

1	2	3	4	5	6
REVISION	DESCRIPTION			DATE	
1.1	New stackup 8 layers				12/18/2021

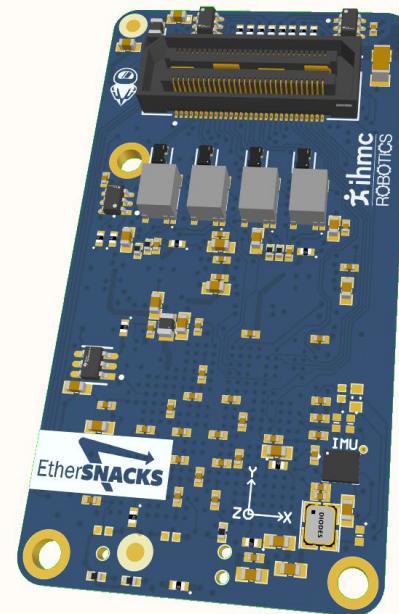
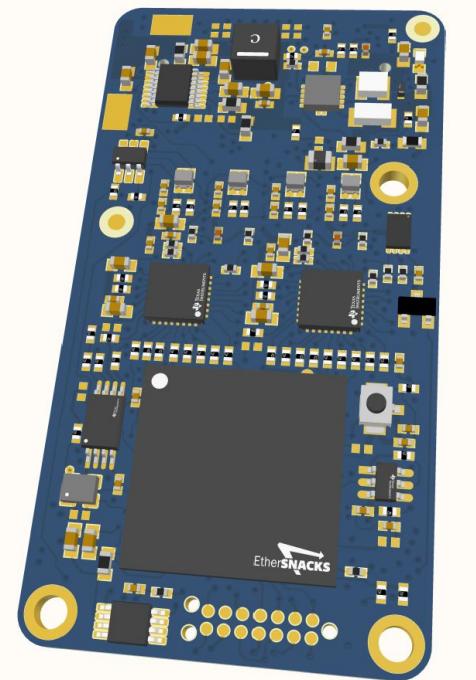
Nadia

F28388D_ECAT_Node

REV1.1

Page Index

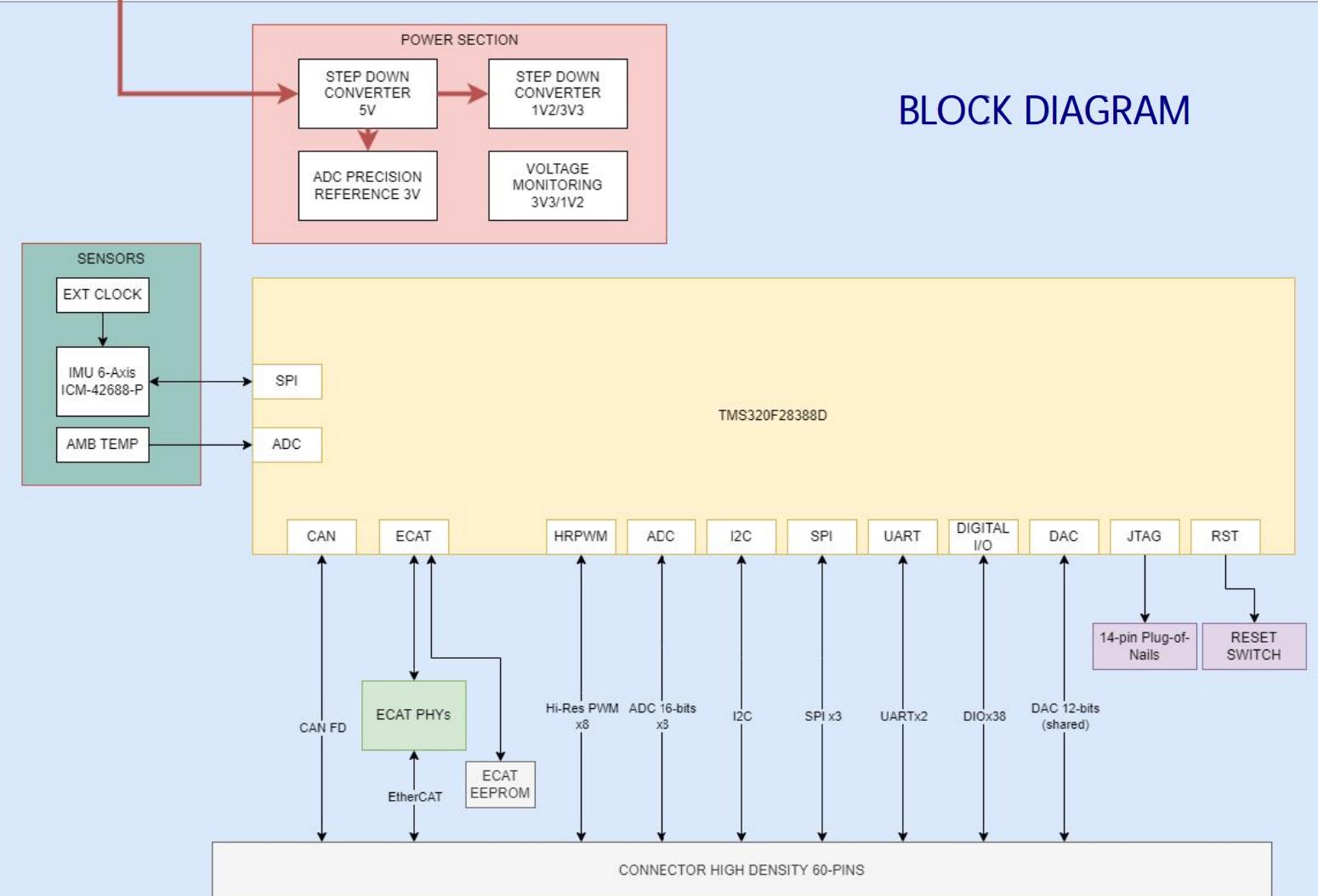
-
- 1 COVER PAGE
- 2 BLOCK DIAGRAM
- 3 POWER
- 4 F2838 GPIO
- 5 F2838 JTAG CLOCK SUP
- 6 F2838 ADC
- 7 ETHERCAT
- 8 SENSORS
- 9 CONNECTORS MECH



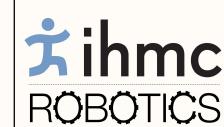
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	TITLE: F28388D_ECAT_Node	
	FILE NAME: [0] COVER PAGE.SchDoc	
	CUR REV: 1.1	DATE: 24/11/2021
	PCB: PCB_F2838_Node	SHEET: 1 OF 9

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				REVISION	DESCRIPTION
				11	New stackup 8 layers 12/18/2021

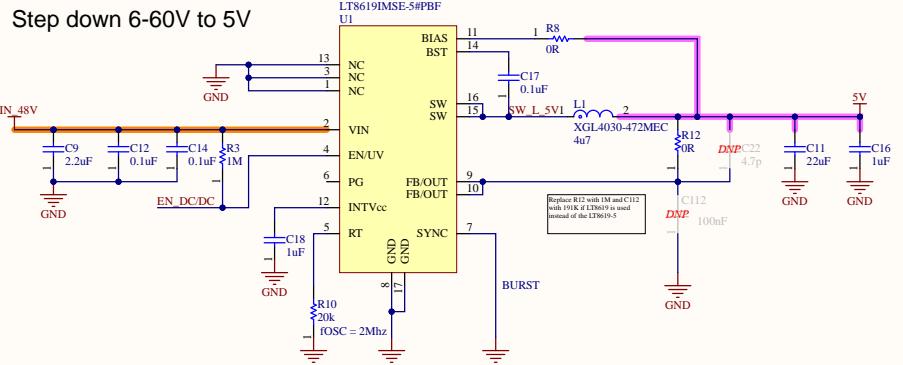
BLOCK DIAGRAM



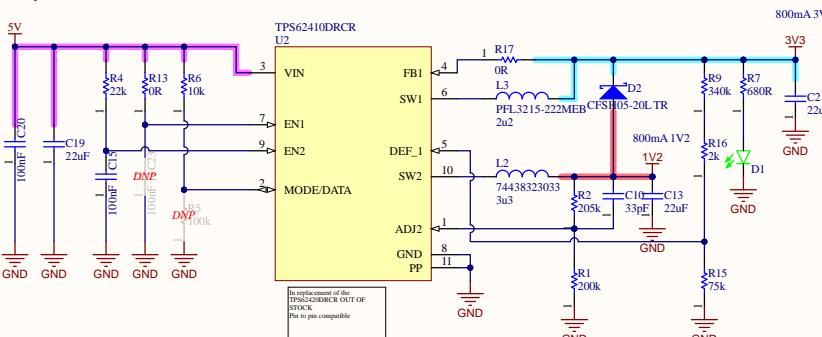
PROJECT: Nadia	AUTHOR: A. MASLYCZYK
TITLE: F28388D_ECAT_Node	
FILE NAME: [1] BLOCK DIAGRAM.SchDoc	
CUR REV: 1.1	DATE: 24/11/2021
PCB: PCB_F28388_Node	SHEET: 2 OF 9



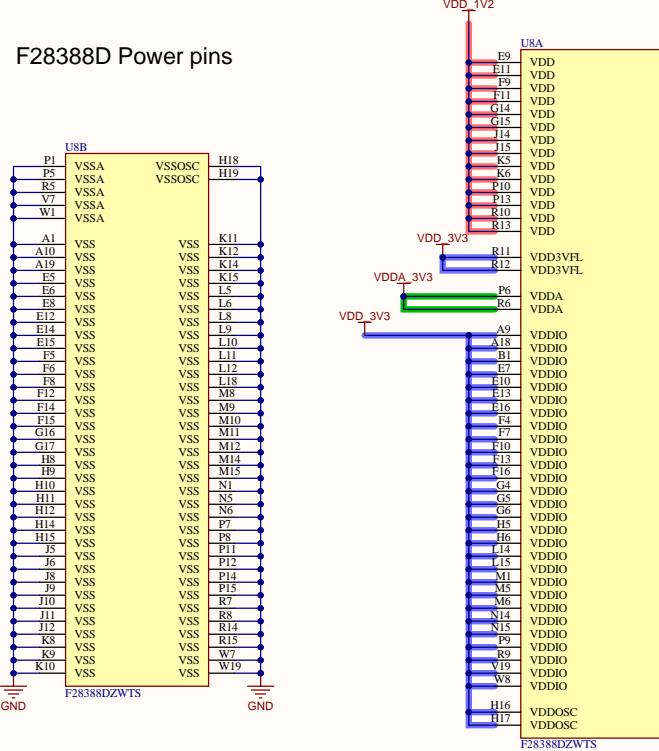
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				REVISION	DESCRIPTION	DATE
				1.1	New stackup 8 layers	12/18/2021



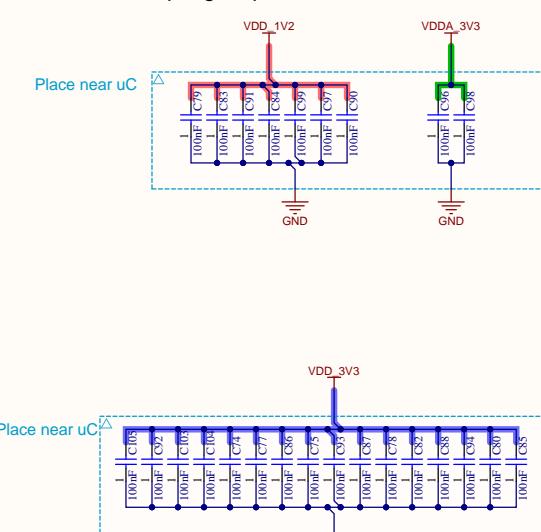
Step down 1V2 and 3V3 - 800mA



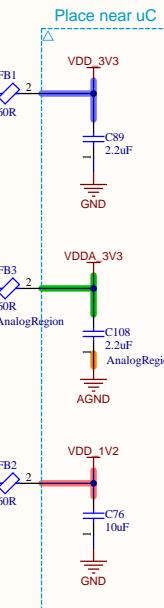
F28388D Power pins



Decoupling Capacitors

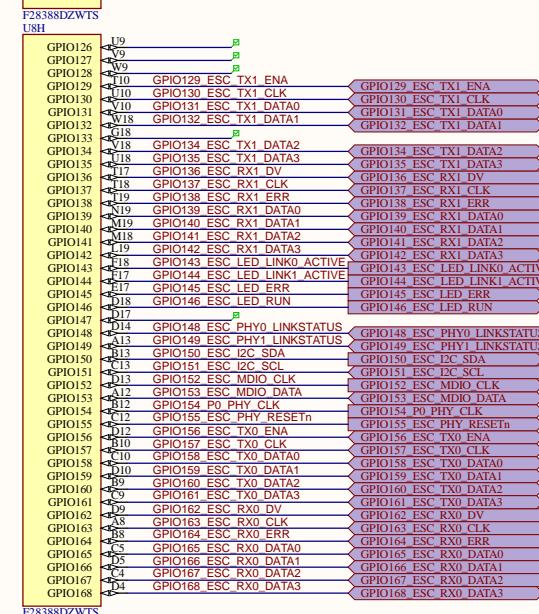
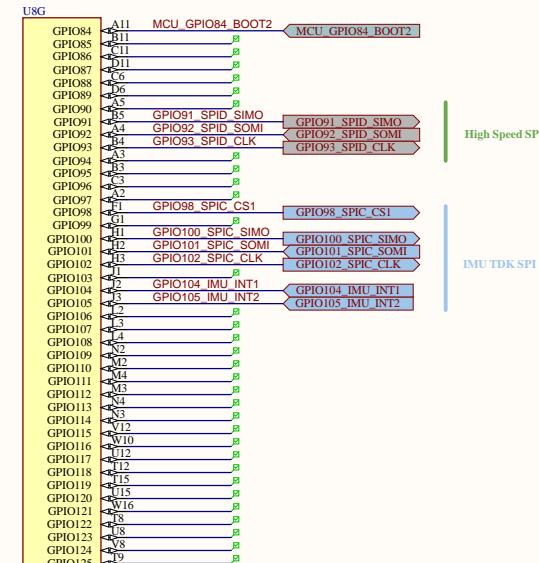
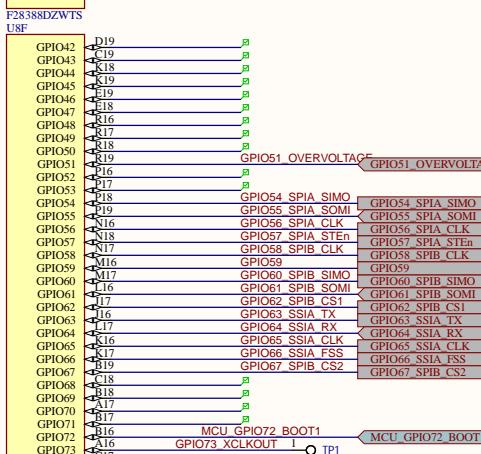
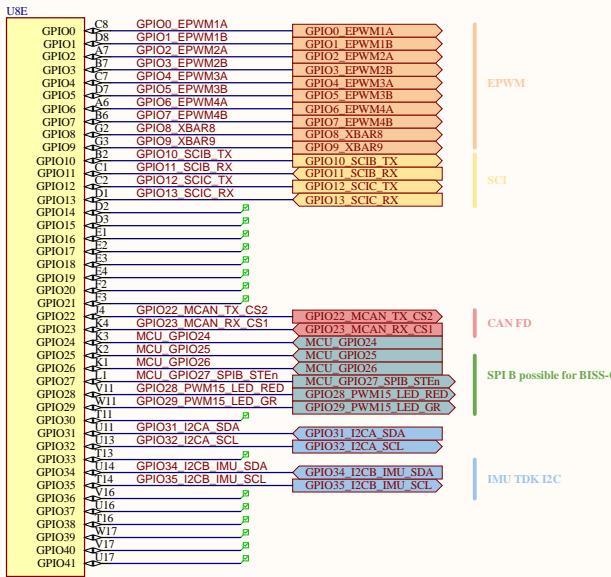


Ferrite Beads



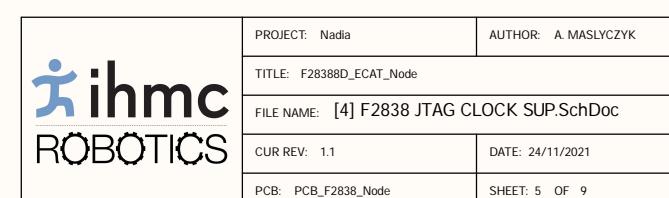
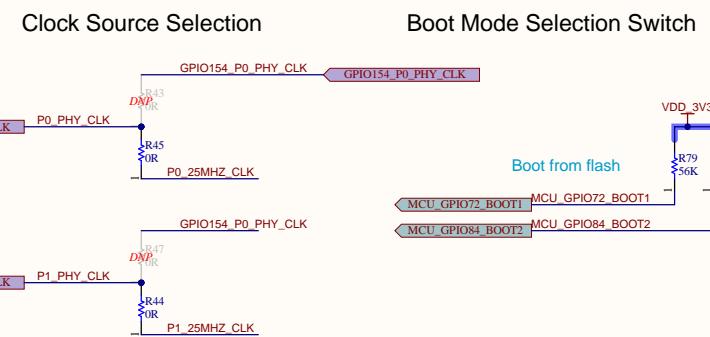
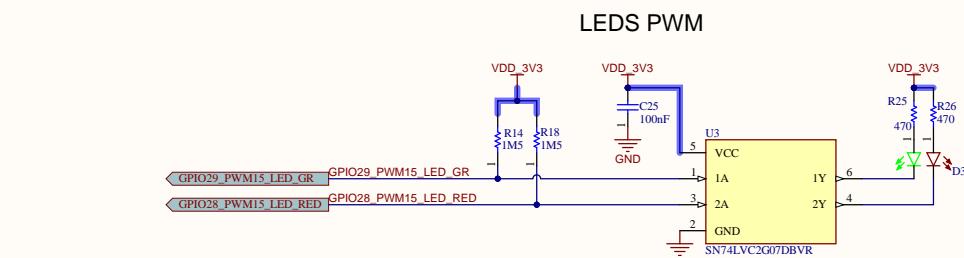
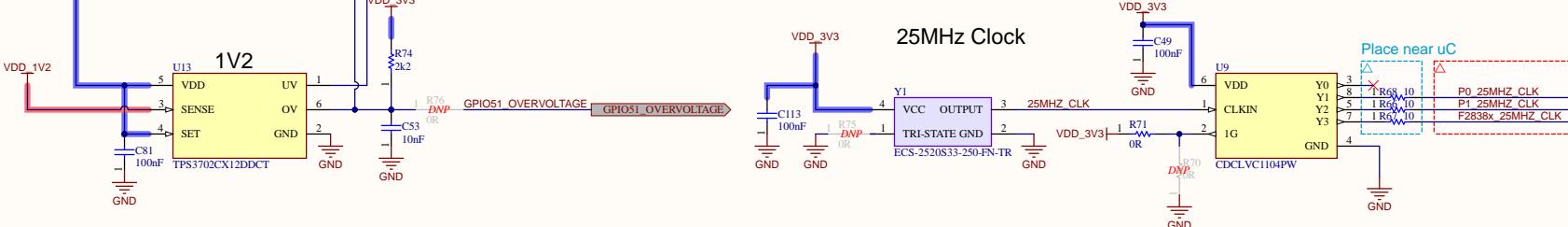
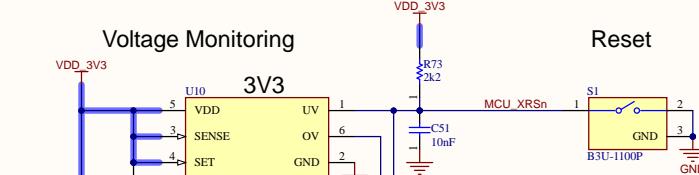
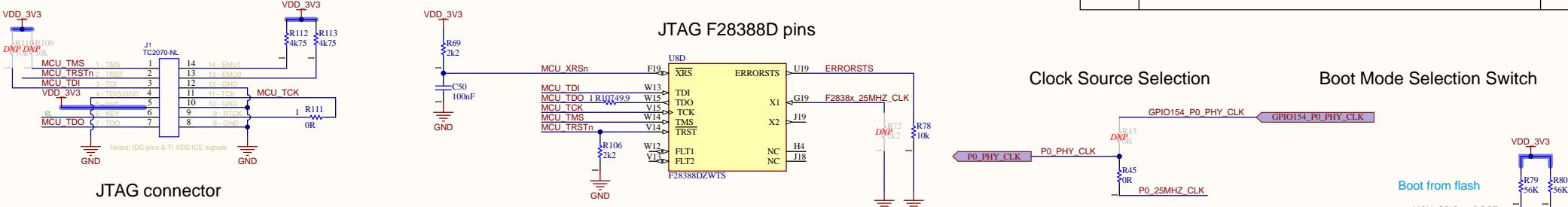
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				REVISION	DESCRIPTION	DATE
				1.1	New stackup 8 layers	12/18/2021

F28388D GPIO pins

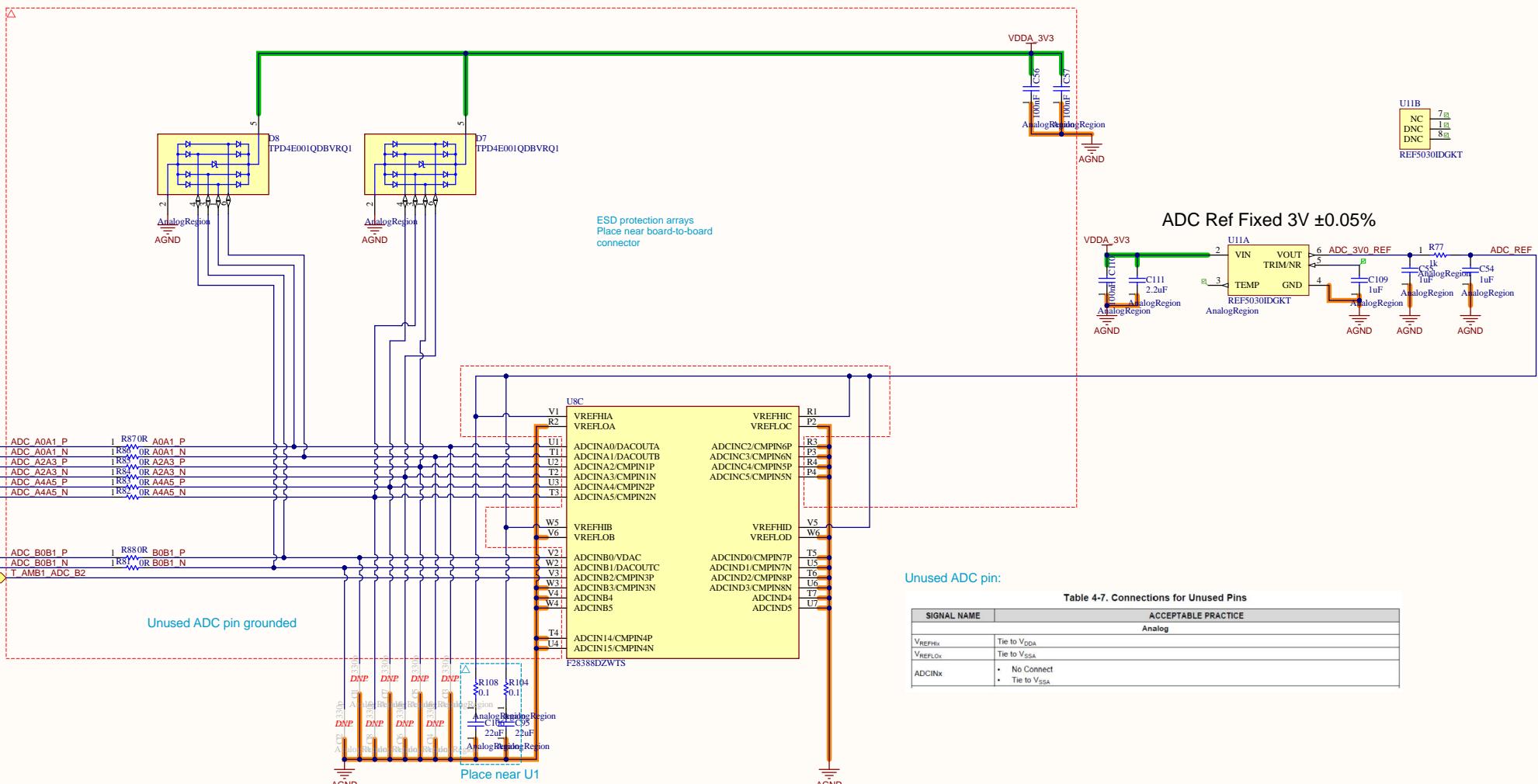


PROJECT: Nadia	AUTHOR: A. MASLYCZYK
TITLE: F28388D_ECAT_Node	
FILE NAME: [3] F2838 GPIO.SchDoc	
CUR REV: 1.1	DATE: 24/11/2021
PCB: PCB_F2838_Node	HEET: 4 OF 9

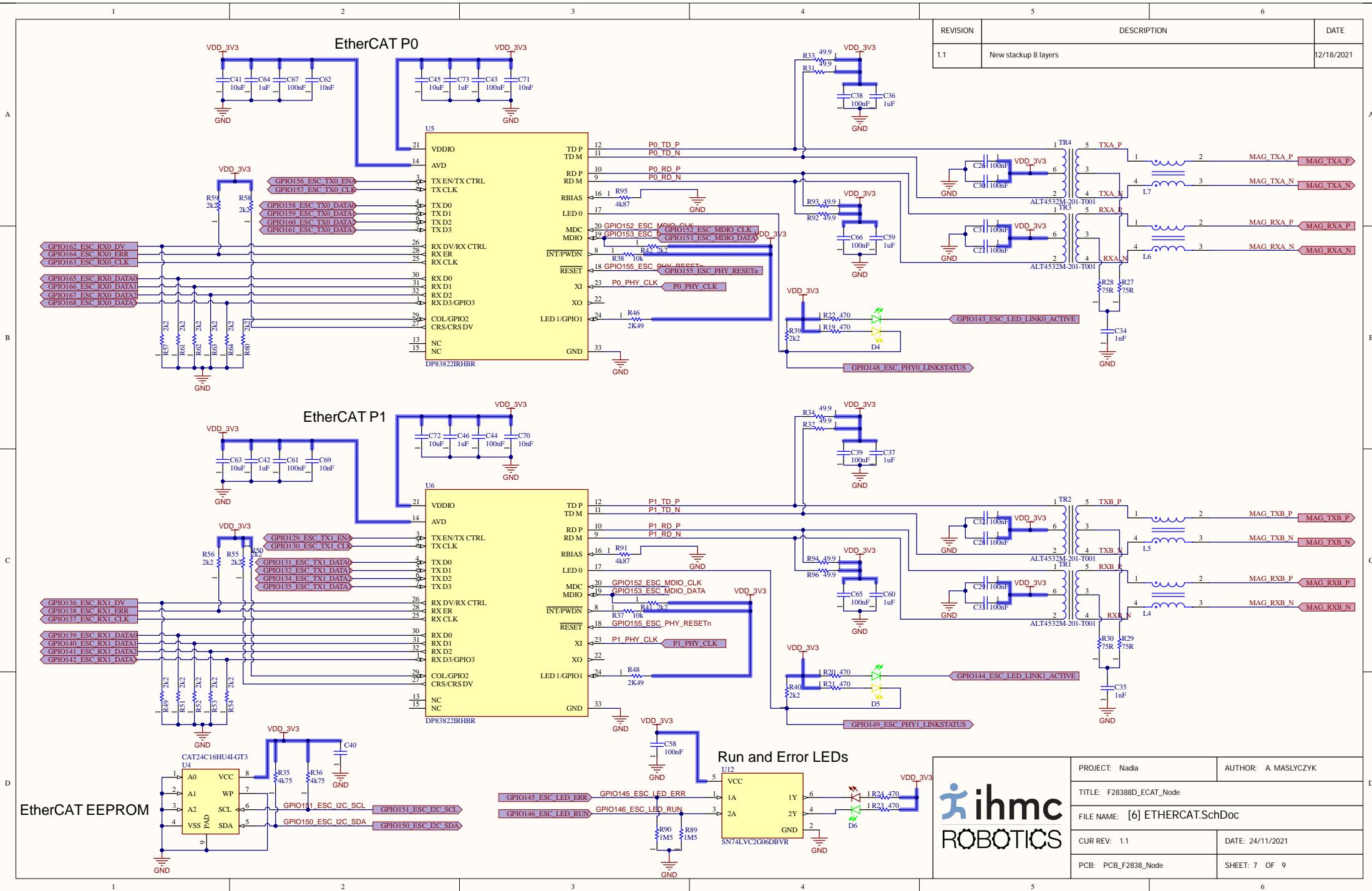
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REVISION	DESCRIPTION			DATE	
1.1	New stackup 8 layers				12/18/2021



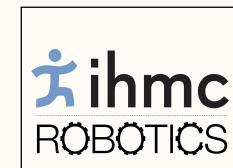
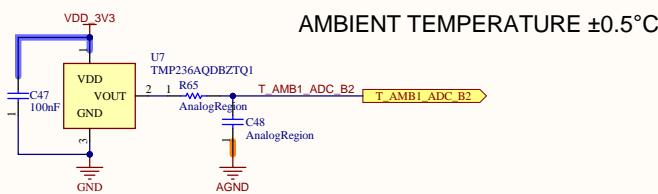
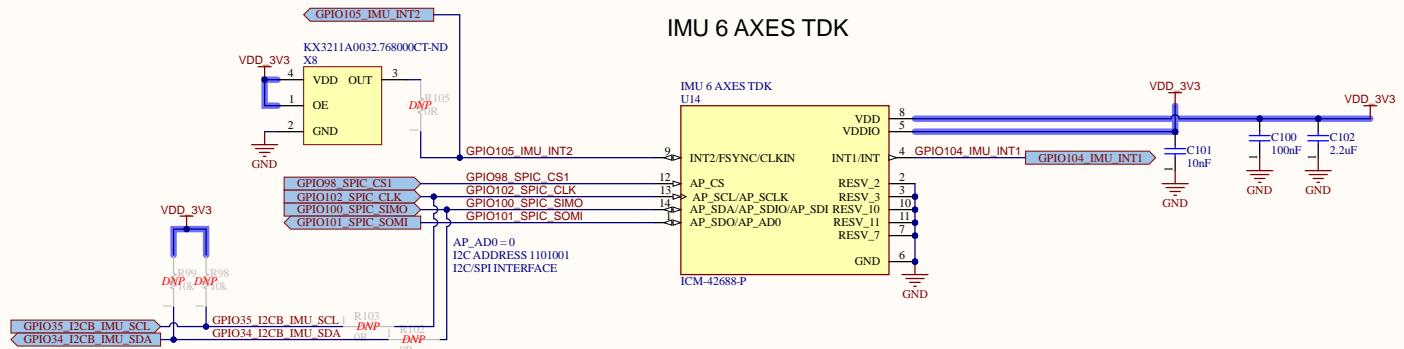
1	2	3	4	5	6
REVISION				DESCRIPTION	DATE
1.1	New stackup 8 layers			12/18/2021	



	PROJECT: Nadia	AUTHOR: A. MASLYCZYK
	TITLE: F2838BD_ECAT_Node	
	FILE NAME: [5] F2838 ADC.SchDoc	
	CUR REV: 1.1	DATE: 24/11/2021
	PCB: PCB_F2838_Node	SHEET: 6 OF 9



1	2	3	4	5	6
				REVISION	DESCRIPTION
				1.1	New stackup 8 layers
				DATE	
				12/18/2021	

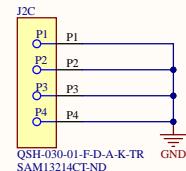
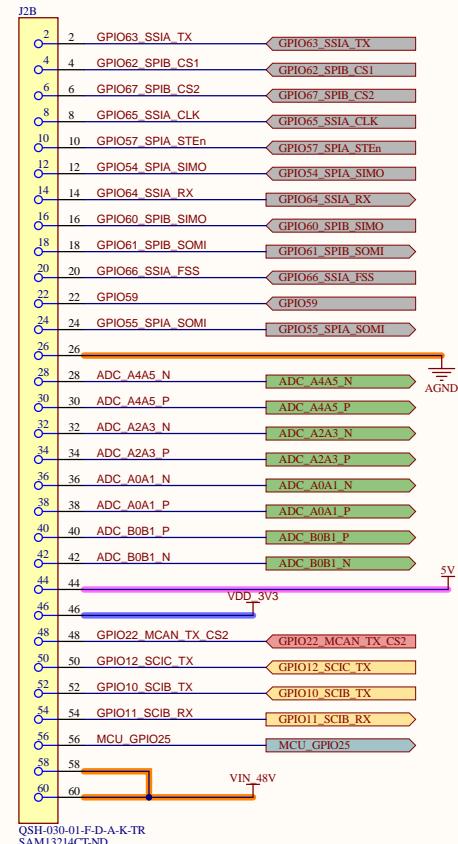
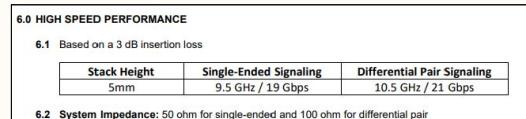
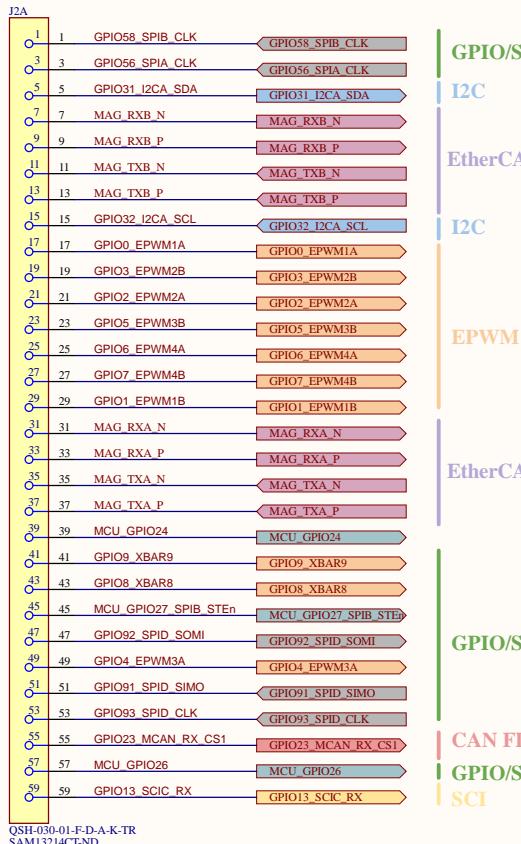


PROJECT: Nadia	AUTHOR: A. MASLYCZYK
TITLE: F2838BD_ECAT_Node	
FILE NAME: [7] SENSORS.SchDoc	
CUR REV: 1.1	DATE: 24/11/2021
PCB: PCB_F2838_Node	SHEET: 8 OF 9

1	2	3	4	5	6	
				REVISION	DESCRIPTION	DATE
				1.1	New stackup 8 layers	12/18/2021

High Speed Socket Strip 60 POS

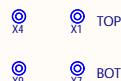
the blade and beam design of the QSH delivers 25 Gbps performance



MOUTING HOLES



FIDUCIALS



PROJECT: Nadia	AUTHOR: A. MASLYCZYK
TITLE: F2838BD_ECAT_Node	
FILE NAME: [8] CONNECTORS MECH.SchDoc	
CUR REV: 1.1	DATE: 24/11/2021
PCB: PCB_F2838_Node	SHEET: 9 OF 9

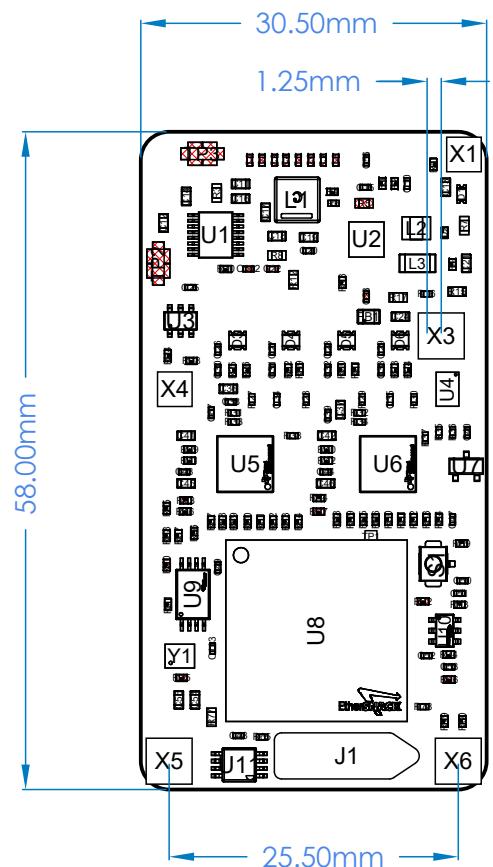
Board assembly view

REV DOC: A

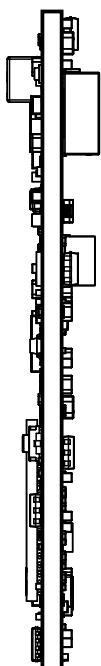
PCB: PCB_F2838_Node.PcbDoc

DESIGNED: Alexis Maslyczyk DATE: 12/21/2021

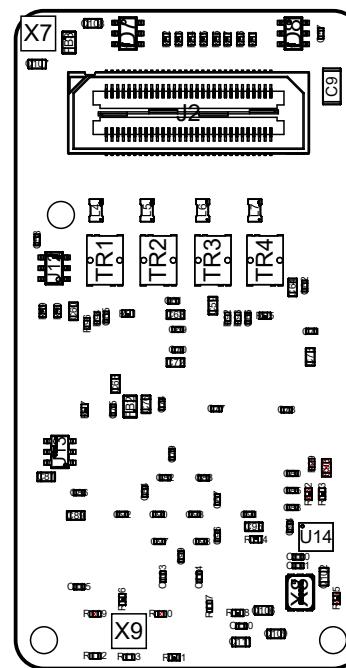
View from Top side (Scale 3:2)



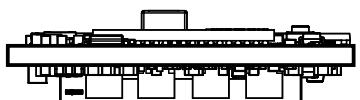
View from Right side (Scale 3:2)



View from Bottom side (Scale 3:2)



View from Front side (Scale 3:2)





PCB Requirements

REV DOC: A

PCB: PCB_F2838_Node.PcbDoc

DESIGNED: Alexis Maslyczyk DATE: 12/21/2021

1. Compliance to standards

- Printed circuit board shall be manufactured as per IPC-6012 Class 2.
- Printed circuit board shall be RoHS compliant.
- Printed circuit board shall be UL796 compliant.
- Printed circuit board shall meet UL94 V-0 flammability rating.
- The acceptability of the printed circuit boards shall be evaluated according to IPC-A-600 Class 2.

2. Board dimensions / tolerances

- Board dimensions shall be as specified in the drill drawing Gerber file.
- Board dimensions are in mms. Tolerances are .XXX +/- 0.127mm

3. Silkscreen

- Silkscreen shall be non-conductive white epoxy ink.
- Silkscreen shall be applied on top of soldermask.
- Silkscreen clearance with solderable copper patterns shall be of at least 0.005" (5 mil).
- Silkscreen shall be applied using a process that ensures that all printed characters are legible.
- Silkscreen clipping is permitted to achieve design and process requirements
- Silkscreen shall be applied using common thermal curing process to print the silkscreen text.
- Silkscreen shall withstand reflow and normal cleaning process.

PCB Requirements

REV DOC: A

PCB: PCB_F2838_Node.PcbDoc

DESIGNED: Alexis Maslyczyk DATE: 12/21/2021

4. PCB Stackup

Layer Stack Legend		Material	Layer	Thickness	Dielectric Material	Type	Gerber Legend	GTO
			Top Overlay					
		Surface Material	Top Solder	0.50mil	Solder Resist	Solder Mask	GTS	
		CF-004	Top Layer	0.71mil		Signal	GTL	
		Prepreg		6.18mil	PP-008	Dielectric		
		CF-004	L2 - PWR	1.38mil		Signal	G1	
		Prepreg		9.84mil	PP-006	Dielectric		
		CF-004	L3 - GND	1.38mil		Signal	G2	
		Prepreg		7.10mil	PP-021	Dielectric		
		Copper	L4 - SIG HOR	1.38mil		Signal	G3	
				9.84mil	FR-4	Dielectric		
		Copper	L5 - SIG VER	1.38mil		Signal	G4	
		Prepreg		7.10mil	PP-021	Dielectric		
		CF-004	L6 - AGND	1.38mil		Signal	G5	
		Prepreg		9.84mil	PP-006	Dielectric		
		CF-004	L7 - PWR 3V3A 1V2	1.38mil		Signal	G6	
		Prepreg		6.18mil	PP-008	Dielectric		
		CF-004	Bottom Layer	0.71mil		Signal	GBL	
		Surface Material	Bottom Solder	0.50mil	Solder Resist	Solder Mask	GBS	
			Bottom Overlay			Legend	GBO	

Total thickness: 66.78mil

5. Approval of manufacturing Gerber files and PCB

Manufacturing Gerber files and detailed PCB Stackup shall be sent to IHMC designer for approval before initiating the board fabrication process.

