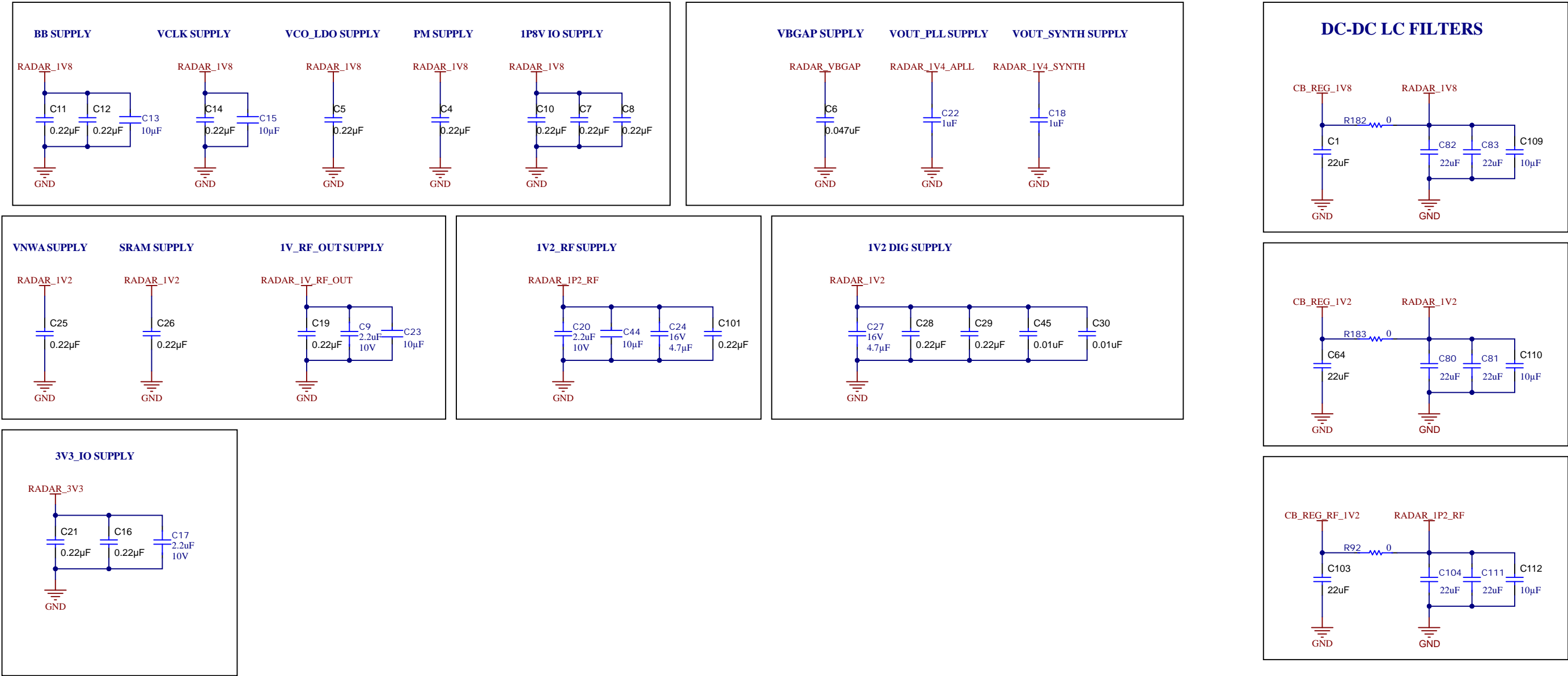


DCA_LP_HOST_INTR_1 is the SPI_BUSY signal

A

A

SUPPLY_DECOUPLING_CAPS



B

B

C

C

D

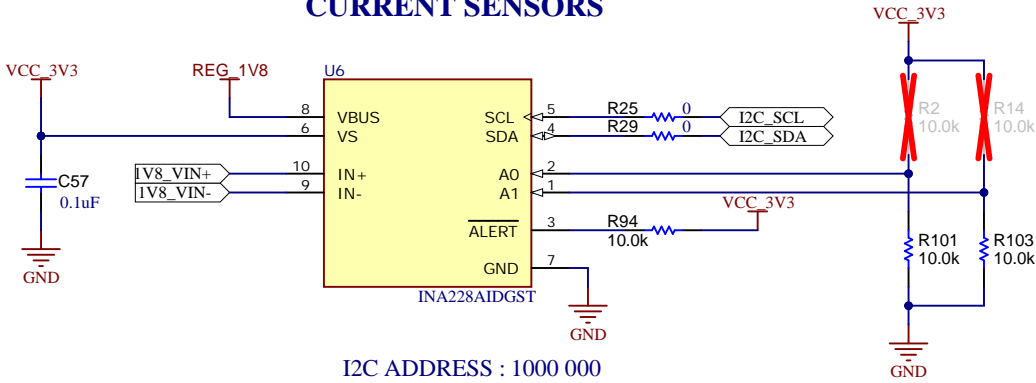
D

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

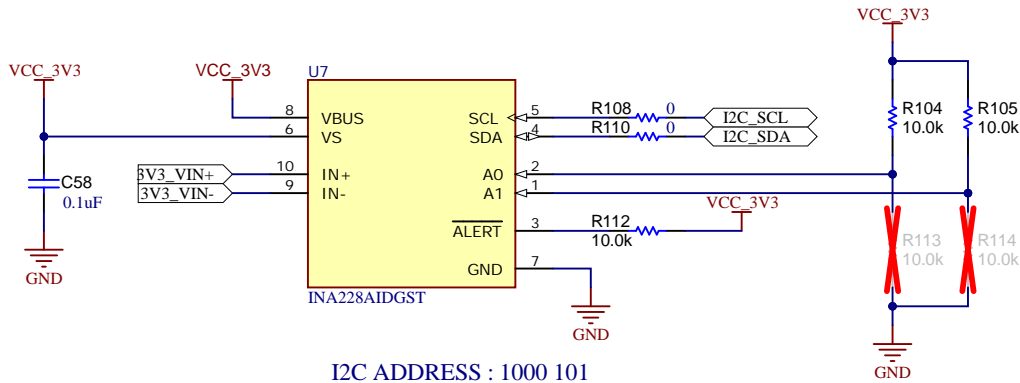
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWRL6432BOOST	Designed for: Public Release	Mod. Date: 11-07-2023
TID #: N/A	Project Title: xWRL6432BOOST	
Number: PROC117	Rev: B	Sheet Title: DECOUPLING_CAPS
SVN Rev: Not in version control	Assembly Variant: 002_AWR	Sheet: 7 of 16
Drawn By: Mistral	File: PROC117B_Decoupling_caps.SchDoc	Size: B
Engineer: Mistral	Contact: http://www.ti.com/support	

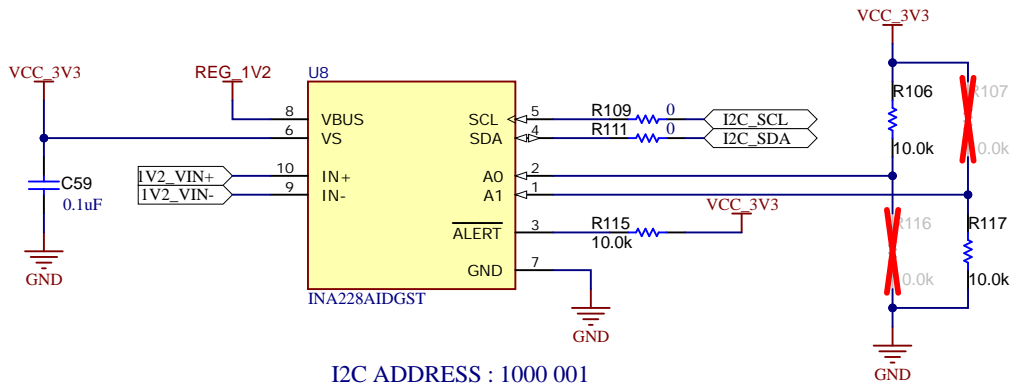
CURRENT SENSORS



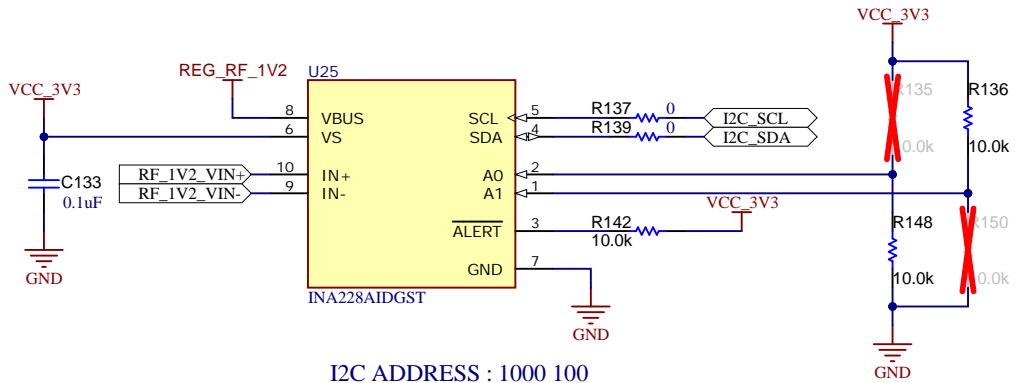
I2C ADDRESS : 1000 000



I2C ADDRESS : 1000 101

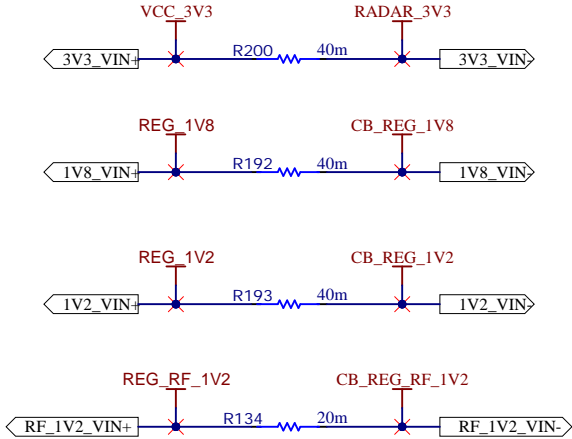


I2C ADDRESS : 1000 001



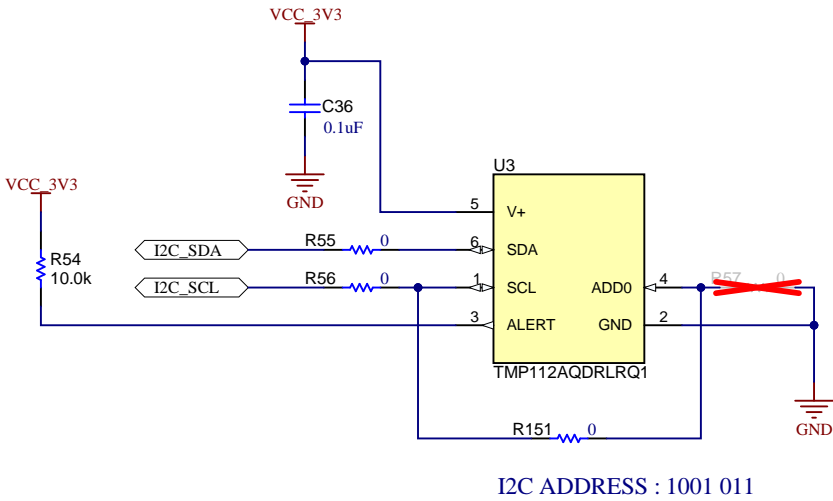
I2C ADDRESS : 1000 100

CURRENT SENSE RESISTORS



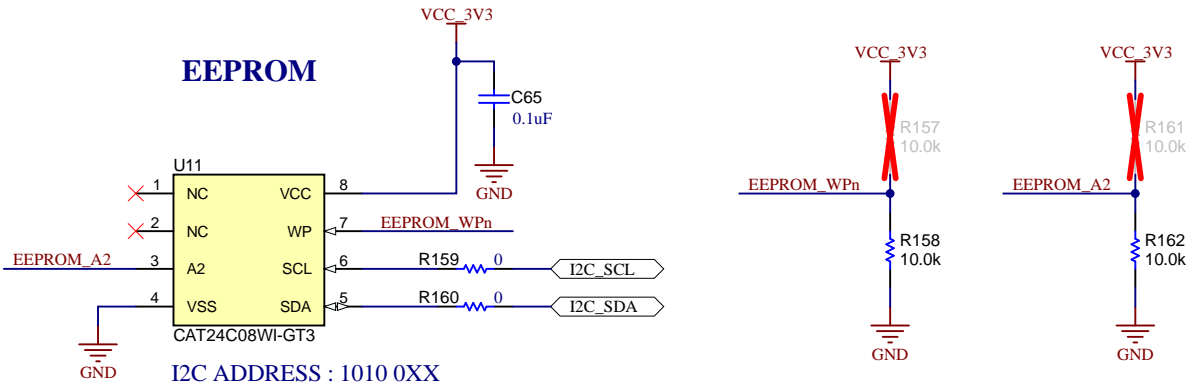
Design Note: 'Generic No ERCs' were placed intentionally on either sides of Current sense resistors

TEMPERATURE SENSOR



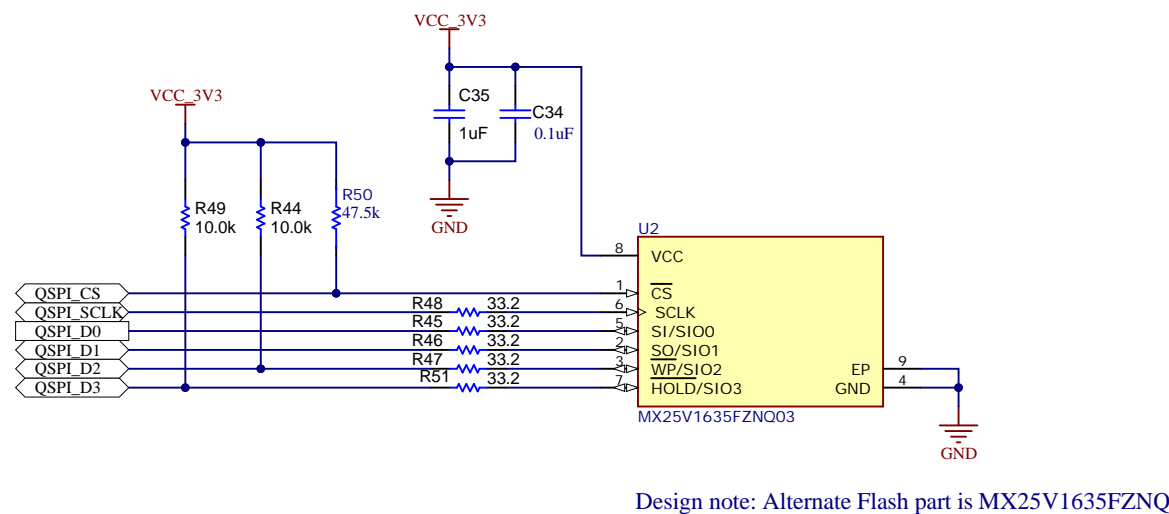
I2C ADDRESS : 1001 011

EEPROM

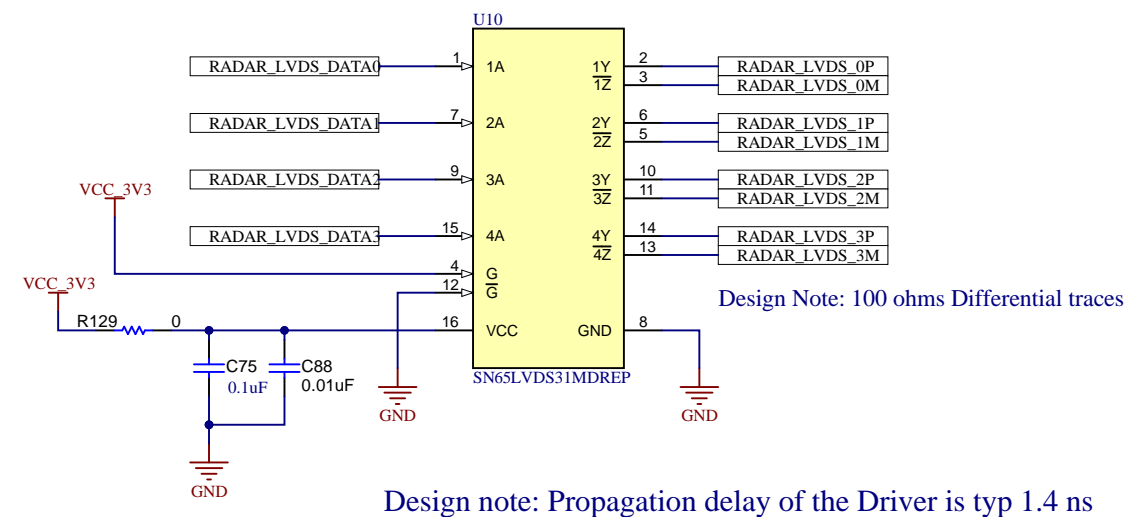


I2C ADDRESS : 1010 0XX

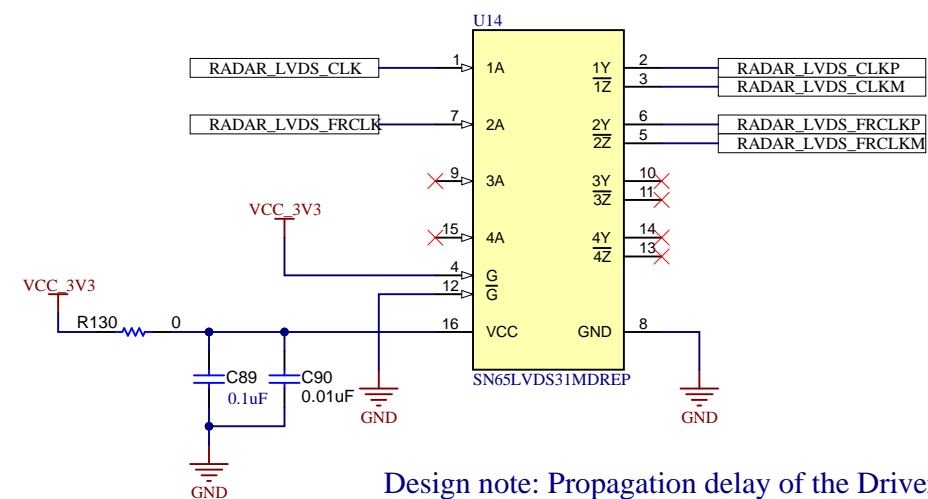
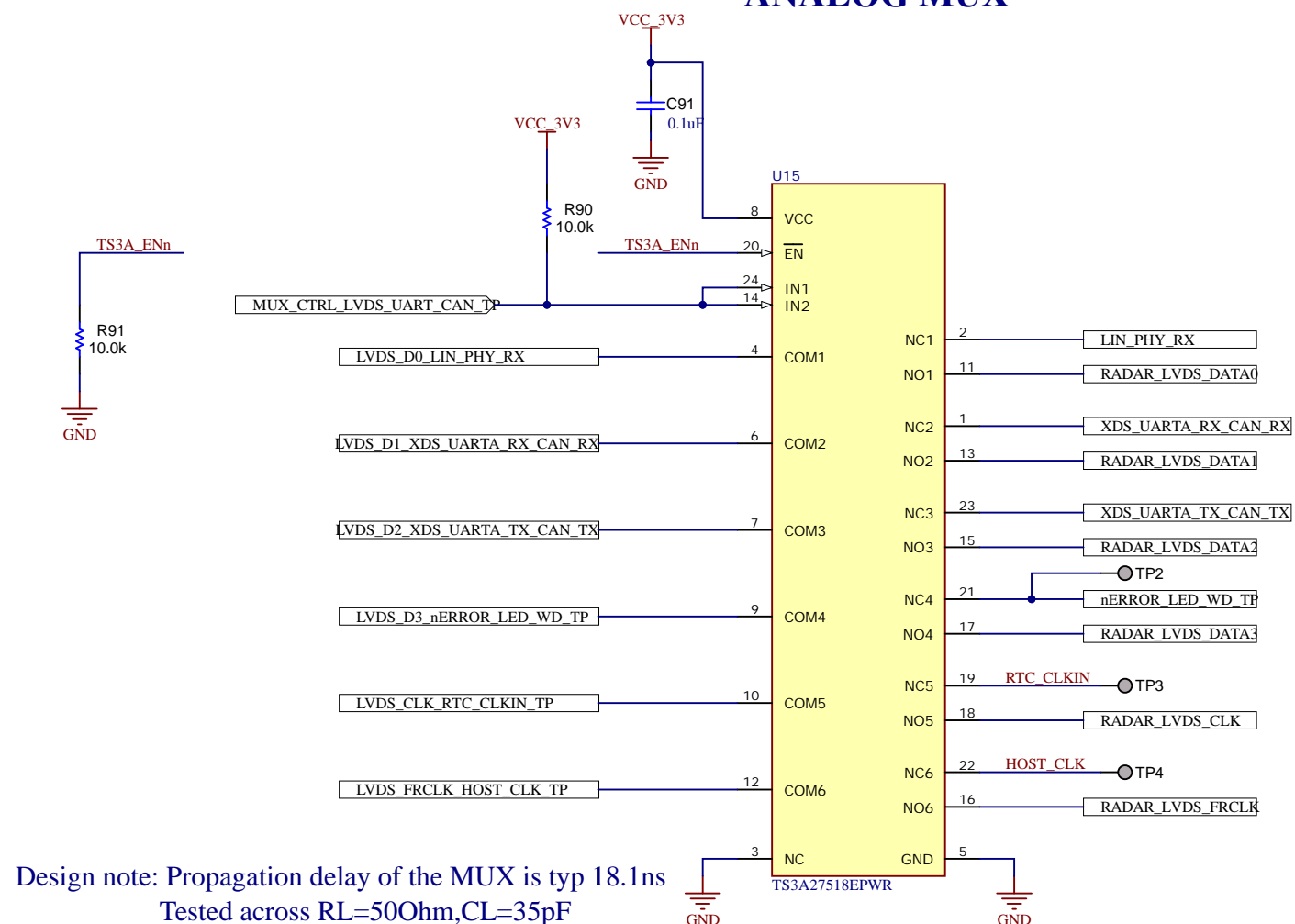
QSPI FLASH



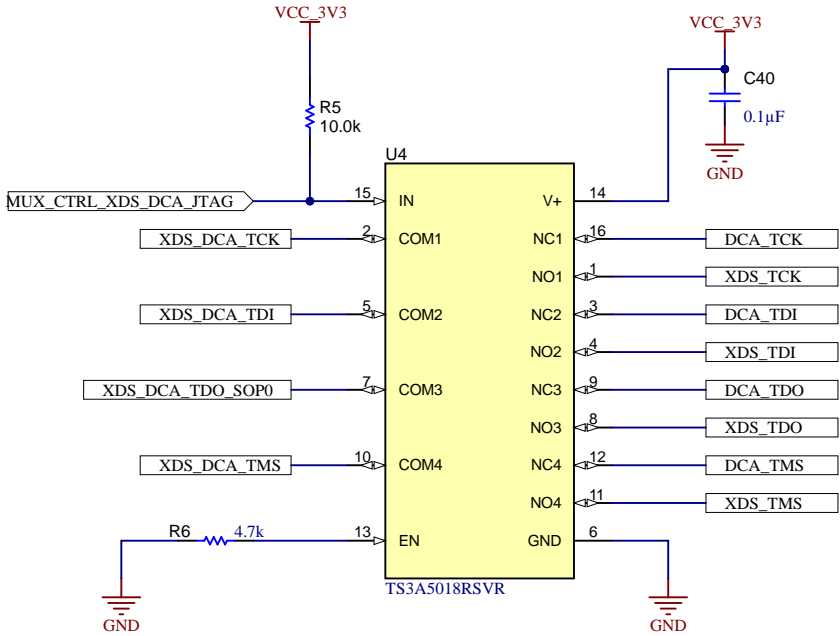
DIFFERENTIAL LVDS DRIVER



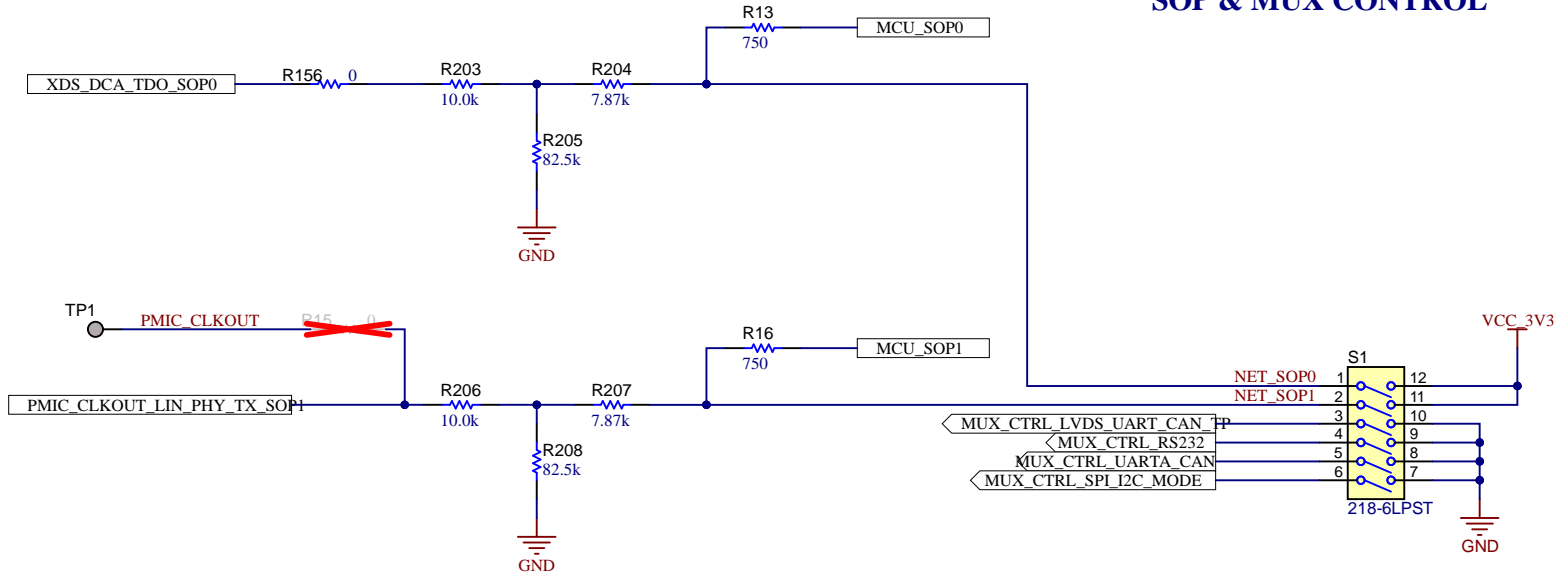
ANALOG MUX



ANALOG MUX -JTAG



SOP & MUX CONTROL



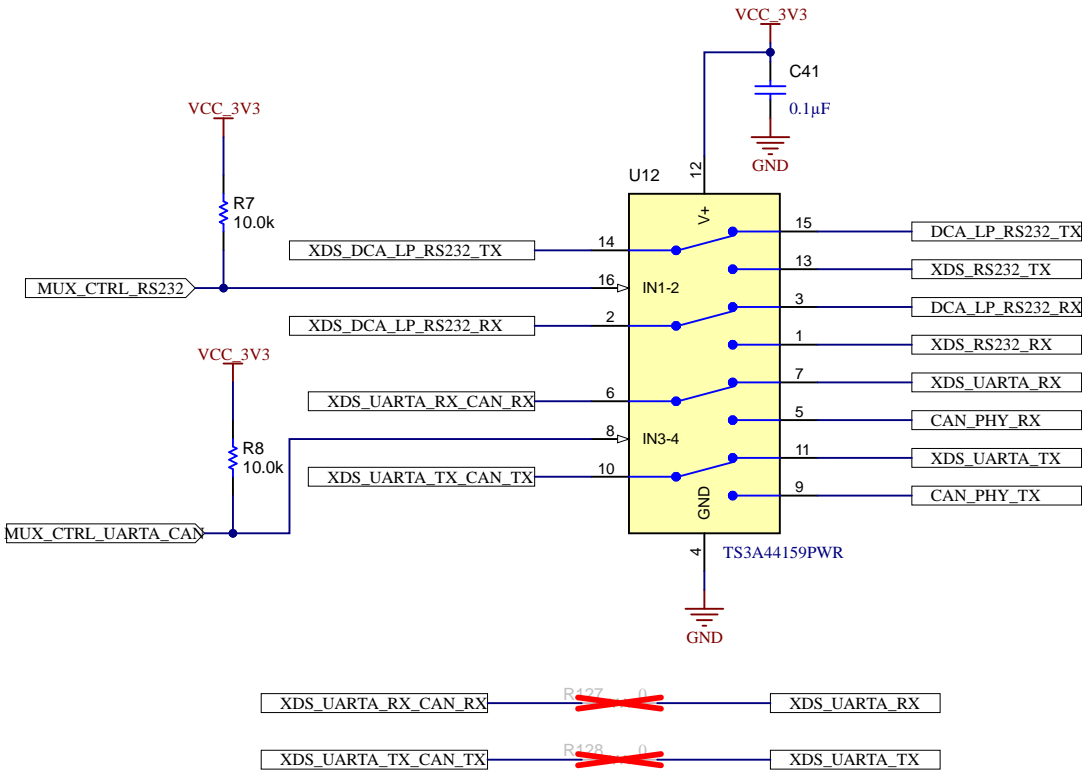
SOP CONFIGURATION

SOP Mode	PMIC_CLK_OUT, TDO	Combination (S1.2, S1.1)
SOP_MODE1	Device management mode / QSPI Flashing mode	0 0
SOP_MODE2	Application mode / Functional mode	0 1
SOP_MODE4	Debug mode / mmWave studio connectivity mode	1 1

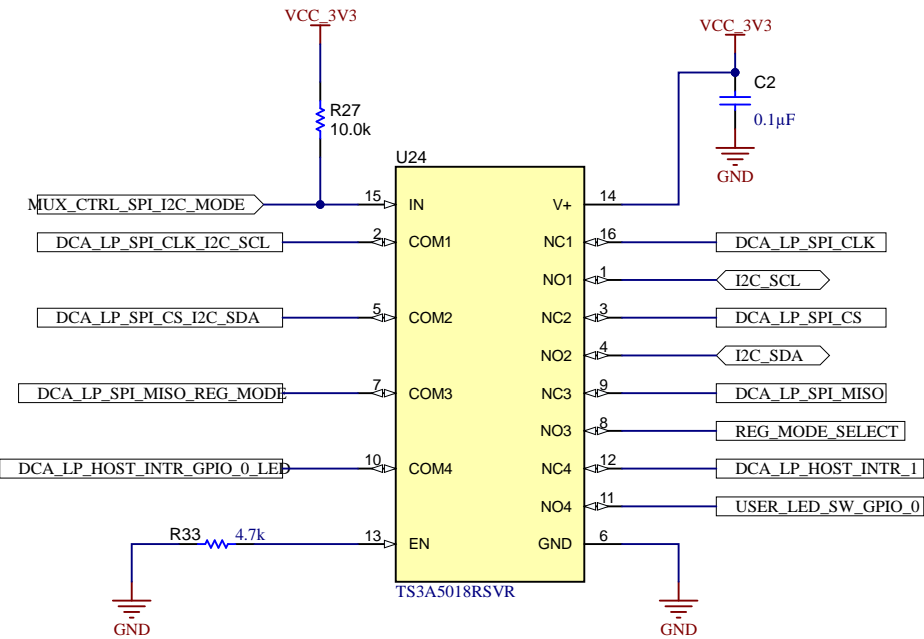
MUX TABLE

	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

UART -SWITCH



ANALOG MUX- SPI/I2C



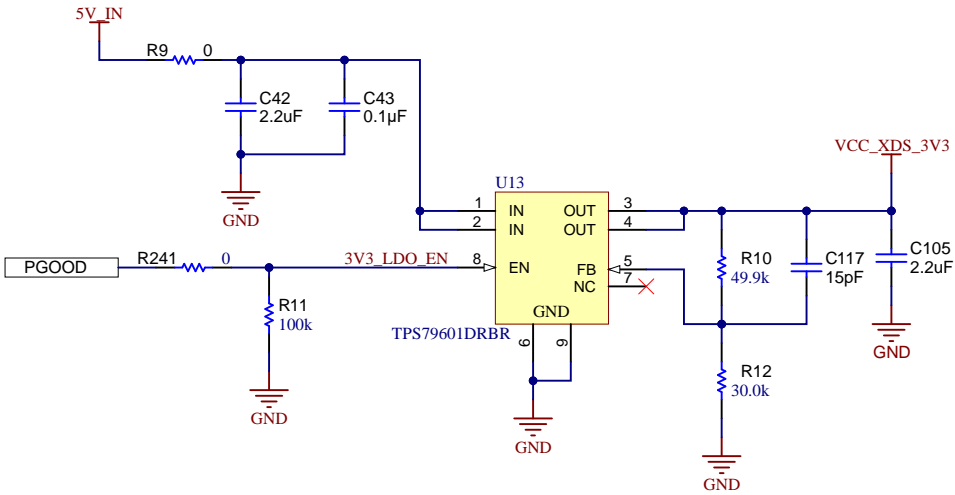
CONTROL TABLE

	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

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

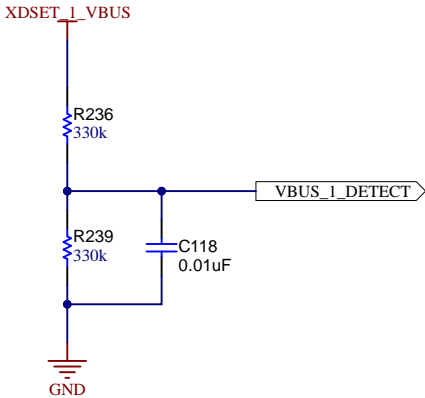
Orderable: AWRL6432BOOST	Designed for: Public Release	Mod. Date: 11-07-2023
TID #: N/A	Project Title: xWRL6432BOOST	
Number: PROC117	Rev: B	Sheet Title: ANALOG_MUX_SOP_CTRL
SVN Rev: Not in version control	Assembly Variant: 002_AWR	Sheet: 10 of 16
Drawn By: Mistral	File: PROC117B_Analog_Mux_SOP_Ctrl.SchDoc	Size: B
Engineer: Mistral	Contact: http://www.ti.com/support	

XDS110(1/2)

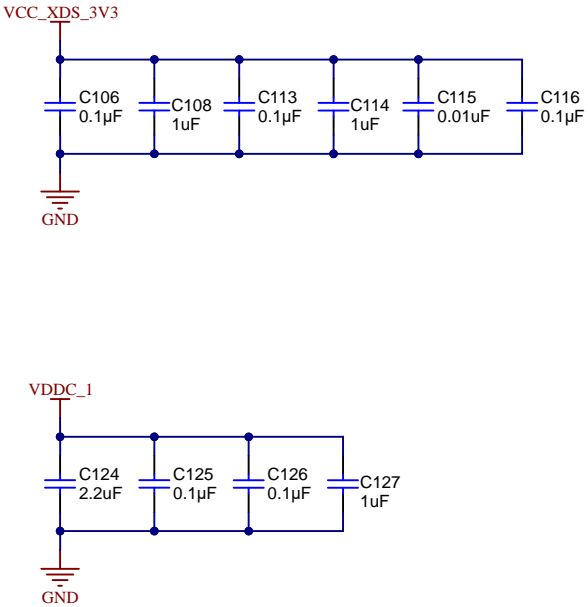


By Default LDO is disabled
When 3V3 DC-DC regulator is powered up, then it gets enabled

VBUS_DETECT



DECOUPLING CAPACITORS - XDS110



Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWRL6432BOOST	Designed for: Public Release	Mod. Date: 11-07-2023
TID #: N/A	Project Title: xWRL6432BOOST	
Number: PROC117	Rev: B	Sheet Title: XDS110_INTERFACE_1A
SVN Rev: Not in version control	Assembly Variant: 002_AWR	Sheet: 11 of 16
Drawn By: Mistral	File: PROC117B_XDS110_Interface_1A.SchDoc	Size: B
Engineer: Mistral	Contact: http://www.ti.com/support	

A

A

B

B

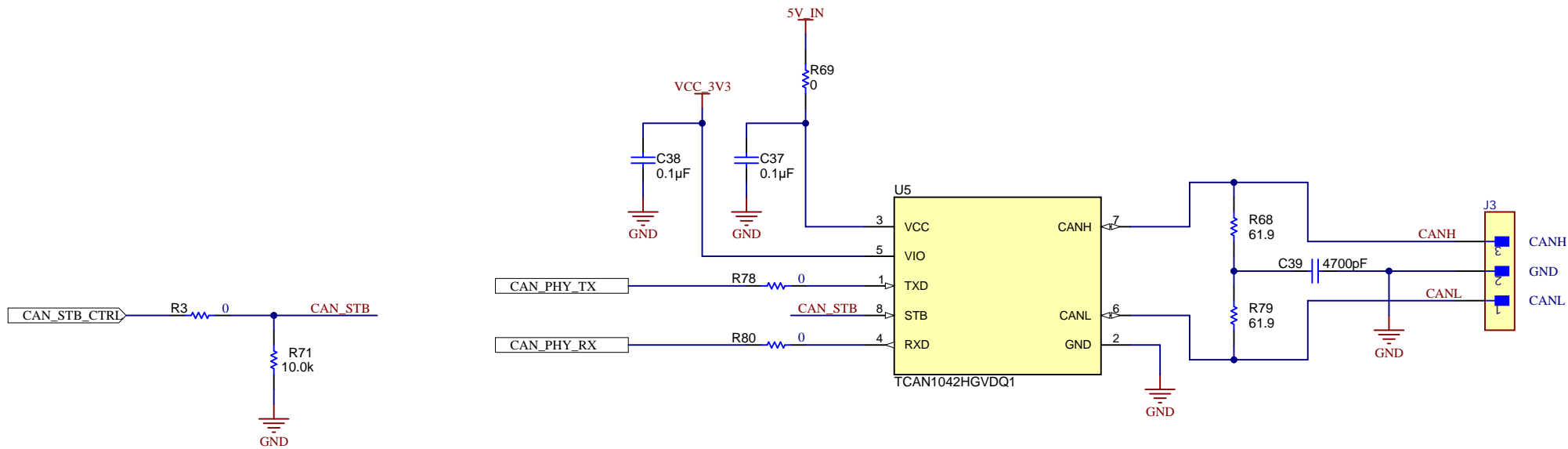
C

C

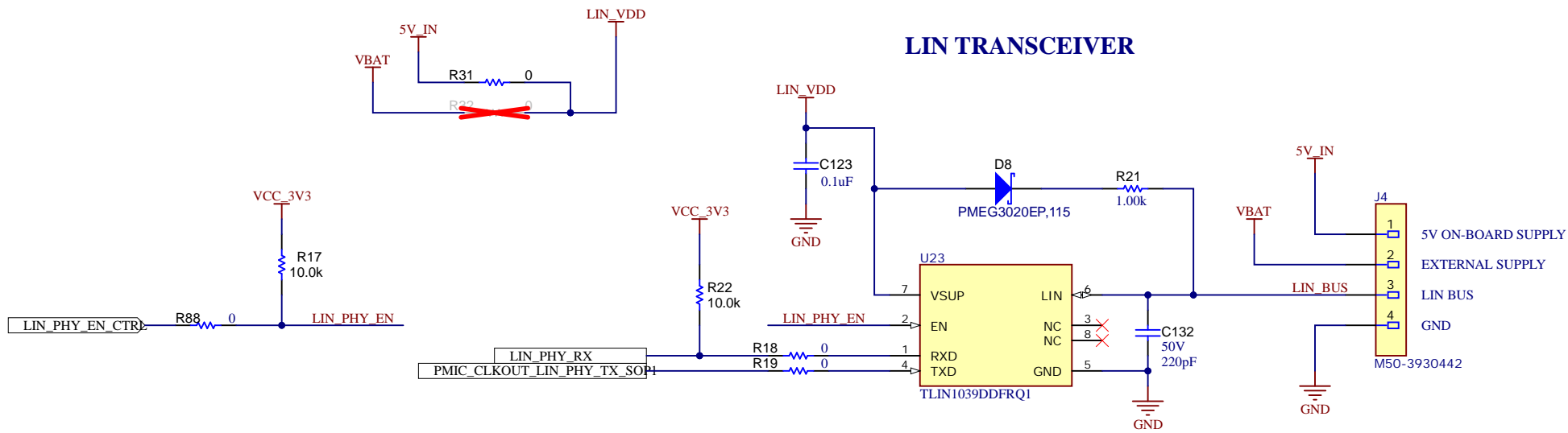
D

D

CAN TRANSCEIVER



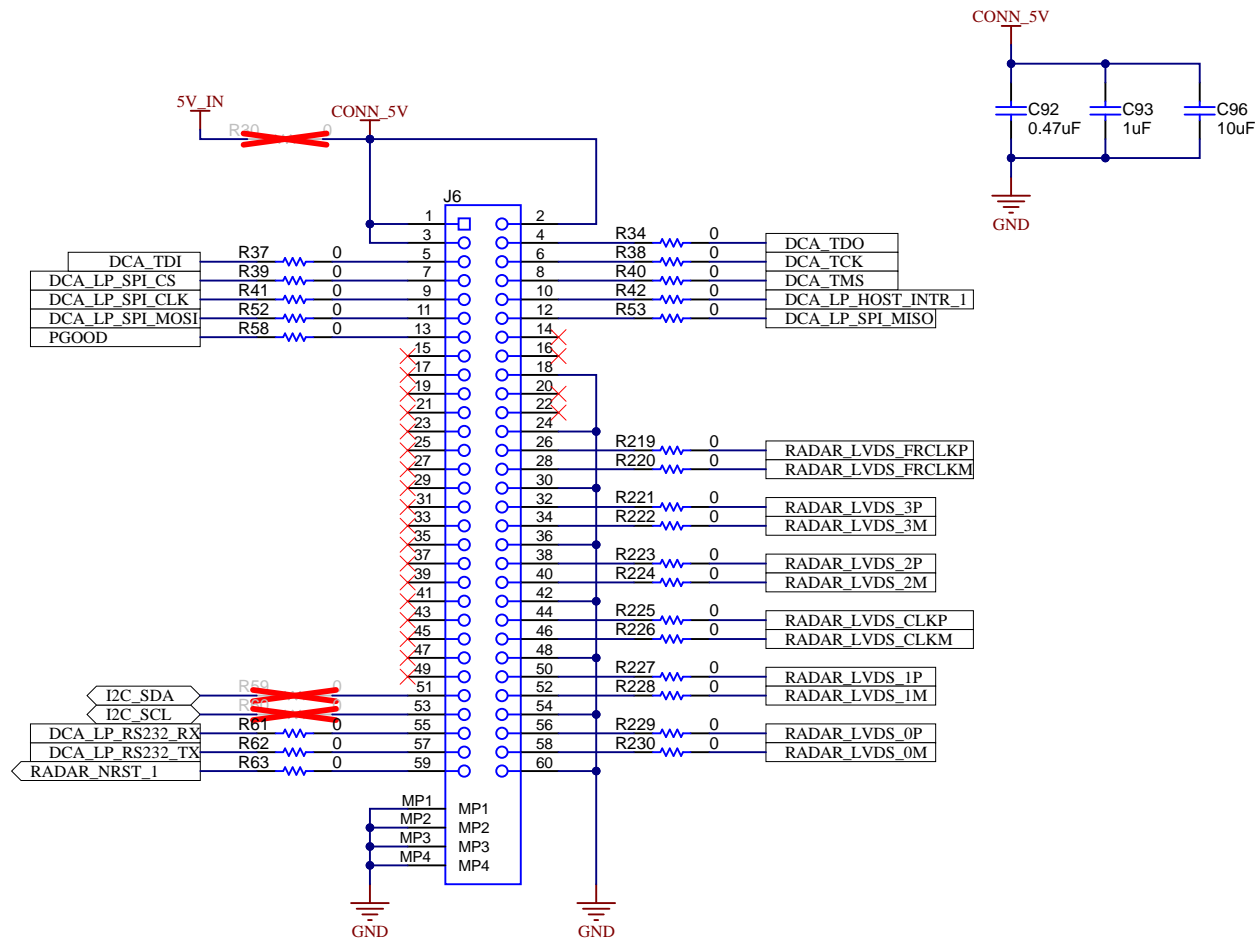
LIN TRANSCEIVER



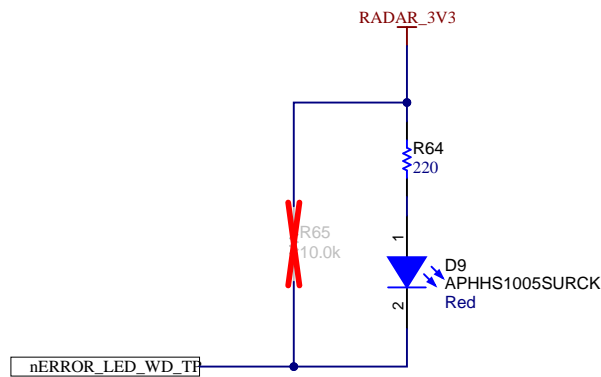
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: AWRL6432BOOST	Designed for: Public Release	Mod. Date: 11-07-2023
TID #: N/A	Project Title: xWRL6432BOOST	
Number: PROC117	Rev: B	Sheet Title: CAN LIN PHY INTERFACE
SVN Rev: Not in version control	Assembly Variant: 002_AWR	Sheet: 13 of 16
Drawn By: Mistral	File: PROC117B_CAN_LIN_PHY_Interface.SchDoc	Size: B
Engineer: Mistral	Contact: http://www.ti.com/support	

60-PIN HD CONNECTOR FOR DCA1000

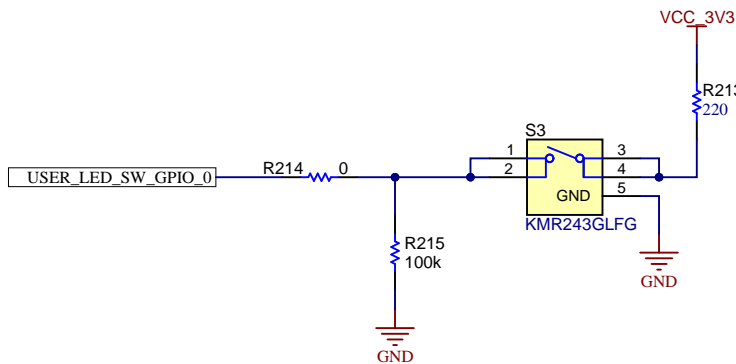


nERROR LED

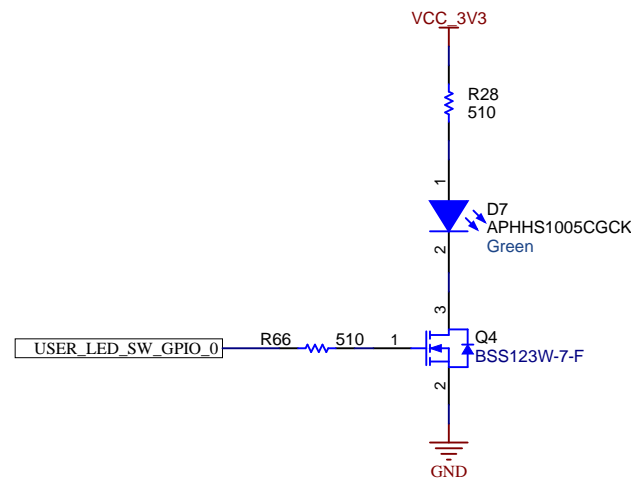


RESET, USER LED & SWITCHES

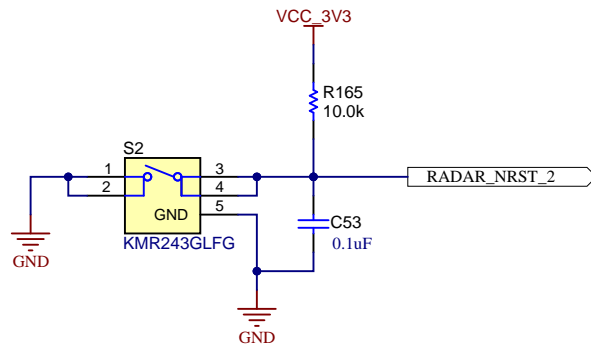
USER SWITCH



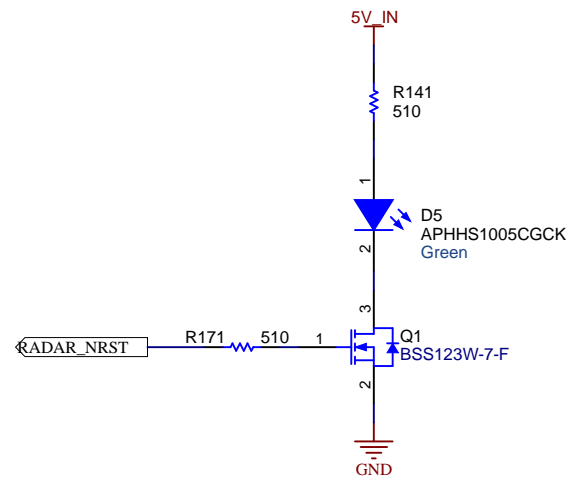
USER LED



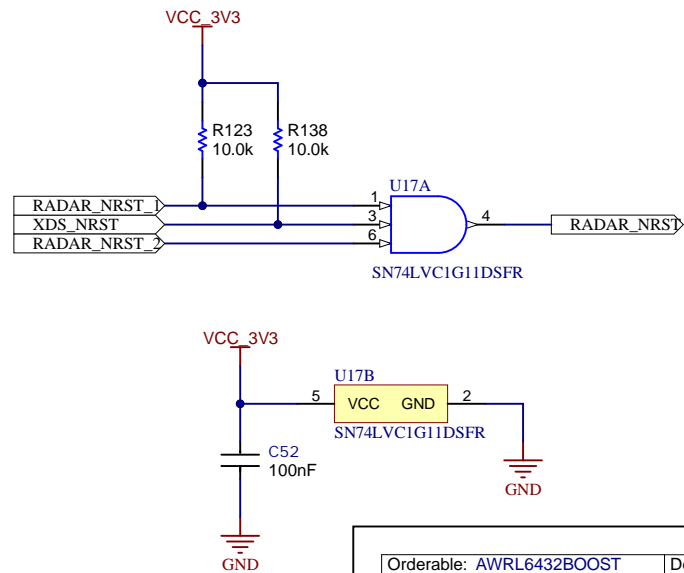
RESET SWITCH



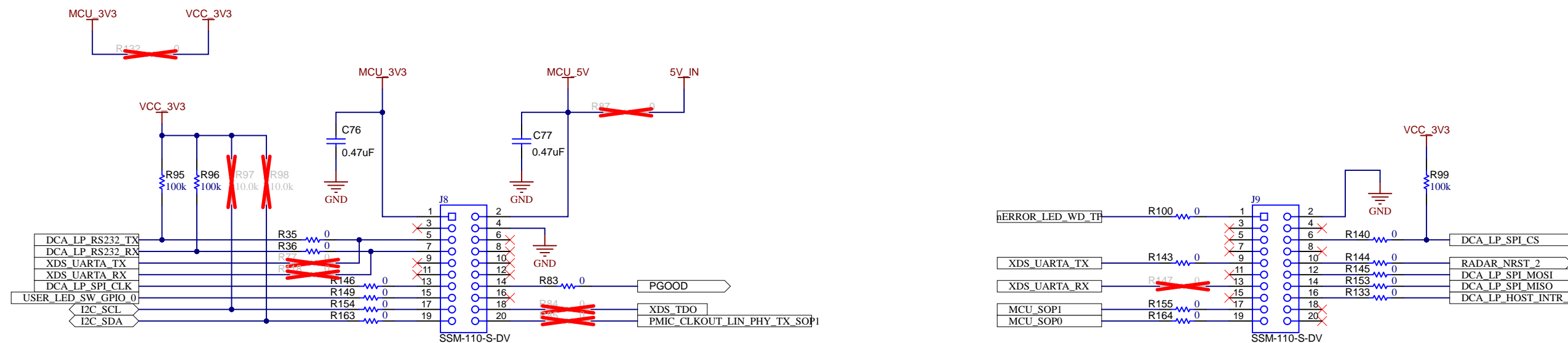
RESET LED



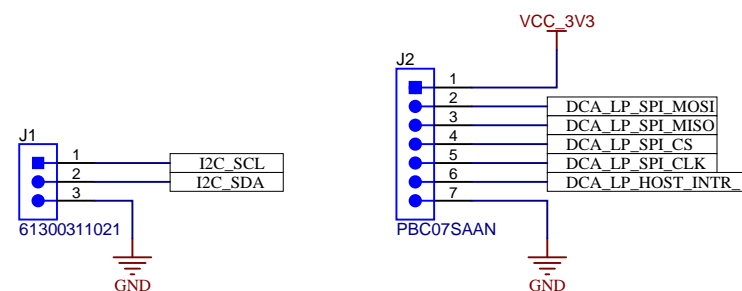
RESET



LP/BP CONNECTOR



I2C & SPI HEADER FOR FTDI INTERFACE





PCB Number: PROC117
PCB Rev: B

PCB
LOGO
Texas Instruments



PCB
LOGO
FCC disclaimer

PCB
LOGO
WEEE logo

CAUTION HOT SURFACE1



CAUTION HOT SURFACE

Variant/Label Table	
Variant	Label Text
001_IWR	IWRL6432BOOST
002_AWR	AWRL6432BOOST

LBL1

PCB Label

THT-14-423-10
Size: 0.65" x 0.20 "

CAPACITORS HIGHLIGHTED IN THE RED COLOR BOXES ARE ADDED FOR IMPROVEMENT AND THOSE ARE NOT MANDATORY.

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.

ZZ5

Assembly Note

INDICATION FOR COMPONENTS D* ARE GIVEN AT THEIR CATHODE SIDE.

Orderable: AWRL6432BOOST		Designed for: Public Release	Mod. Date: 03-07-2023
TID #: N/A		Project Title: xWRL6432BOOST	
Number: PROC117	Rev: B	Sheet Title: HARDWARE	
SVN Rev: Not in version control		Assembly Variant: 002_AWR	Sheet: 16 of 16
Drawn By: Mistral		File: PROC117B_EVM_Hardware.SchDoc	Size: B
Engineer: Mistral		Contact: http://www.ti.com/support	

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.