

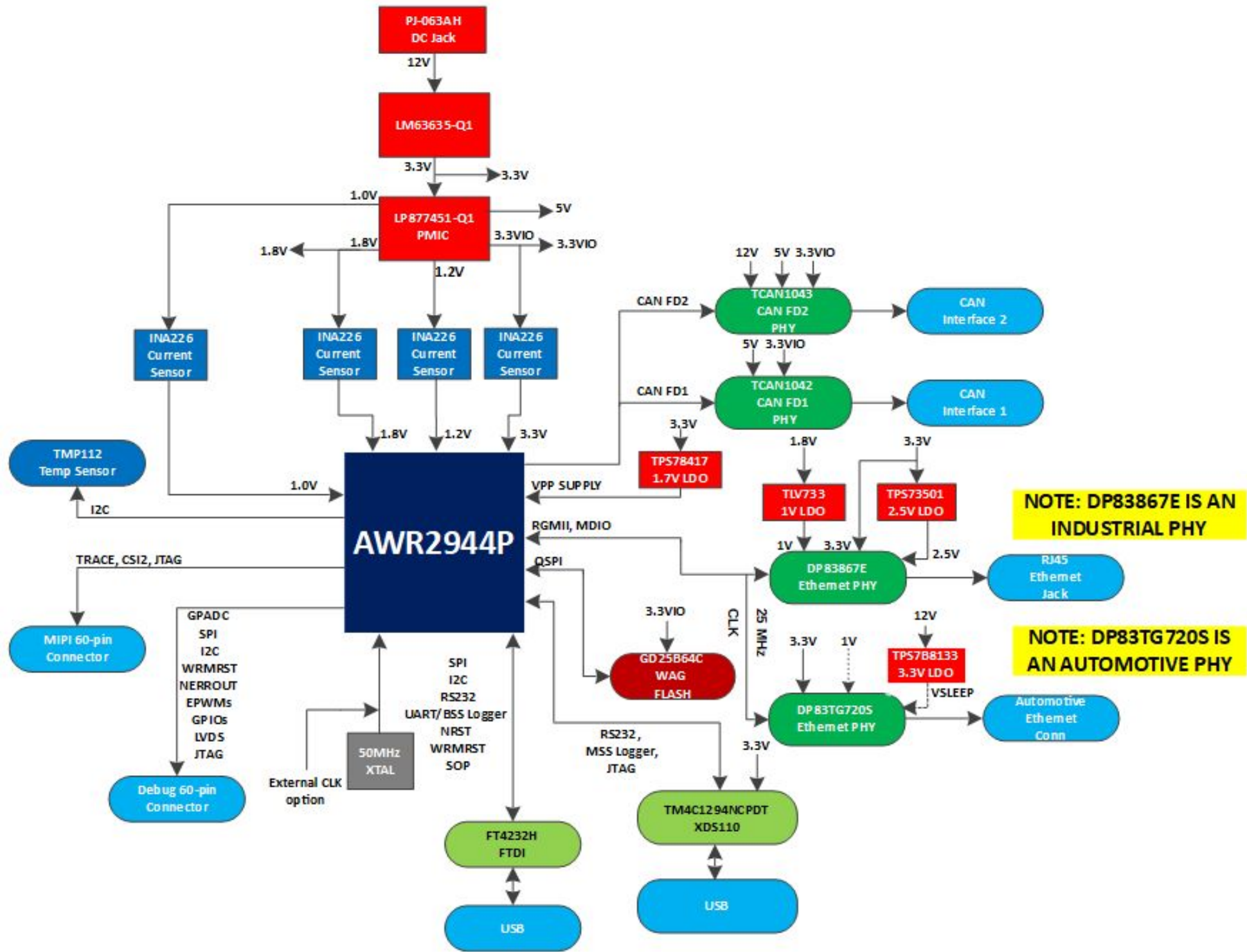
A

B

C

D

BLOCK DIAGRAM



Revision History

Rev	ECN #	Approved Date	Approved by	Notes
REV B	01	16-04-2021		Implemented PMIC review comments from TI
REV B	02	20-04-2021		Implemented Automotive Ethernet review comments from TI
REV B	03	20-05-2021		Updated assembly property of R196 to Fitted. Updated assembly property of R371 & R379 to Not Fitted.
REV B	04	21-05-2021		BSS_UARTA_TX signal is removed from XDS110 and connected to C port of FTDI Updated assembly property of R160 & R164 to Not Fitted. Updated assembly property of R131 to Fitted.
REV B	05	25-05-2021		Part number of R265, R270, R275, R281 and C167 changed Added 0 ohm resistors in the LVDS path Optionl path for LVDS data lanes TX2 and TX3 added
REV B	06	03-06-2021		Auto Ethernet ESD Diodes (D18, D19) part number changed to TPD1E05
REV B	07	07-06-2021		10uF decap (C110) moved to 1V8_CLK supply from 1V8_VCO supply
REV B	08	14-06-2021		0 ohm resistor (R72) added in J19.13
REV B	09	16-06-2021		R20.2 net name changed to 1V0_RF2
REV B	10	17-06-2021		Updated assembly property of R244 to Not Fitted
REV B	11	21-06-2021		Removed snubber circuits from the PMIC Added provision for LC filter on 1.0V and 1.8V supplies Combined 1V0_RF1 & 1V0_RF2 into a single 1V0 supply and removed one of the current sensor
REV B	12	22-06-2021		GPADC2 input changed to 1V2.
REV B	13	23-06-2021		Updated assembly property of C179, C181, J1, J5, C127, R71, R20, C55 & J4 Removed C122 and C143. Added provision for 10uF cap on VDDA supply R259 changed to BLM18KG601SH1. C154 & C182 replaced with 0.01uF cap
REV B	14	24-06-2021		AWR 3.3V supply changed to pre-regulator output by default (REGOUT_3V3) Added resistor option to take AWR 3.3V supply from Chariot VIO
REV B	15	06-07-2021		Updated R331 and R332 to 1k ohm resistor Updated R347, R262, R261, R263 to 510 ohm resistor VDDIO supply of Auto Ethernet PHY (U4.34) changed to 3V3_VIO Populated R116 by default and R199 changed to DNI
REV B	16	09-07-2021		FB1 changed to BLM18AG102SH1D
REV B	17	13-07-2021		Updated assembly property of C7, R14, R291, R67 & R70
REV B	18	16-07-2021		Block diagram updated
REV B	19	17-09-2021		R13 & R17 are made mountable to control CAN STB from PMIC INT
REV C	20	19-04-2022		Added L10 Inductor(4.7uH) at PMIC Input
REV D	21	29-06-2022		Added R200, L10, C143, C199, C200, C201, C202, R210 Changed PMIC Enable Pullup, VCCA and Boost input supply to PVIN3V3
REV D	22	02-08-2023		Updated C106 & C108 to 3.9pF GCM1555C1H3R9BA16D R6 & R8 are made DNP and R7 as mountable
REV A	23	21-05-2024		Updated to AWR2944P Device with support for OSC_CLK_OUT_ETH signal & Changed U4 to 1Gbps AUTO_ETH PHY with BOM updates and POE provision
REV A	24	25-06-2024		Changed Y3 to 50MHz. R301, R309 made mountable and R303, R312 made DNP
REV A	25	26-08-2024		Updated L6 & D11 part numbers

TABLE OF CONTENTS

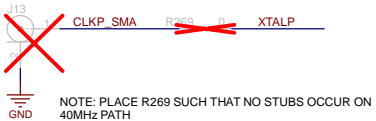
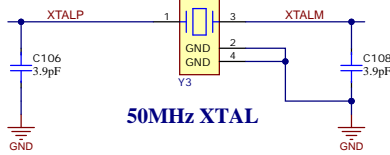
SHEET NO.	SHEET NAME
1	COVER SHEET
2	IO_REFERENCE
3	PWR_REFERENCE
4	DECOUPLING_REFERENCE
5	QSPI_FLASH_REFERENCE
6	PMIC_REFERENCE
7	3V3_SUPPLY_REFERENCE
8	SOP_REFERENCE
9	PWR_RST_LED
10	VPP_LDO
11	ETHERNET_PWR
12	ETHERNET_PHY
13	ETHERNET_MAGNETICS
14	AUTO_ETHERNET_PHY
15	AUTO_ETHERNET_CONN
16	FTDI_PWR
17	FTDI
18	XDS110_INTERFACE_1A
19	XDS110_INTERFACE_1B
20	JTAG_EMU_CONNECTOR
21	DEBUG_CONNECTOR
22	CAN_INTERFACE
23	CURRENT_SENSORS
24	TEMP_SENSORS
25	HARDWARE

Orderable: AWR2944PEVM	Designed for: Public Release	Mod. Date: 8/26/2024
TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 1 of 25
Drawn By:	File: PROC194A_CoverSheet.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

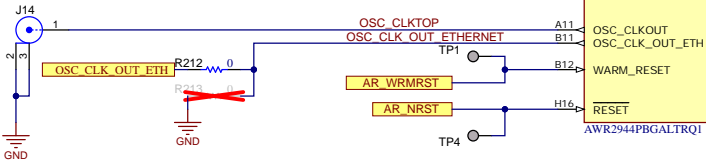
AWR2944P IO REFERENCE

JTAG, RESET, ERROR, CLKOUT, LVDS, CSI, GPADC, CLK

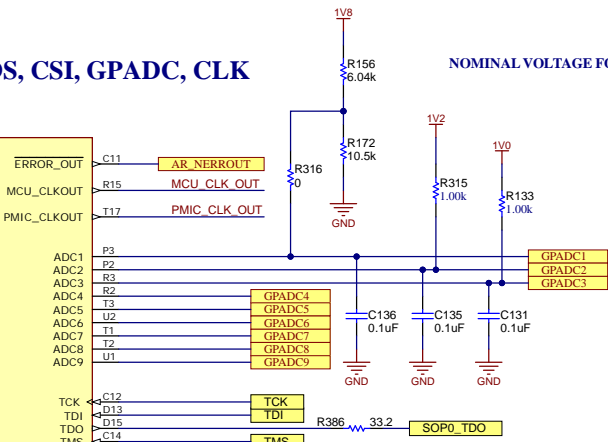
50MHZ CLOCK SOURCES



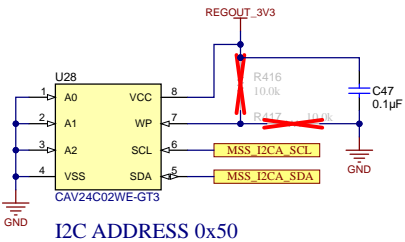
50 ohm GCPW traces to antenna



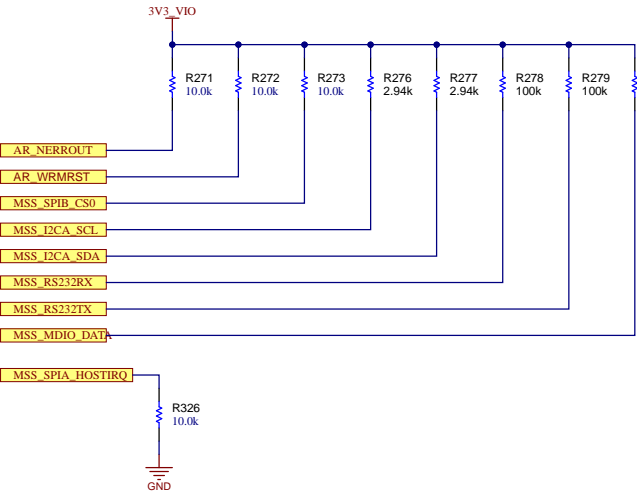
NOMINAL VOLTAGE FOR ADC1 = 01.142V



BOARD ID EEPROM

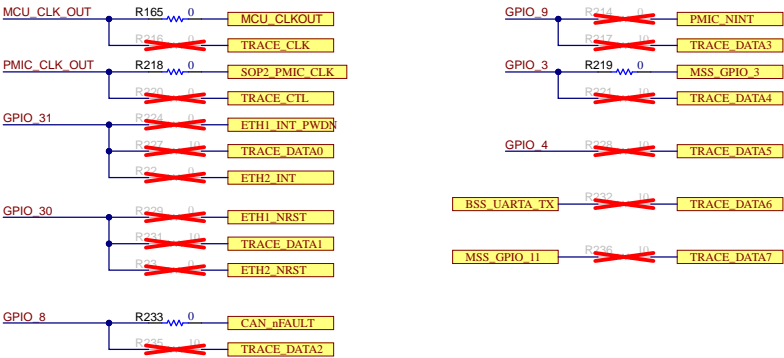
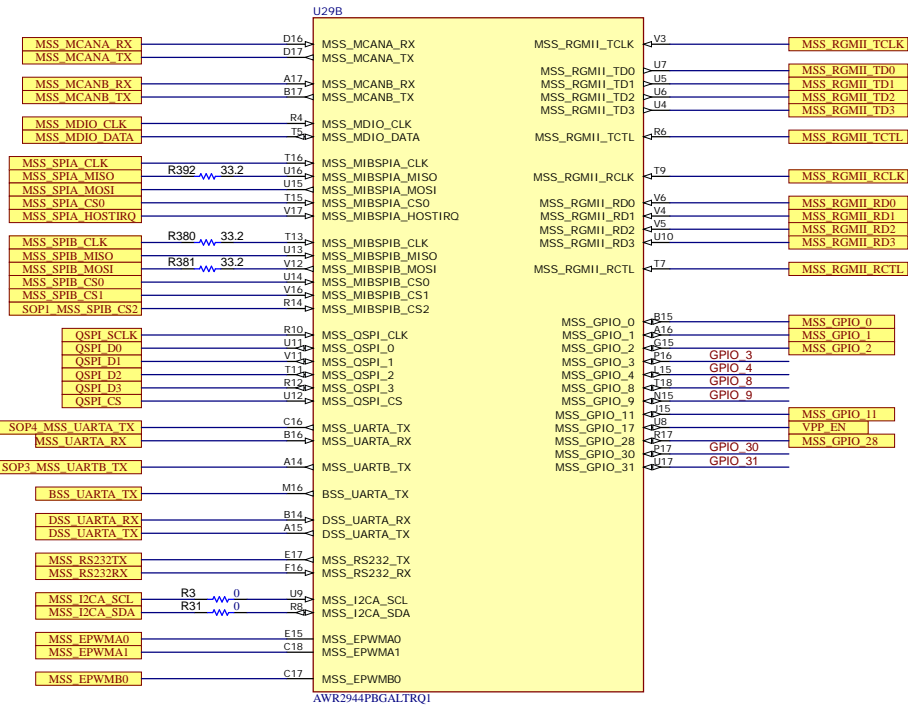
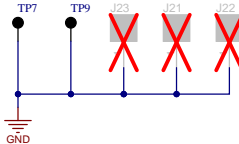


PULLUPS/DOWNS



CAN, MDIO, SPI, QSPI, UART, EPWM, RGMII, GPIO

GND TEST POINTS



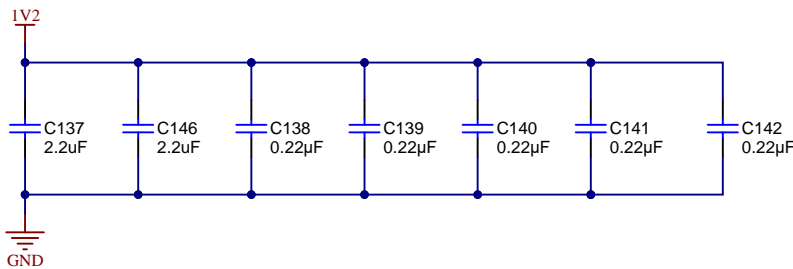
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A

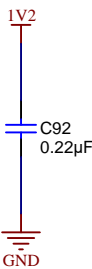


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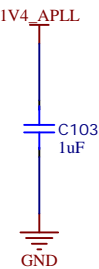
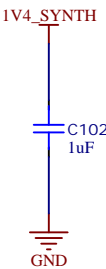
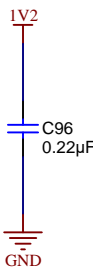
1.2V DIGITAL SUPPLY



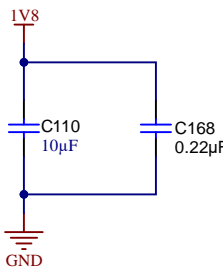
SRAM SUPPLY



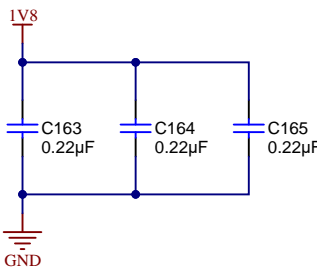
VNWA SUPPLY



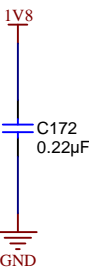
1.8V CLOCK SUPPLY



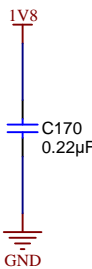
1.8V IO SUPPLY



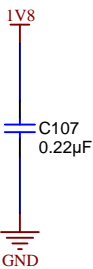
1.8V LVDS SUPPLY



1.8V CSI SUPPLY



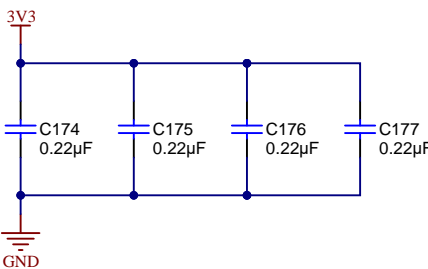
1.8V PM SUPPLY



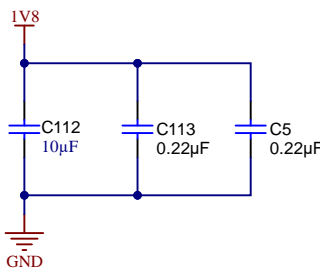
1.8V VCO SUPPLY



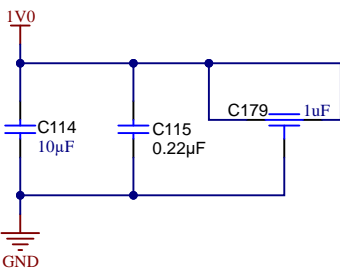
3.3V IO SUPPLY



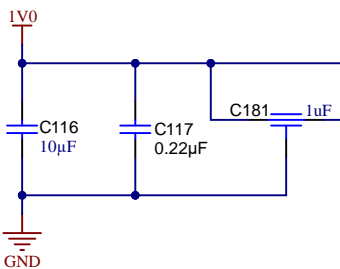
1.8V BB SUPPLY



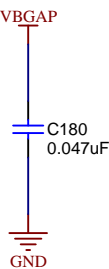
RF1 SUPPLY



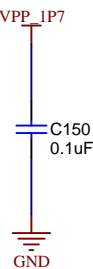
RF2 SUPPLY



BANDGAP SUPPLY



VPP SUPPLY



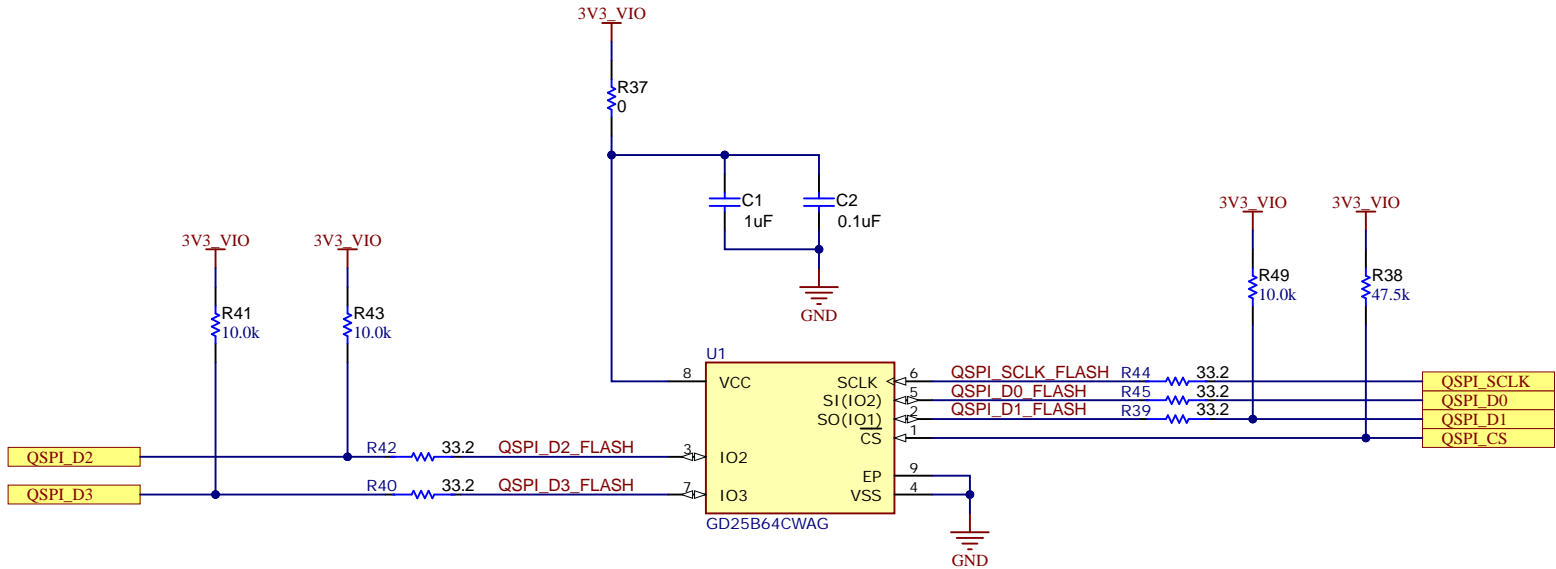
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TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 4 of 25
Drawn By:	File: PROC194A_Decoupling_Reference.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

References

[GD25B64CWAG Datasheet](#)

QSPI FLASH REFERENCE



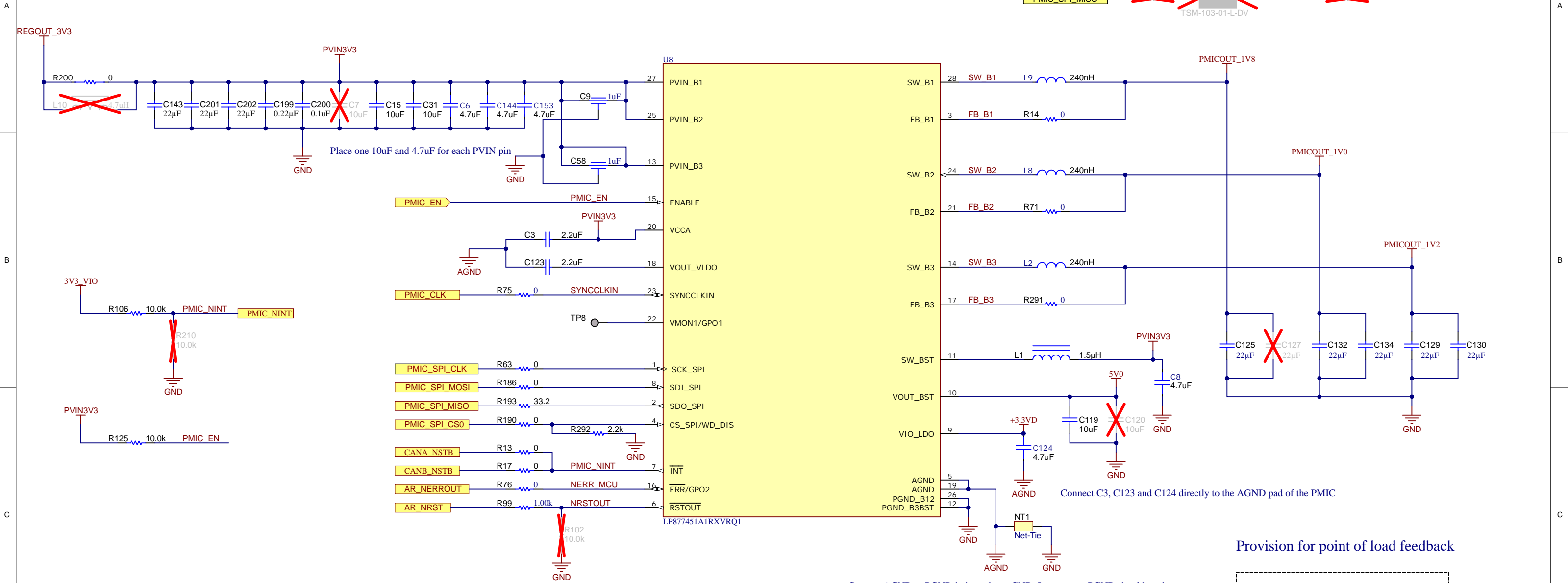
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SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 5 of 25
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Engineer: James MURDOCK	Contact: http://www.ti.com/support	

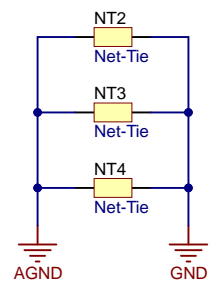
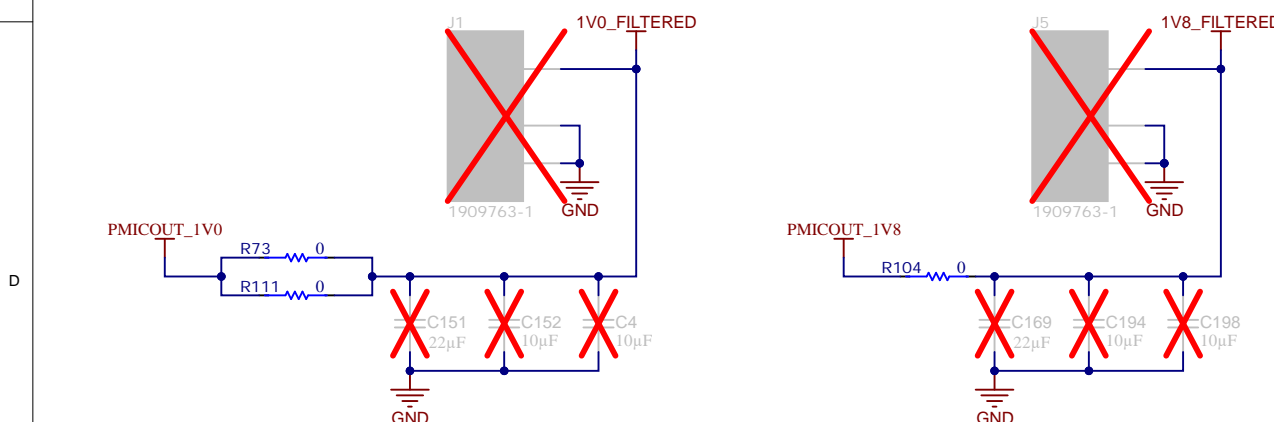
References

PMIC REFERENCE

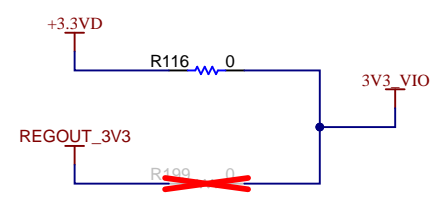
DEBUG TEST PINS



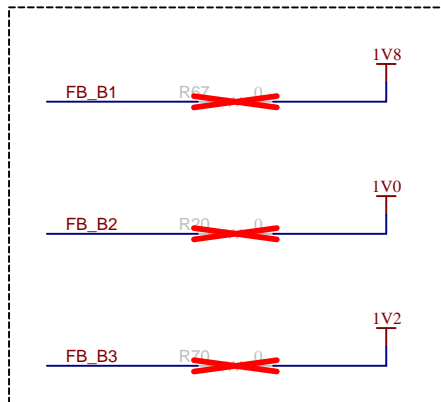
PMIC LC FILTER



Connect AGND to PGND in inner layer GND. In any case, PGND should not be connected to power pad on layer on which PMIC is placed

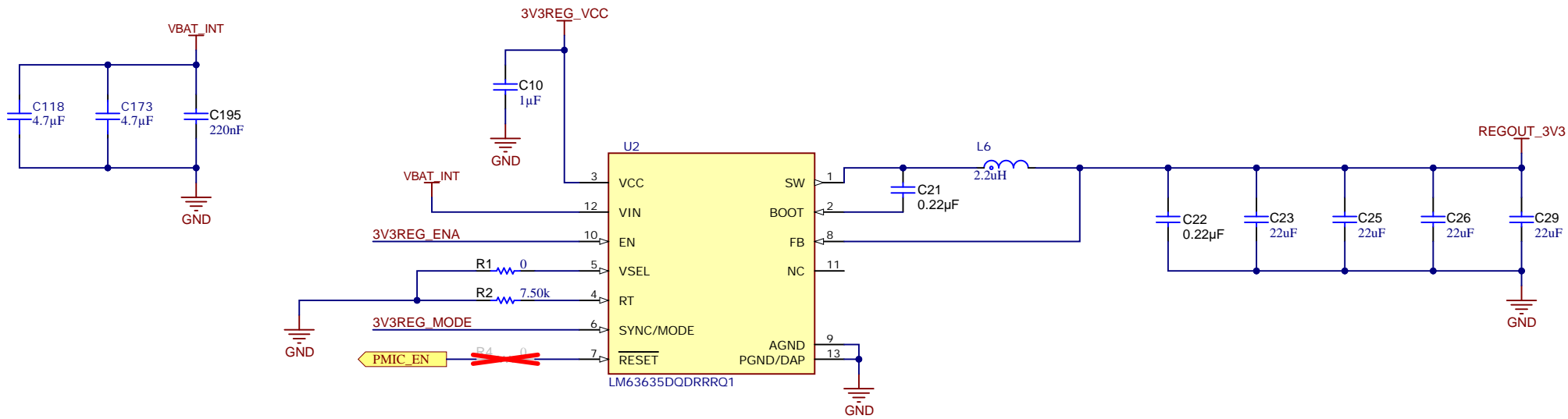


Provision for point of load feedback



References

3V3 SUPPLY REFERENCE

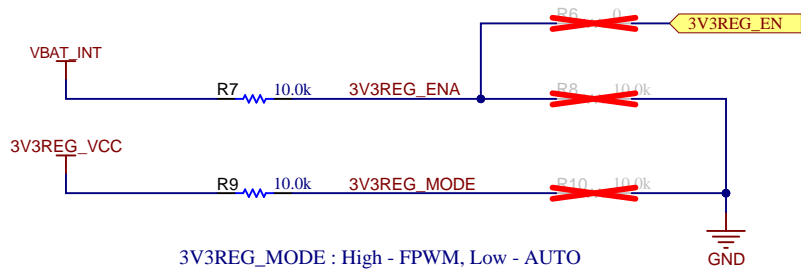


Switching Frequency : 2.1 MHz

Mode : Forced PWM

Output Voltage : Fixed 3.3

Output current limit : 3.25A



3V3REG_MODE : High - FPWM, Low - AUTO

Orderable: AWR2944PEVM	Designed for: Public Release	Mod. Date: 8/26/2024
TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 7 of 25
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Engineer: James MURDOCK	Contact: http://www.ti.com/support	



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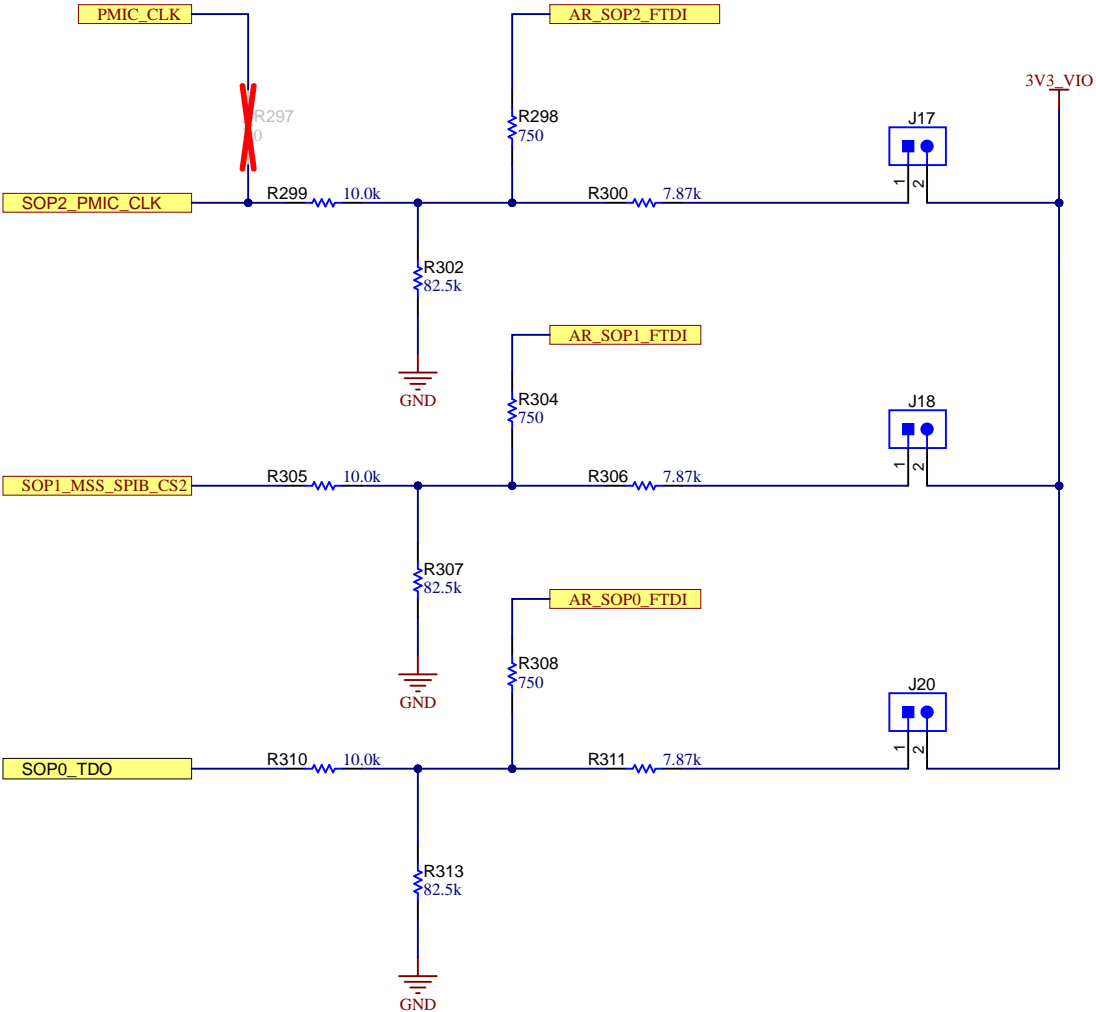
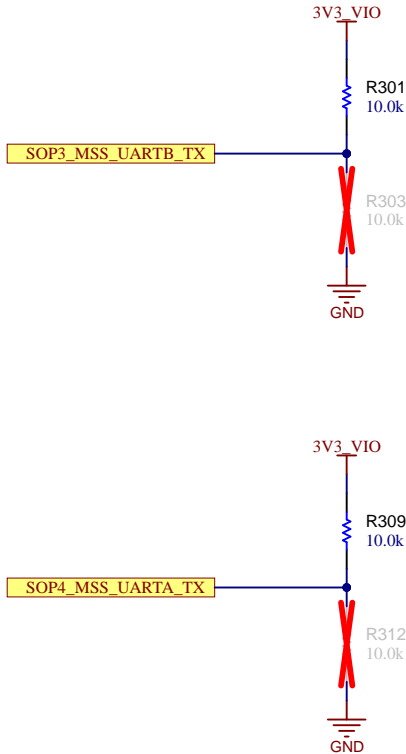
SOP REFERENCE

XTAL DETECT SOP CONFIG

SOP4, SOP3	
40 MHz	00
45.1584 MHz	01
49.152 MHz	10
50 MHz	11

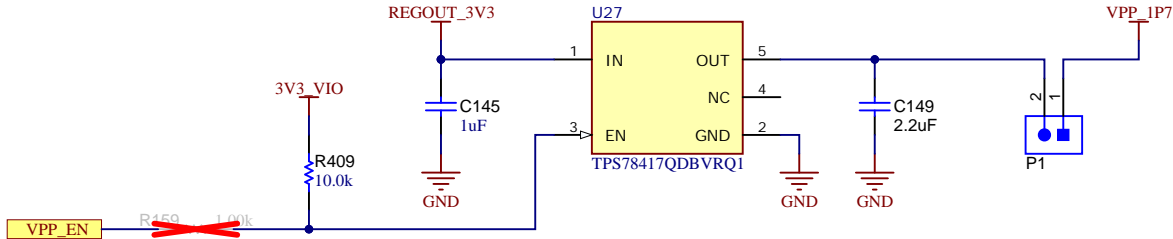
SOP2, SOP1, SOP0

SOP_MODE1	SCAN/ATPG	010
SOP_MODE2	DEV/FLED/ORBIT	011
SOP_MODE3	THB	000
SOP_MODE4	FUNC	001
SOP_MODE5	DEV MANAGEMENT	101



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Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 8 of 25
Drawn By:	File: PROC194A_SOP_Reference.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

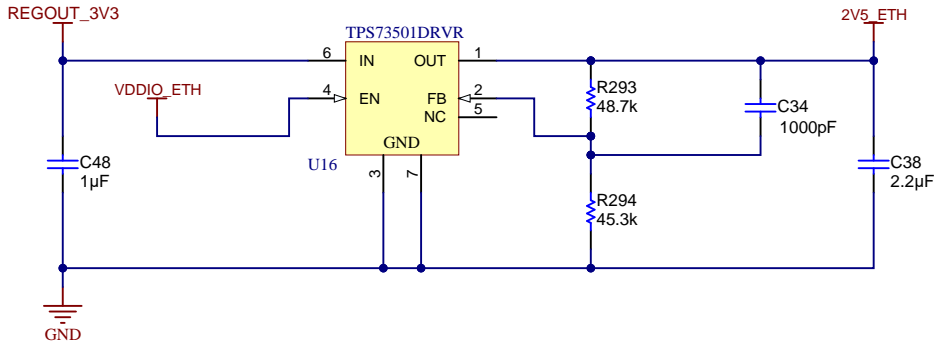


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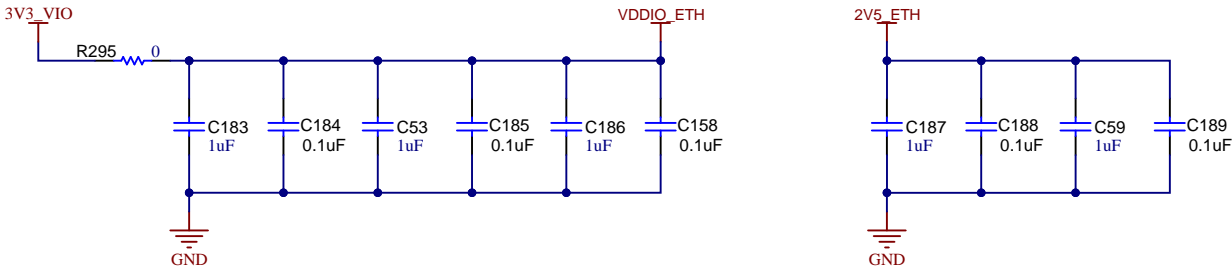
- [TPS73501 Datasheet](#)
- [TLV733P Datasheet](#)

ETHERNET POWER

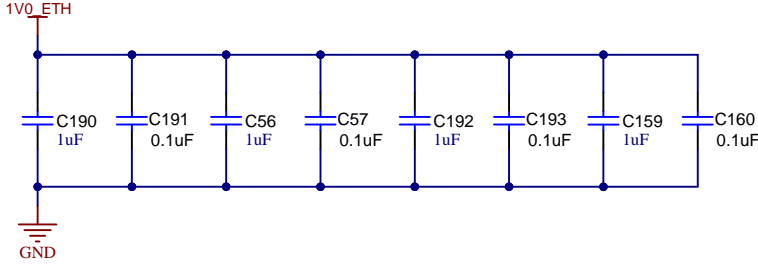
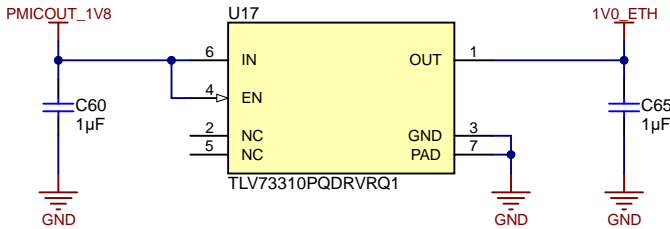
2.5V ANALOG SUPPLY



DECOUPLING CAPS



1V ANALOG SUPPLY

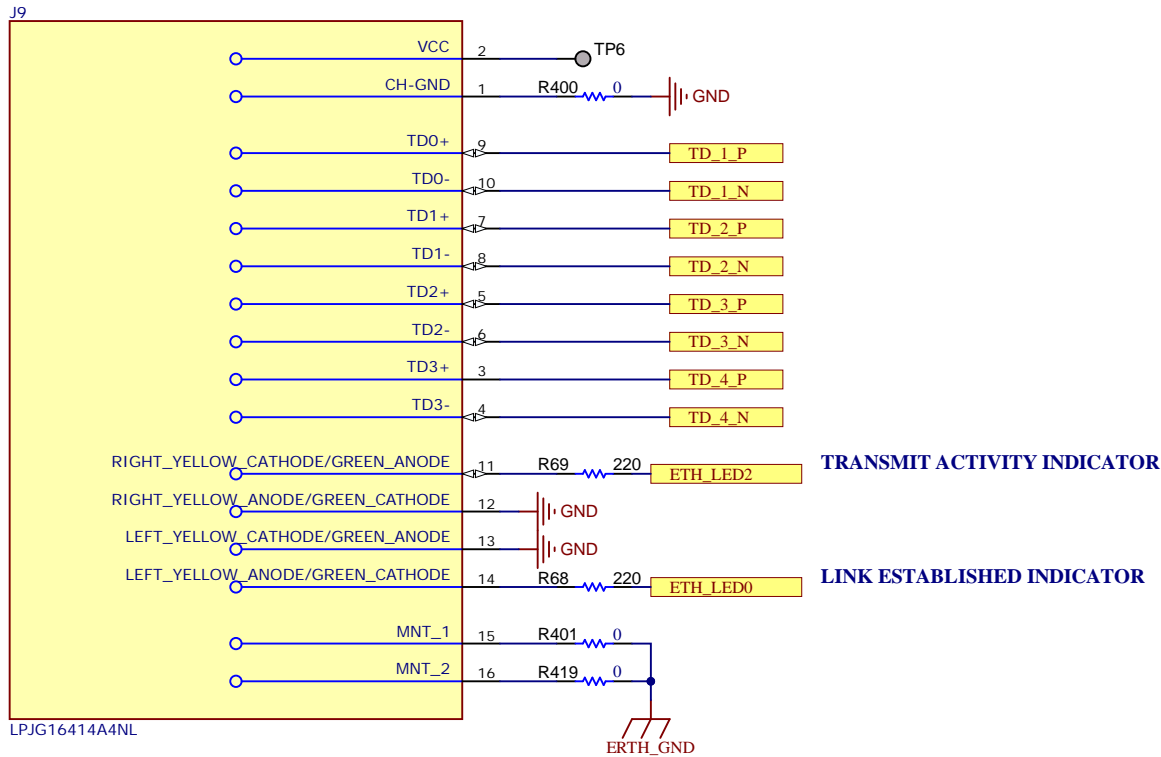


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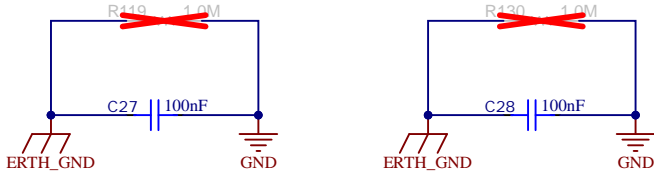
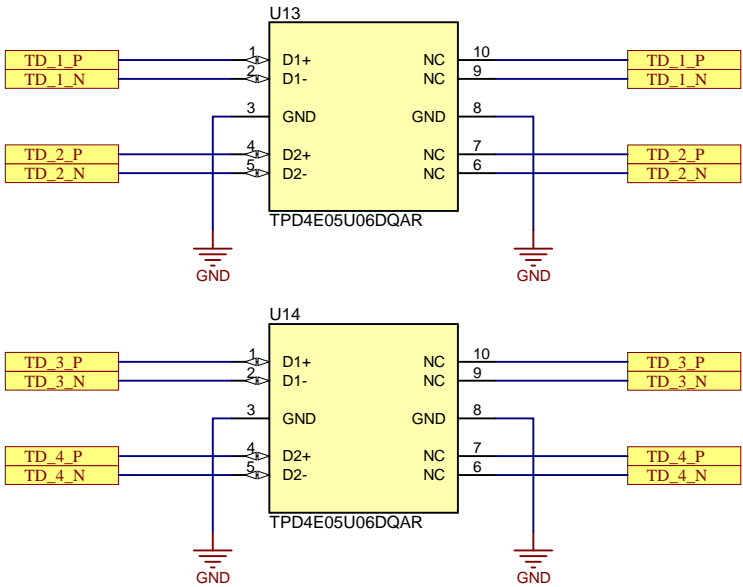
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Drawn By:	File: PROC194A_Ethernet_PWR.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

ETHERNET MAGNETICS

RJ45 WITH MAGJACK

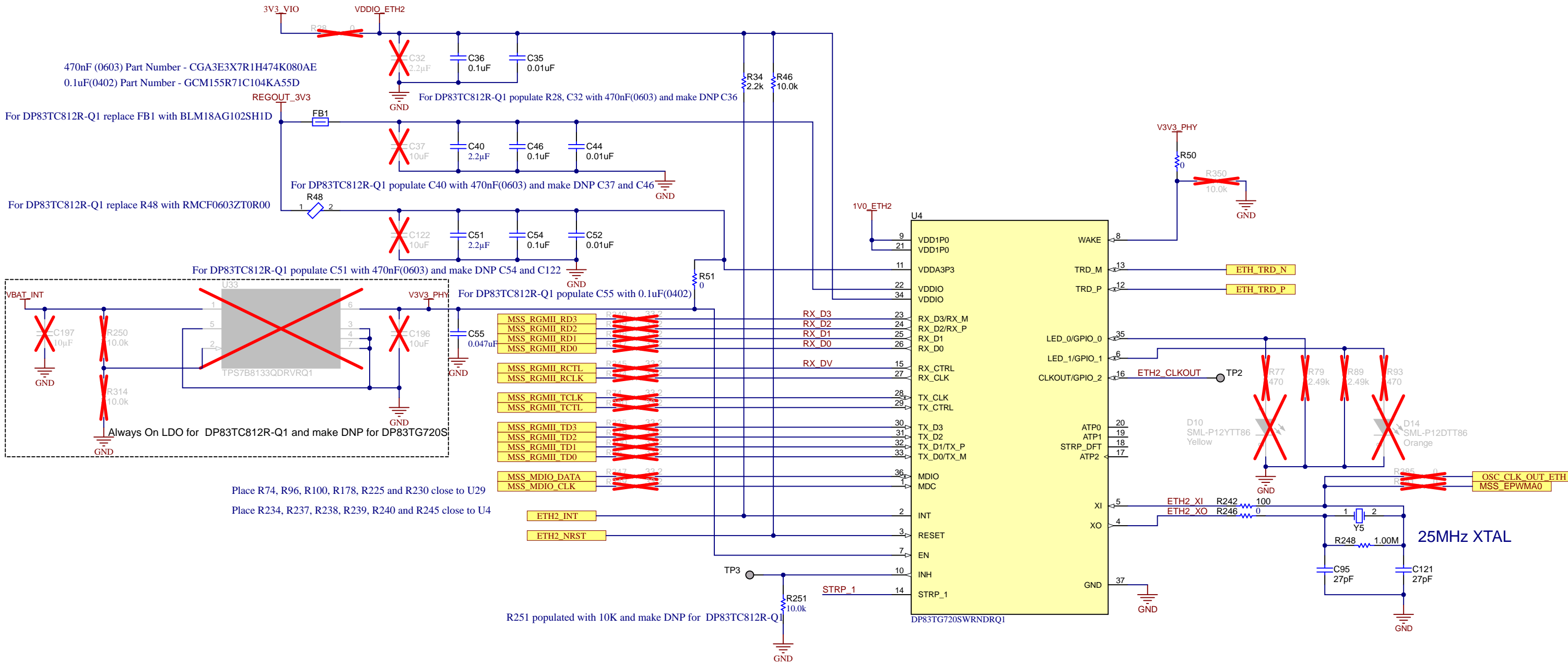


ETHERNET ESD PROTECTION



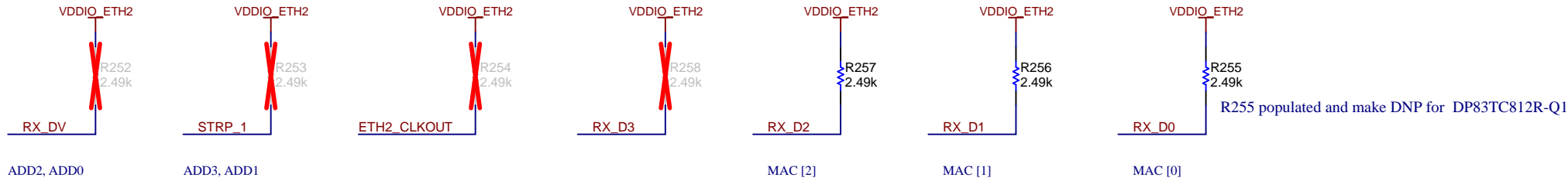
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Engineer: James MURDOCK		Contact: http://www.ti.com/support	

ETHERNET

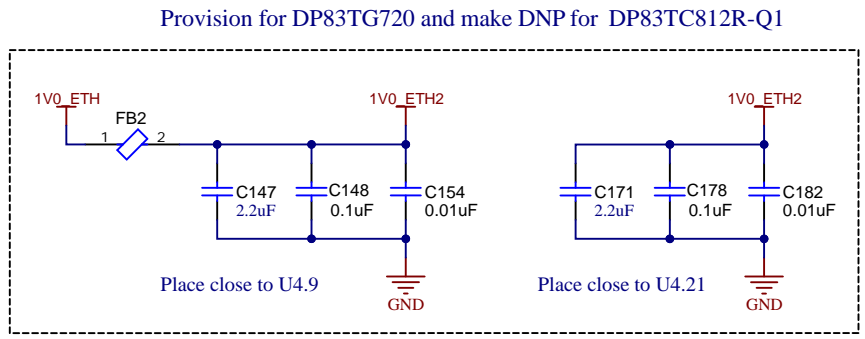


BOOTSTRAP CONFIGURATION PINS

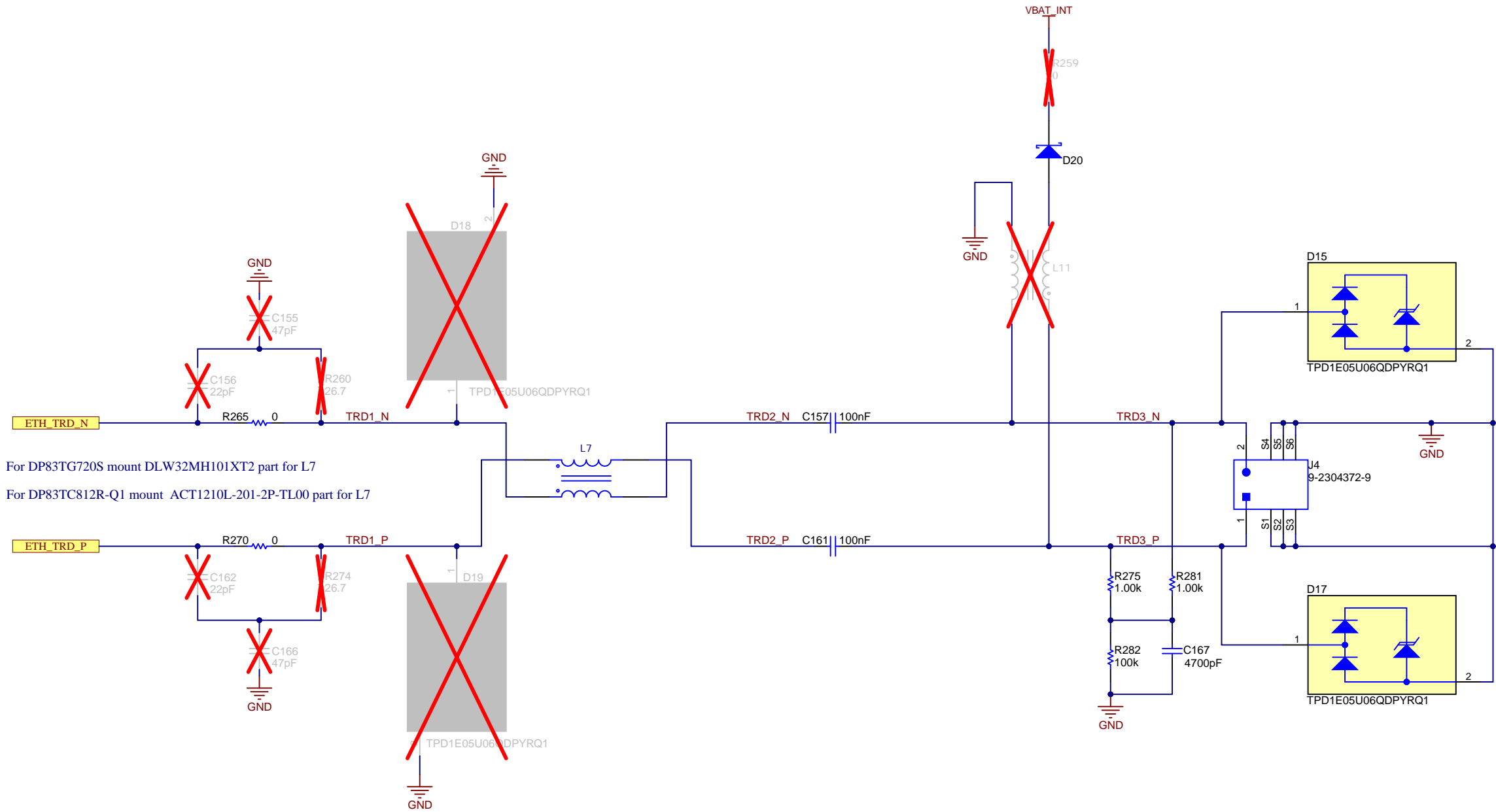
Resistor Values must be changed to change Modes, refer to datasheet for proper values



MAC Interface Selection Bootstraps
MAC[2:0] - 1 1 1 RGMII (RX Shift Mode)



ETHERNET CONNECTOR



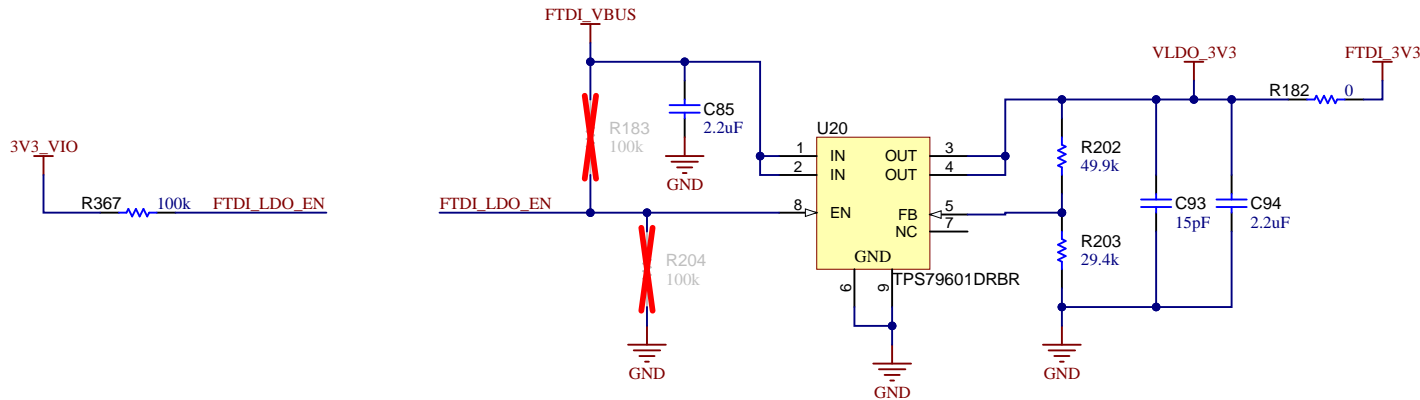
For DP83TG720S mount DLW32MH101XT2 part for L7
For DP83TC812R-Q1 mount ACT1210L-201-2P-TL00 part for L7

Orderable: AWR2944PEVM		Designed for: Public Release	Mod. Date: 8/26/2024
TID #: N/A		Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:	
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Engineer: James MURDOCK	Contact: http://www.ti.com/support		

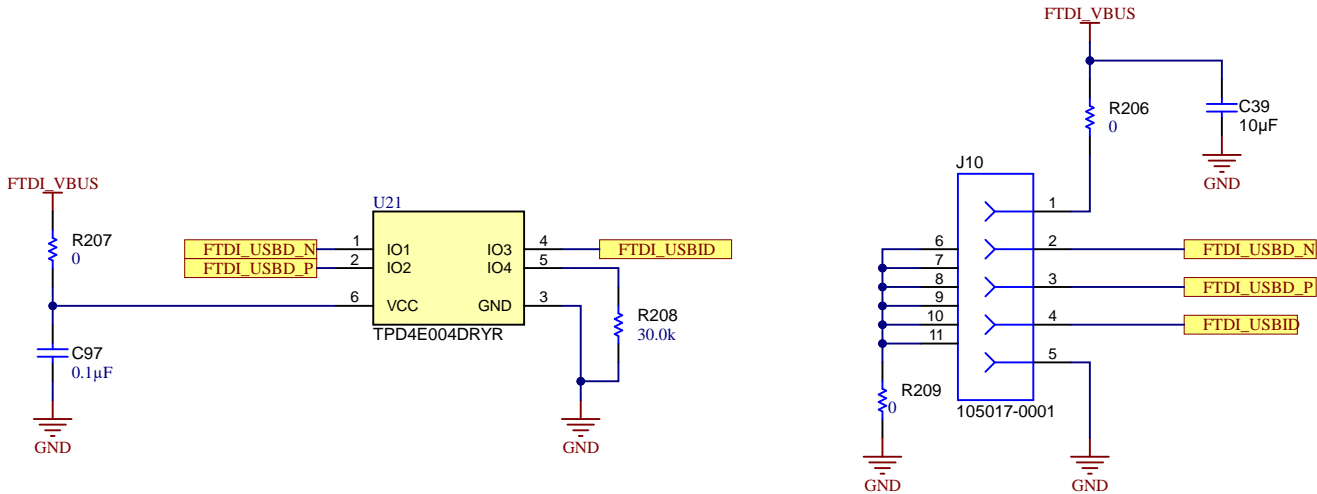
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FTDI (1/2)

3.3V LDO FOR FTDI



FTDI USB PORT



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Orderable: AWR2944PEVM	Designed for: Public Release	Mod. Date: 8/26/2024
TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 16 of 25
Drawn By:	File: PROC194A_FTDI_PWR.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

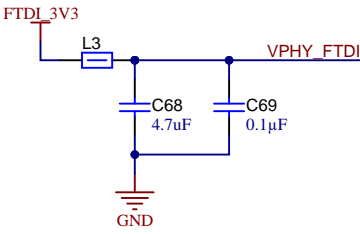
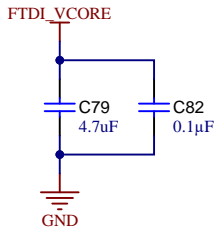
References

FT4232H Datasheet

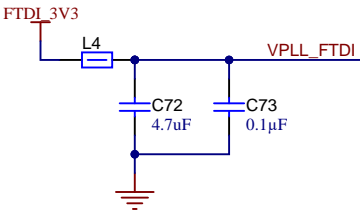
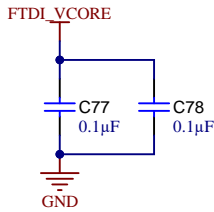
FTDI (2/2)

FTDI SUPPLY DECAPS

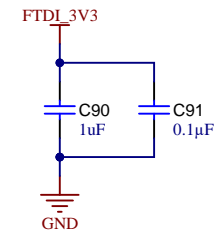
VCORE DECAPS



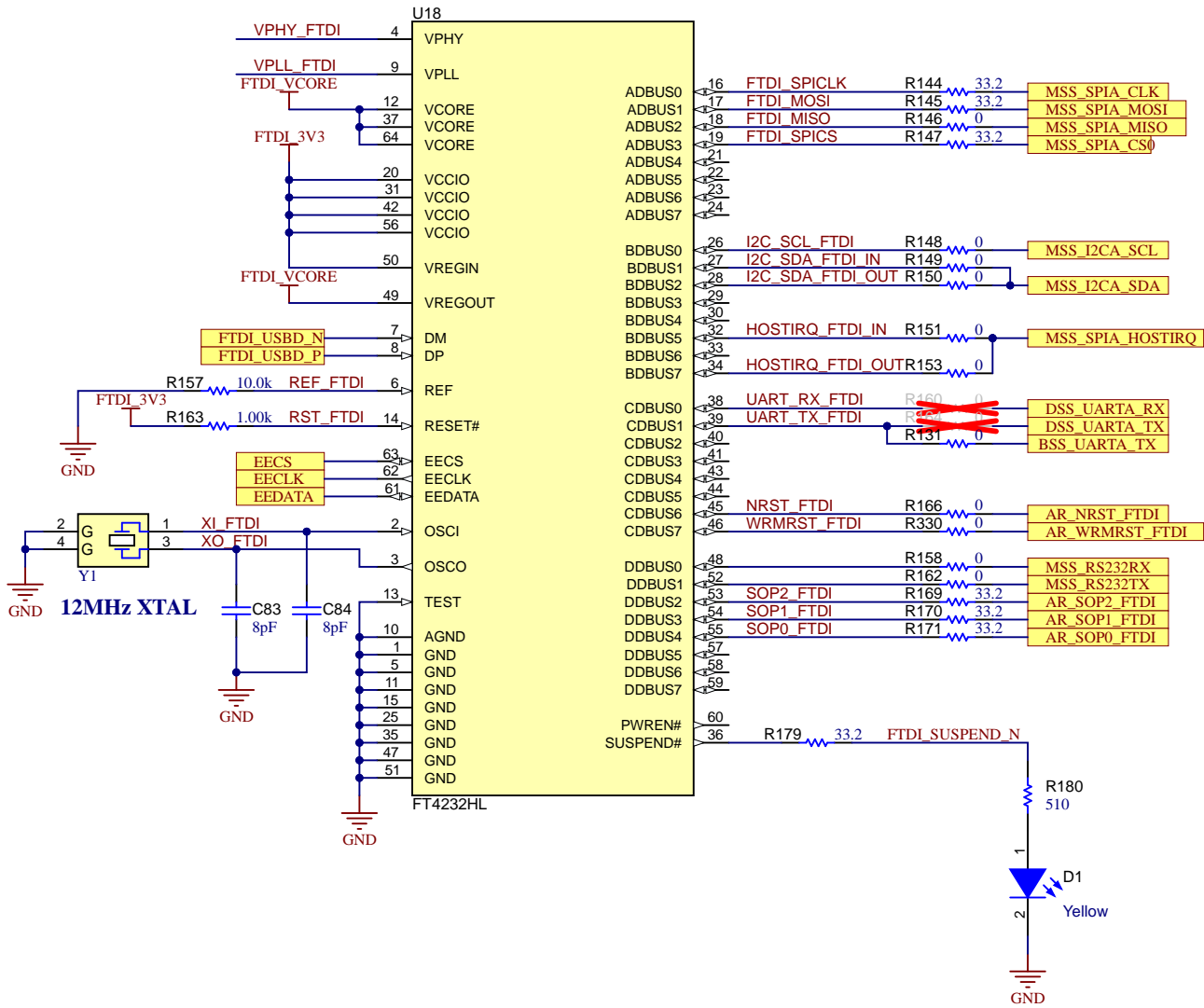
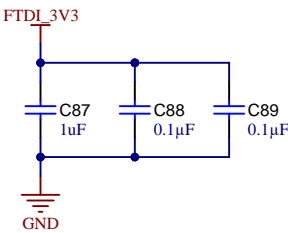
VREGOUT DECAPS



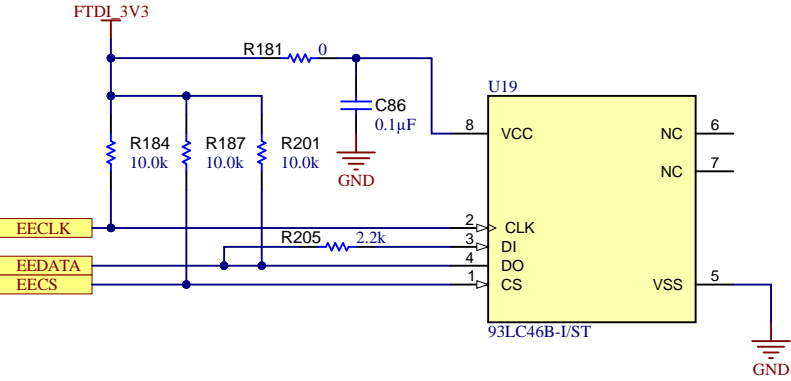
VREGIN DECAPS



VCCIO DECAPS



FTDI EEPROM

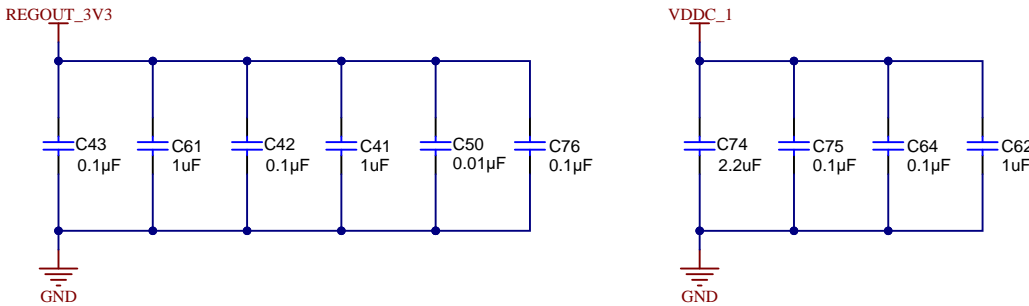


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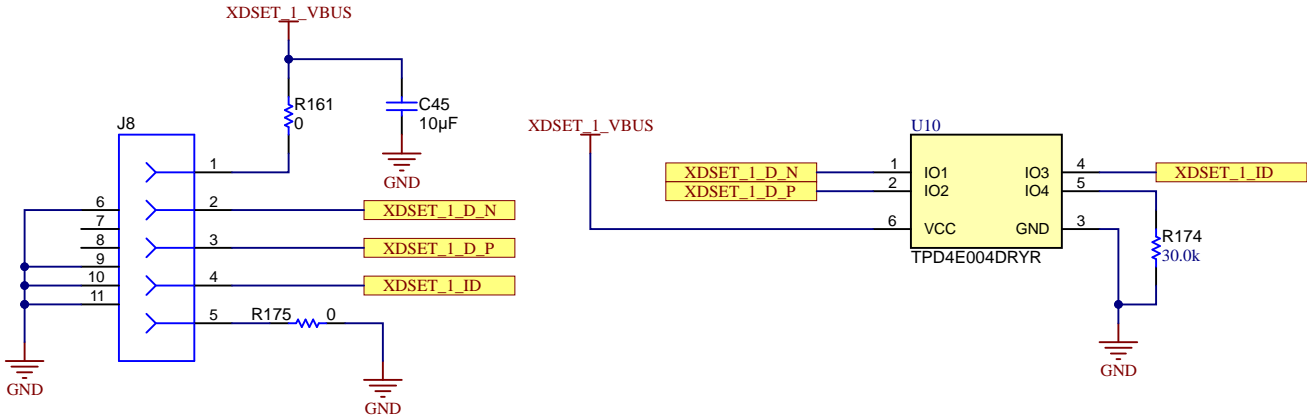
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TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 17 of 25
Drawn By:	File: PROC194A_FTDI.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

XDS110(1/2)

XDS110 DECOUPLING CAPS



XDS110 USB PORT



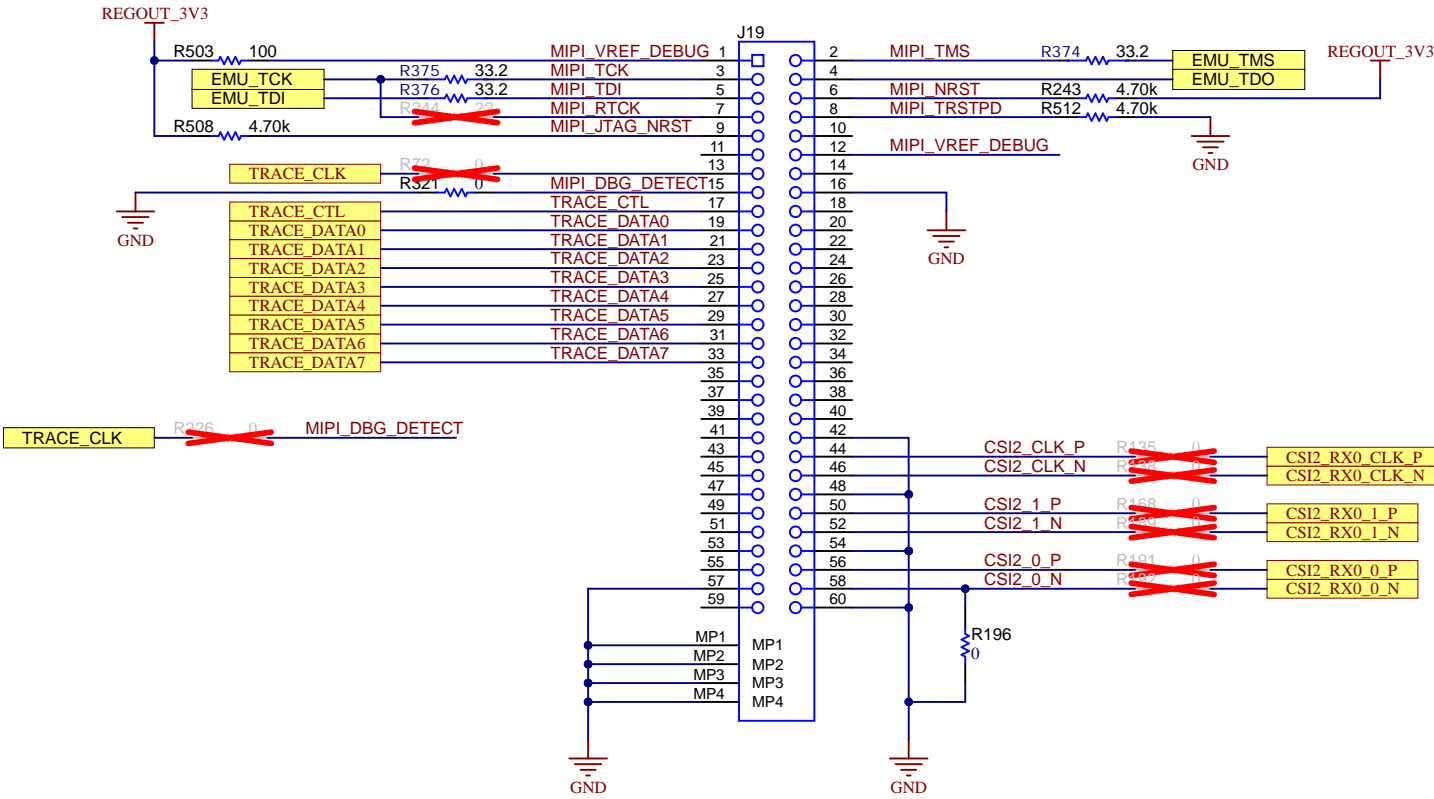
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References

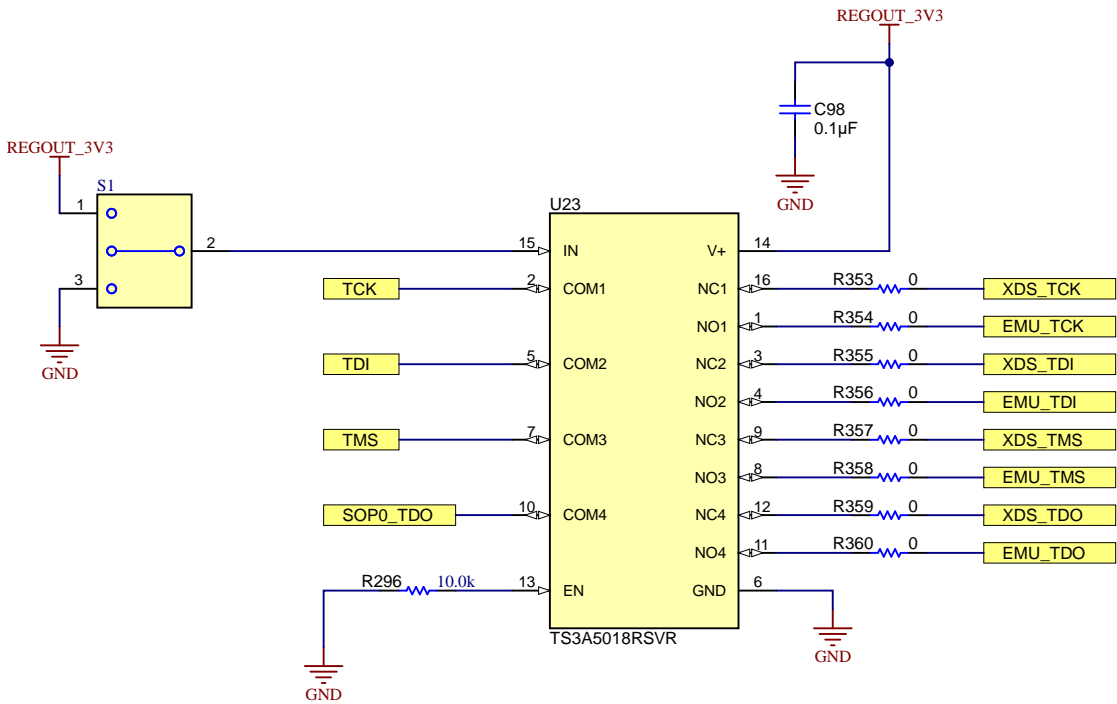
[EMULATION AND TRACE HEADERS](#)
[XDS560v2 EMULATOR](#)

MIPI 60 PIN HEADER

NOTE: DEFAULT CONFIGURATION IS FOR MIPI 60 PIN EMULATOR



JTAG MUX BETWEEN XDS110 AND MIPI 60 PIN



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Orderable: AWR2944PEVM	Designed for: Public Release	Mod. Date: 8/26/2024
TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 20 of 25
Drawn By:	File: PROC194A_JTAG_EMU_Connector.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

A



A



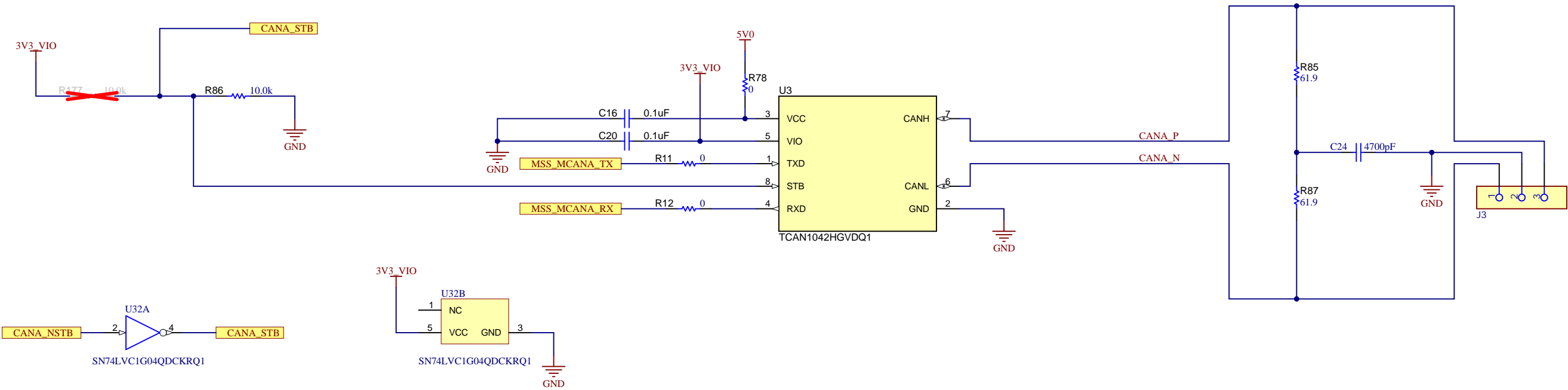
C

References

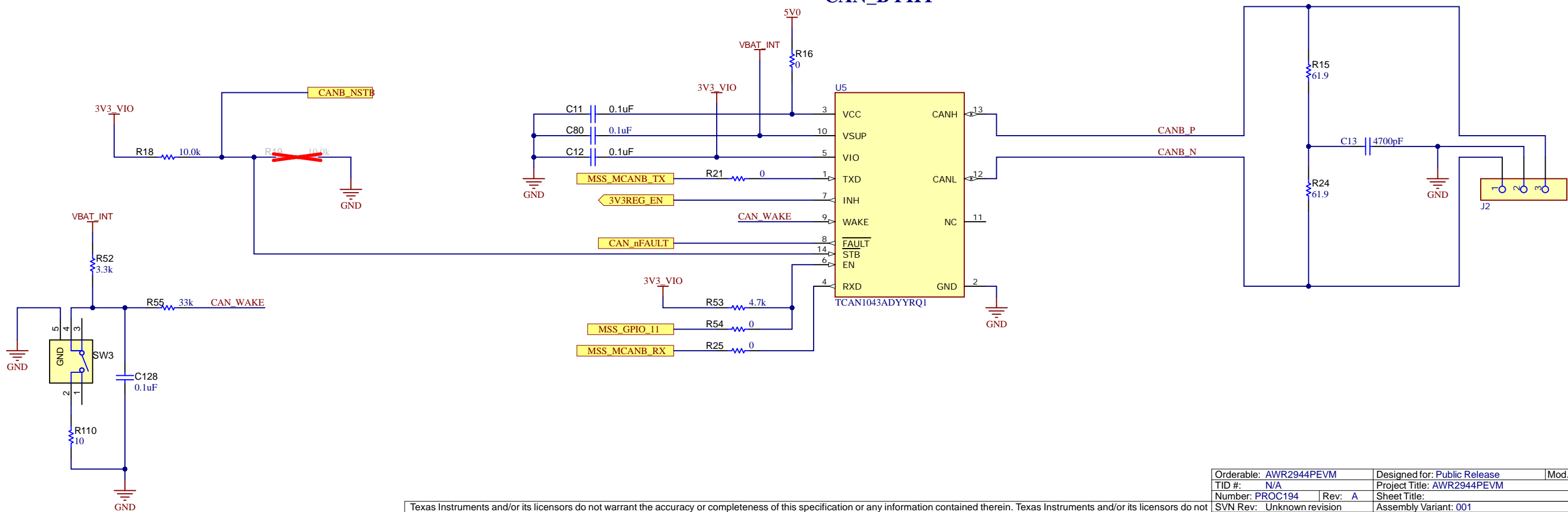
[TCAN1042 Datasheet](#)

CAN INTERFACE

CAN_A PHY



CAN_B PHY



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Orderable: AWR2944PEVM	Designed for: Public Release	Mod. Date: 8/26/2024
TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 22 of 25
Drawn By:	File: PROC194A_CAN_Interface.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

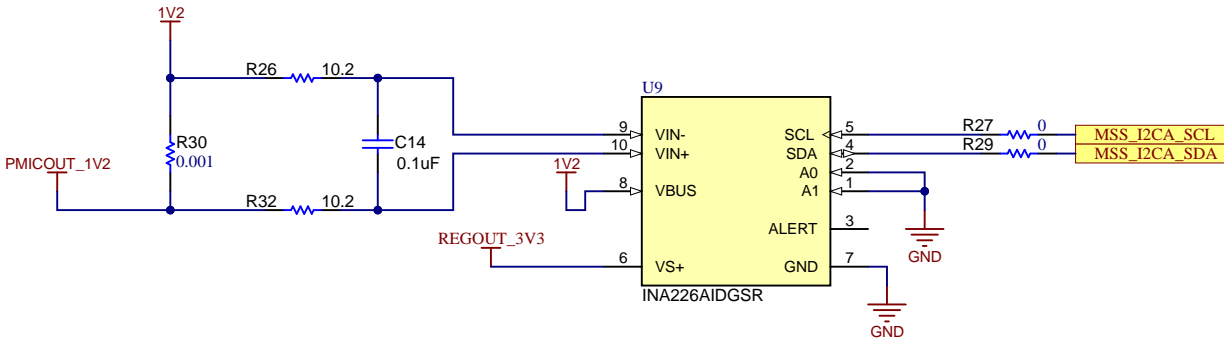
CURRENT SENSORS

References

INA226 Datasheet

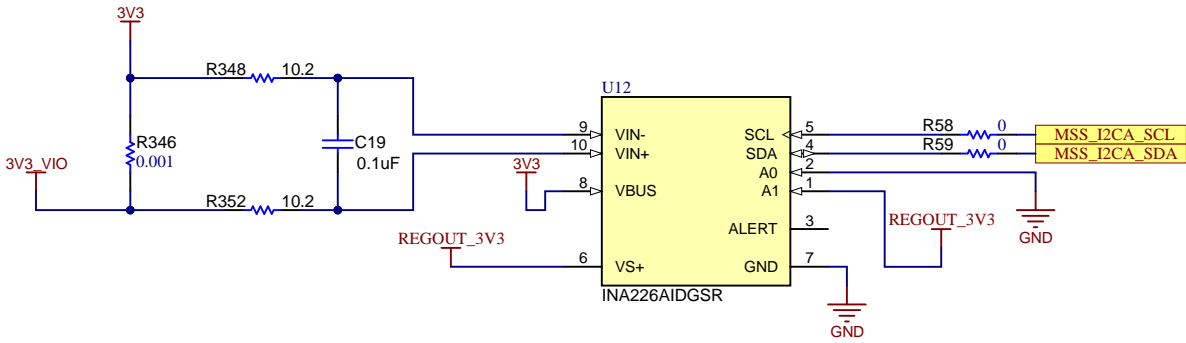
1.2V SUPPLY CURRENT SENSOR

I2C ADDRESS 0x40



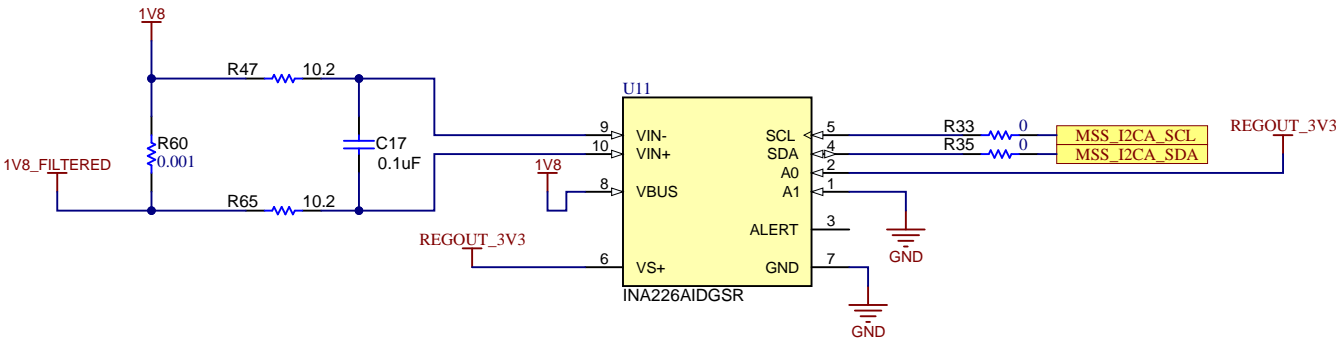
3.3V SUPPLY CURRENT SENSOR

I2C ADDRESS 0x44



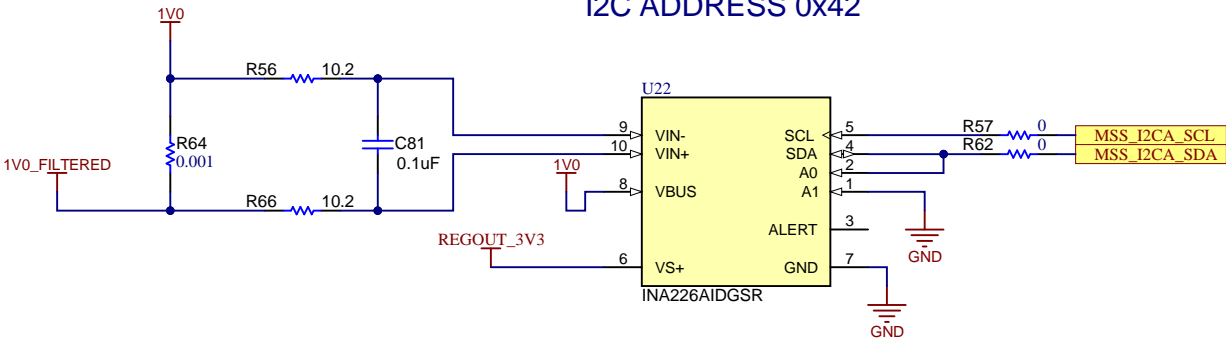
1.8V SUPPLY CURRENT SENSOR

I2C ADDRESS 0x41



1.0V SUPPLY CURRENT SENSOR

I2C ADDRESS 0x42



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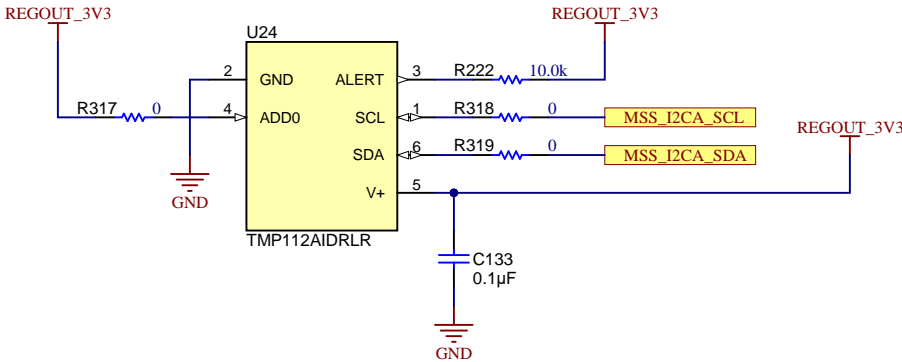
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TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 23 of 25
Drawn By:	File: PROC194A_Current_Sensors.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

References

[TMP112 Datasheet](#)

TEMP SENSOR

I2C ADDRESS 0x49



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Orderable: AWR2944PEVM	Designed for: Public Release	Mod. Date: 8/26/2024
TID #: N/A	Project Title: AWR2944PEVM	
Number: PROC194	Rev: A	Sheet Title:
SVN Rev: Unknown revision	Assembly Variant: 001	Sheet: 24 of 25
Drawn By:	File: PROC194A_Temp_Sensor.SchDoc	Size: B
Engineer: James MURDOCK	Contact: http://www.ti.com/support	

FID1

FID2

FID3

FID4

FID5

FID6

FID7

FID8

FID9

FID10

FID11

FID12

FID13

FID14

FID15

FID16


PCB Number: PROC194
PCB Rev: A


PCB
LOGO
Texas Instruments


PCB
LOGO
FCC disclaimer

PCB
LOGO
WEEE logo

PCB
LOGO
ESD Susceptible


CAUTION HOT SURFACE

LOGO2

CE Mark

Logo5

UKCA Marking

LBL1
PCB Label
THT-14-423-10
Size: 0.65" x 0.20 "

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

Variant/Label Table	
Variant	Label Text
001	AWR2944PEVM

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.

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