

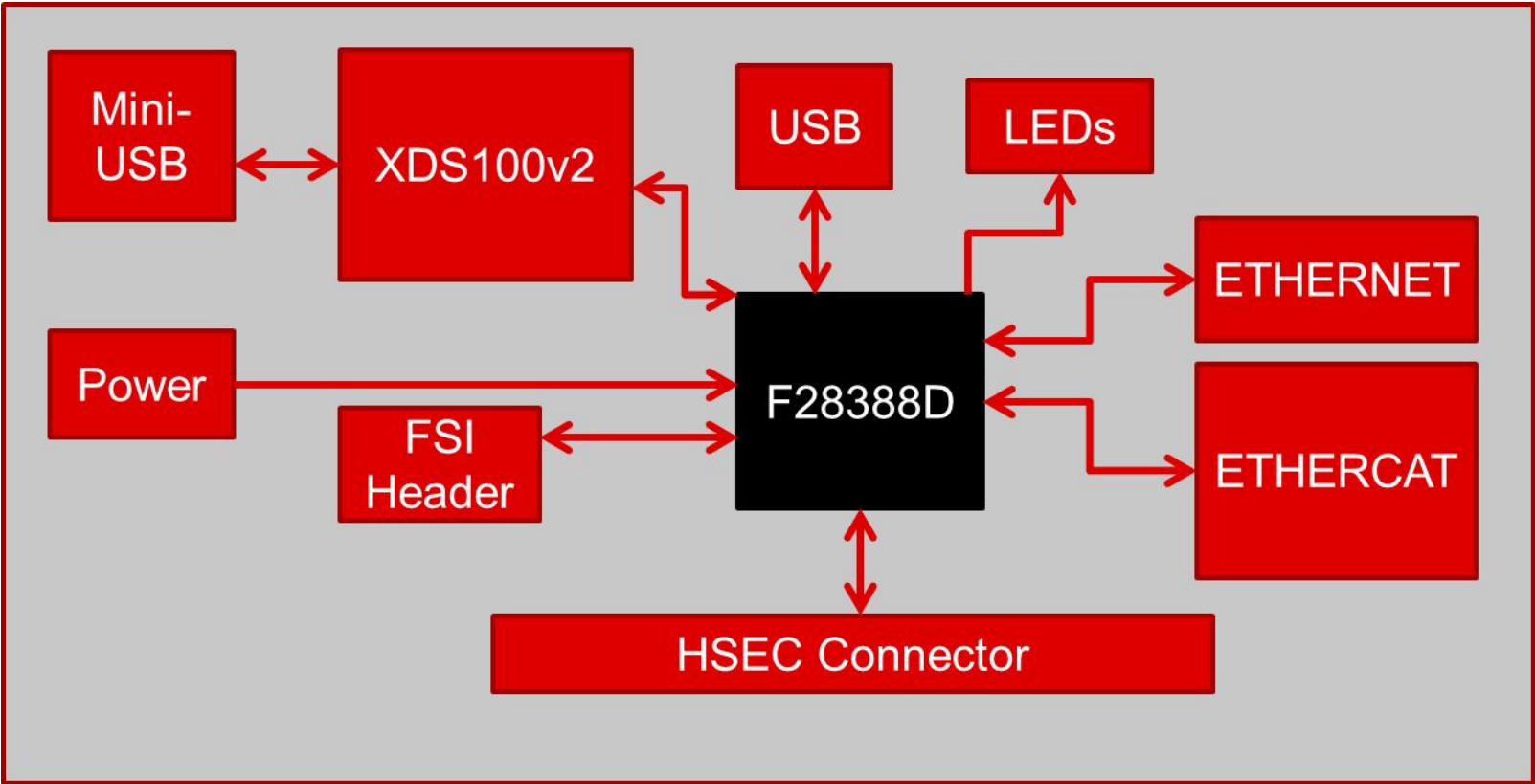
A

- 1) USB Differential Pairs - 90 Ohm
(A)USB_N and USB_P
(B)MCU_GPIO42 and MCU_GPIO43
- 2)ADC Differential pair Impedance Matching
(A)HSEC_ADC even pins should match with HSEC_ADC + 1 pin(ie HSEC_ADC-C2 should match with HSEC_ADC-C3)
(B)MCU_ADC even pins should match with MCU_ADC + 1 pin(ie MCU_ADC-A0 should match with MCU_ADC-A1)
- 3)ETHERNET and ETHERCAT Differential pairs
(A)TD_P and TD_N
(B)RD_P and RD_N

Revision History				
Rev	ECN #	Approved Date	Approved by	Notes
E1	N/A	N/A	N/A	Initial
E2	N/A	N/A	N/A	Fixed Ethernet MDC Bug in PCB Replaced U20 with an inverting buffer
A	N/A	N/A	N/A	Public Release
B	N/A	N/A	N/A	Changed Default clock to 25MHz Added 1V2, 3V3, and ERRORSTS to HSEC connector Enhanced J2 to support 2 data lines

A

B



B

C

C

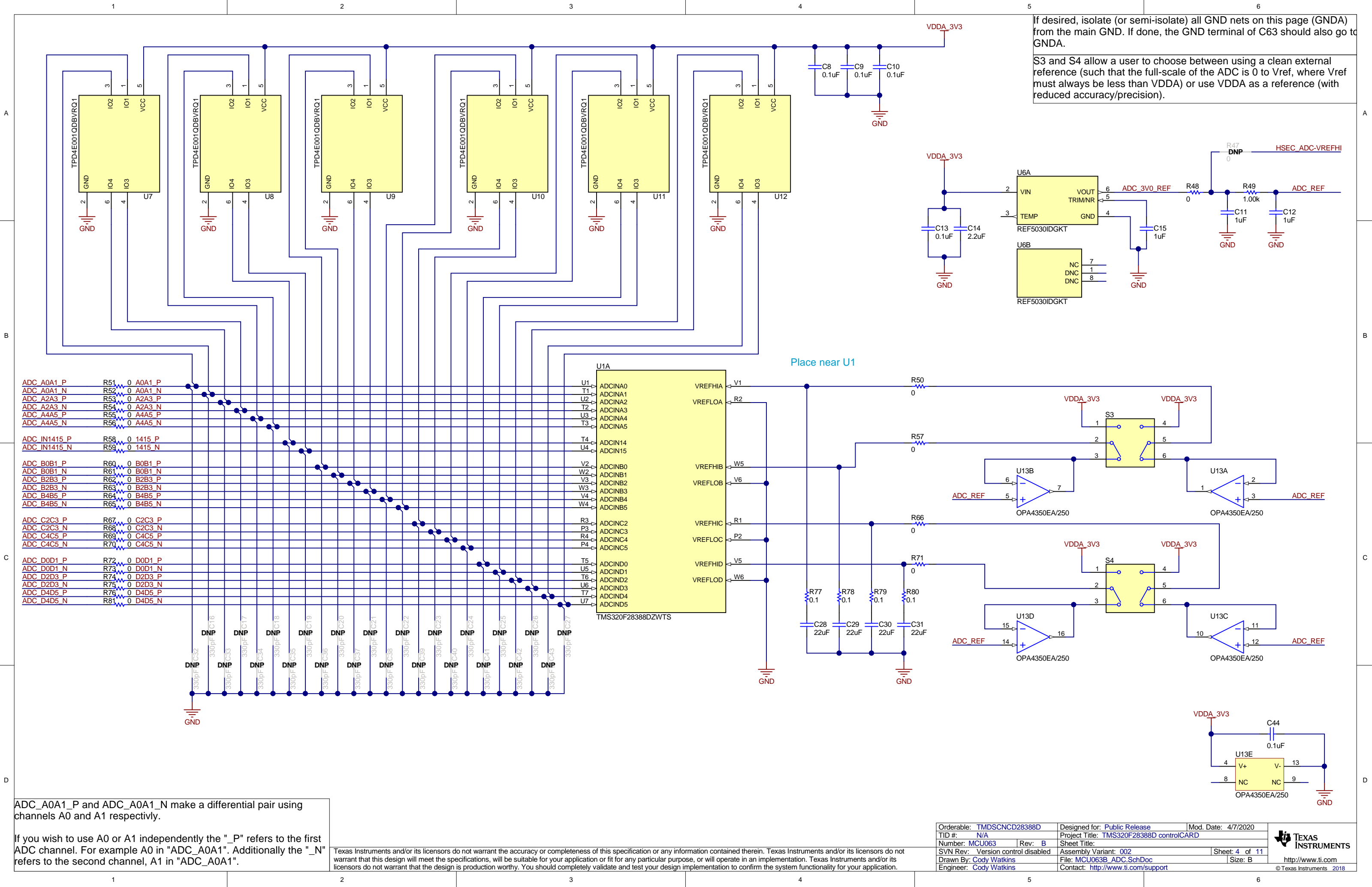
D

D

This controlCARD does not support the High Density(HD) connector, or EMIF, as previously supported by TMDSCNCDF28379D.

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Orderable: TMDSCNCD28388D	Designed for: Public Release	Mod. Date: 4/7/2020
TID #: N/A	Project Title: TMS320F28388D controlCARD	
Number: MCU063	Rev: B	Sheet Title:
SVN Rev: Version control disabled	Assembly Variant: 002	Sheet: 1 of 11
Drawn By: Cody Watkins	File: MCU063B_CoverSheet.SchDoc	Size: B
Engineer: Cody Watkins	Contact: http://www.ti.com/support	



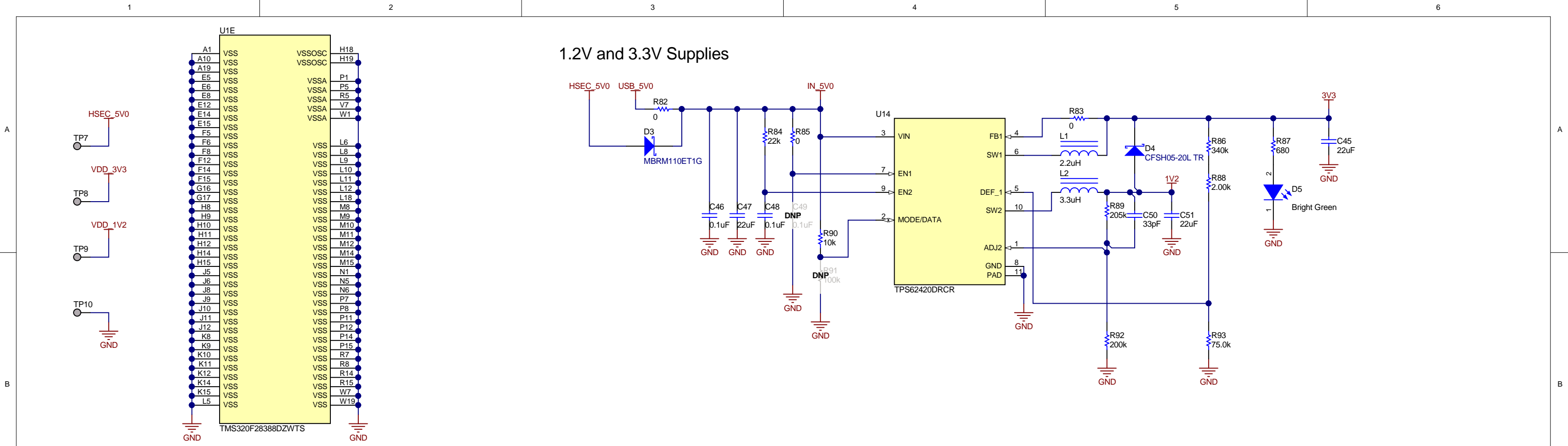
If desired, isolate (or semi-isolate) all GND nets on this page (GNDA) from the main GND. If done, the GND terminal of C63 should also go to GNDA.

S3 and S4 allow a user to choose between using a clean external reference (such that the full-scale of the ADC is 0 to Vref, where Vref must always be less than VDDA) or use VDDA as a reference (with reduced accuracy/precision).

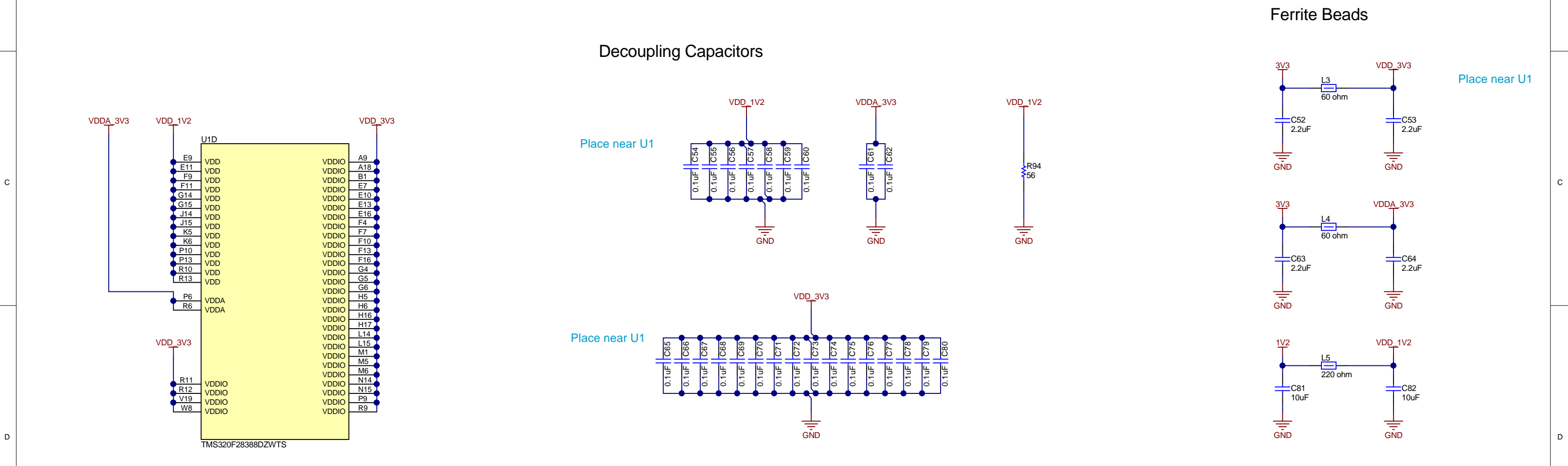
ADC_A0A1_P and ADC_A0A1_N make a differential pair using channels A0 and A1 respectively.

If you wish to use A0 or A1 independently the "_P" refers to the first ADC channel. For example A0 in "ADC_A0A1". Additionally the "_N" refers to the second channel, A1 in "ADC_A0A1".

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1.2V and 3.3V Supplies



Decoupling Capacitors

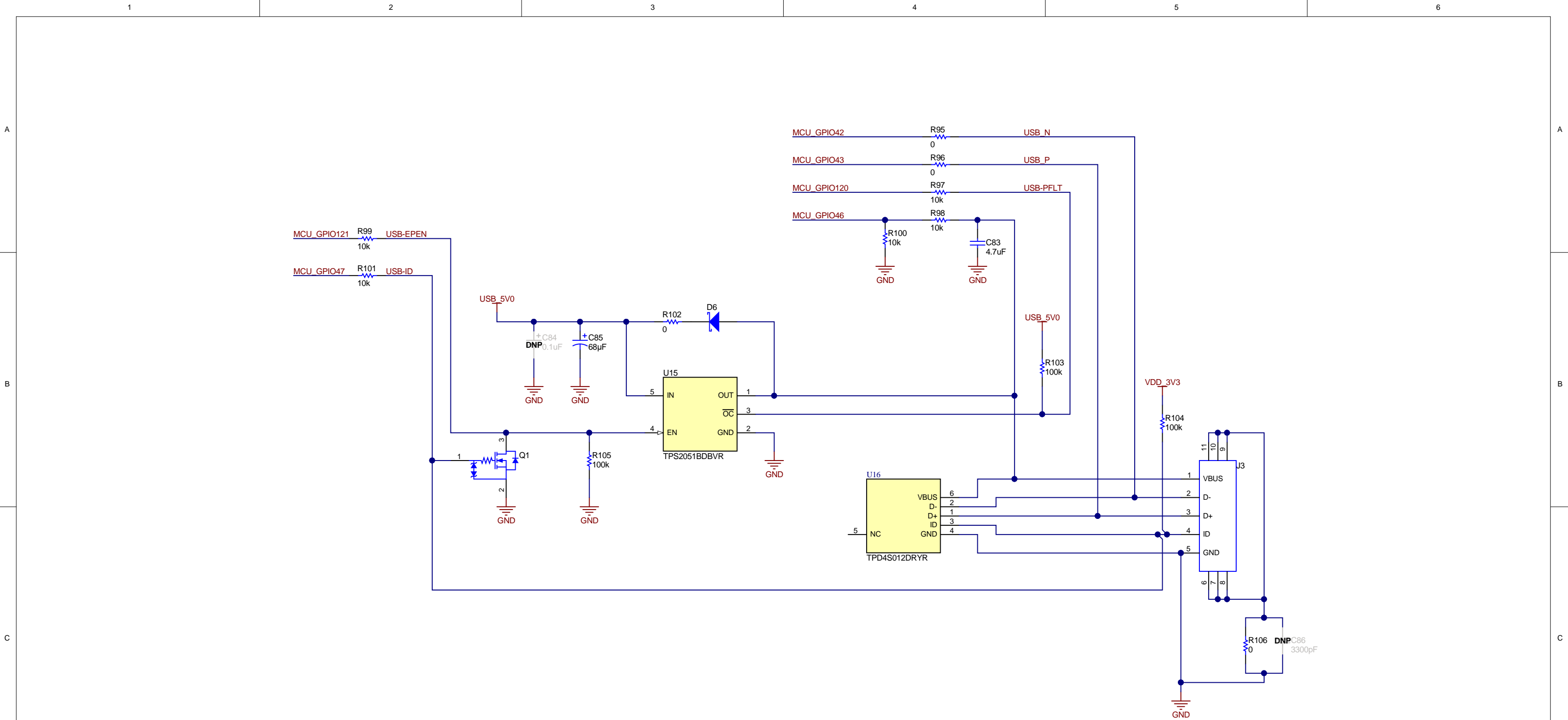
Ferrite Beads

Place near U1

Place near U1

Place near U1

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Number: MCU063	Rev: B	Sheet Title: Assembly Variant: 002
SVN Rev: Version control disabled	File: MCU063B_Power.SchDoc	Size: B
Drawn By: Cody Watkins	Contact: http://www.ti.com/support	
Engineer: Cody Watkins		

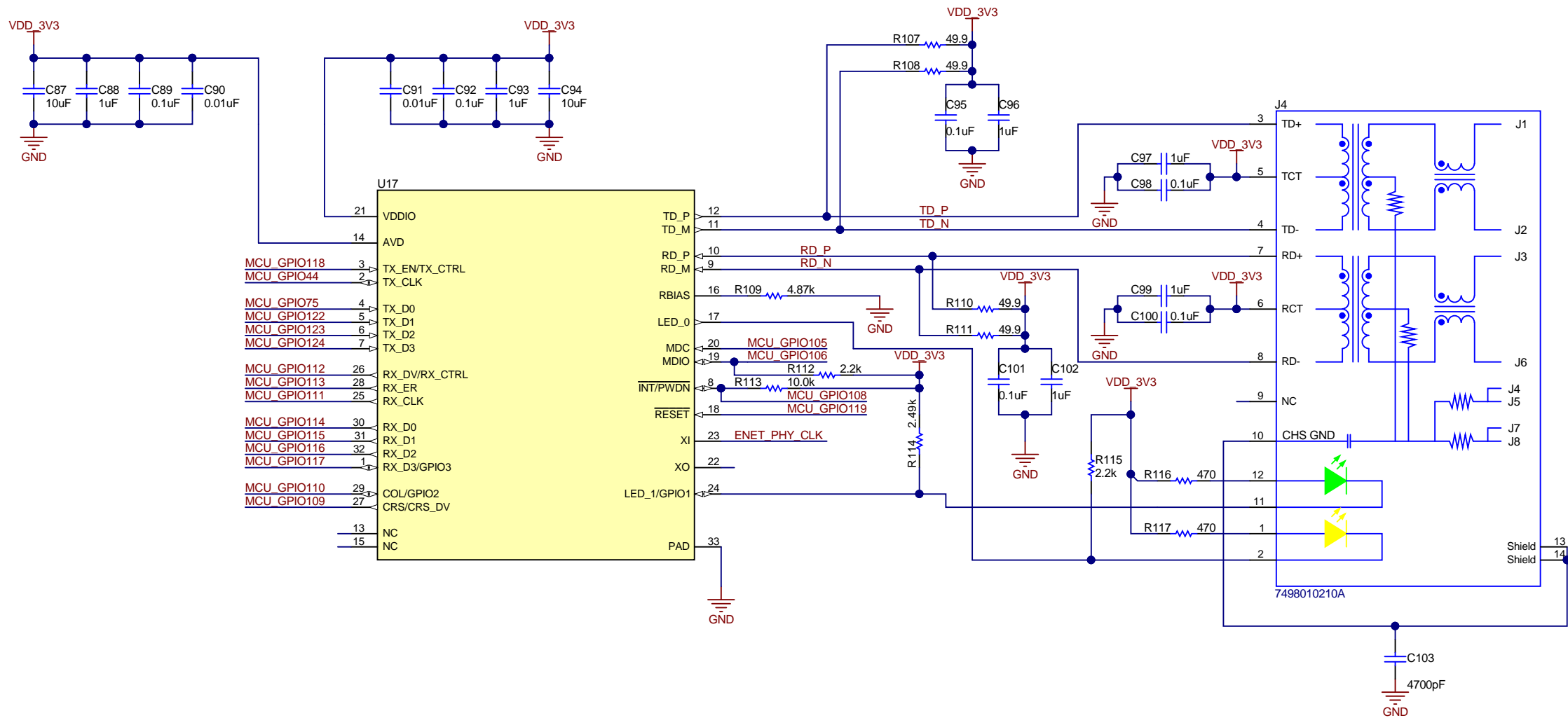


NOTE: USB VBUS, ID, PFLT & EPEN do not have a specific mux position in this device.

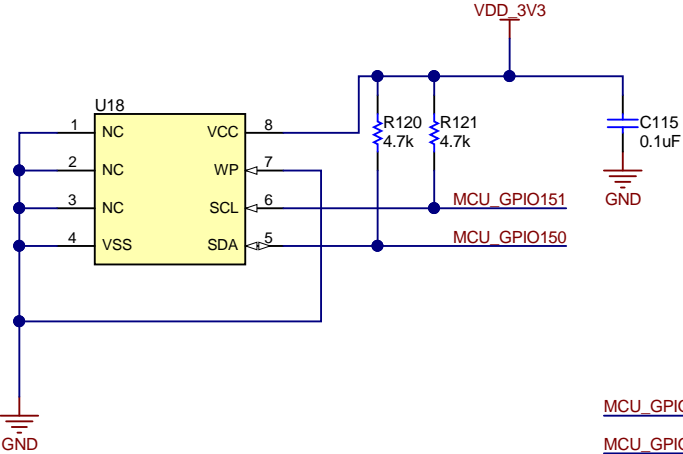
In this controlCARD, a standard GPIO is used to detect changes to these signals.

R102 is populated to allow a customer to evaluate the controlCARD without a baseboard if they desire. USB specifies the total bus capacitance on any device as 10uF max. R102 should be depopulated in most end applications.

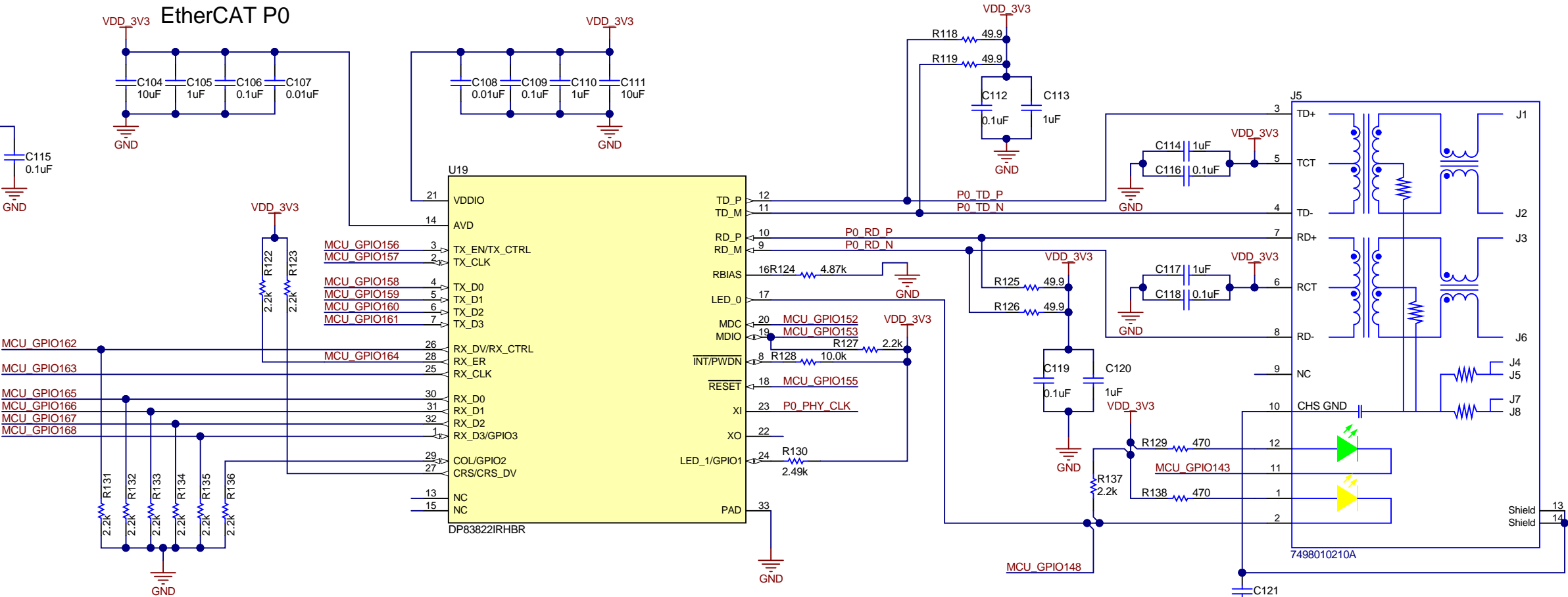
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TID #: N/A		Project Title: TMS320F28388D controlCARD	
Number: MCU063	Rev: B	Sheet Title:	
SVN Rev: Version control disabled		Assembly Variant: 002	Sheet: 6 of 11
Drawn By: Cody Watkins		File: MCU063B_USB.SchDoc	Size: B
Engineer: Cody Watkins		Contact: http://www.ti.com/support	



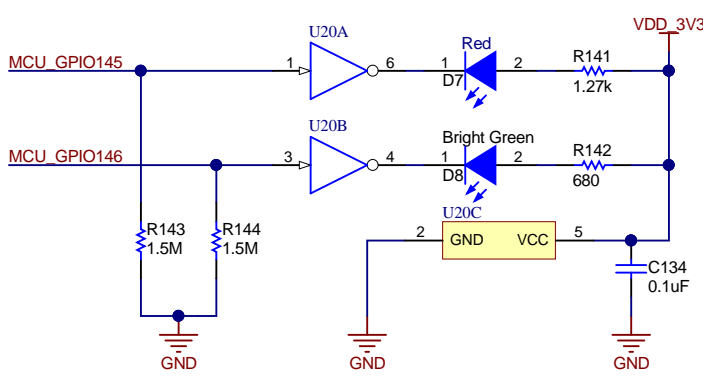
EtherCAT EEPROM



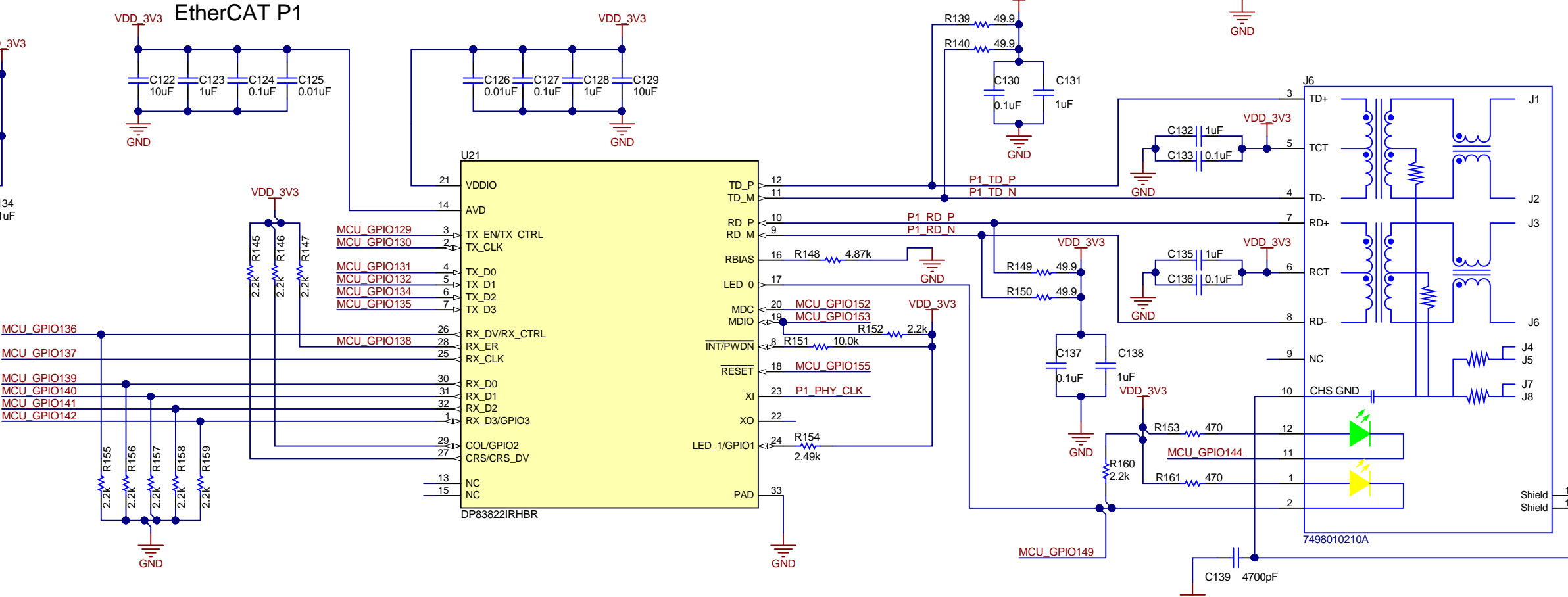
EtherCAT P0



Run and Error LEDs



EtherCAT P1



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SVN Rev: Version control disabled	Assembly Variant: 002	Sheet: 8 of 11
Drawn By:	File: MCU063B_EtherCAT.SchDoc	Size: B
Engineer: Cody Watkins	Contact: http://www.ti.com/support	

