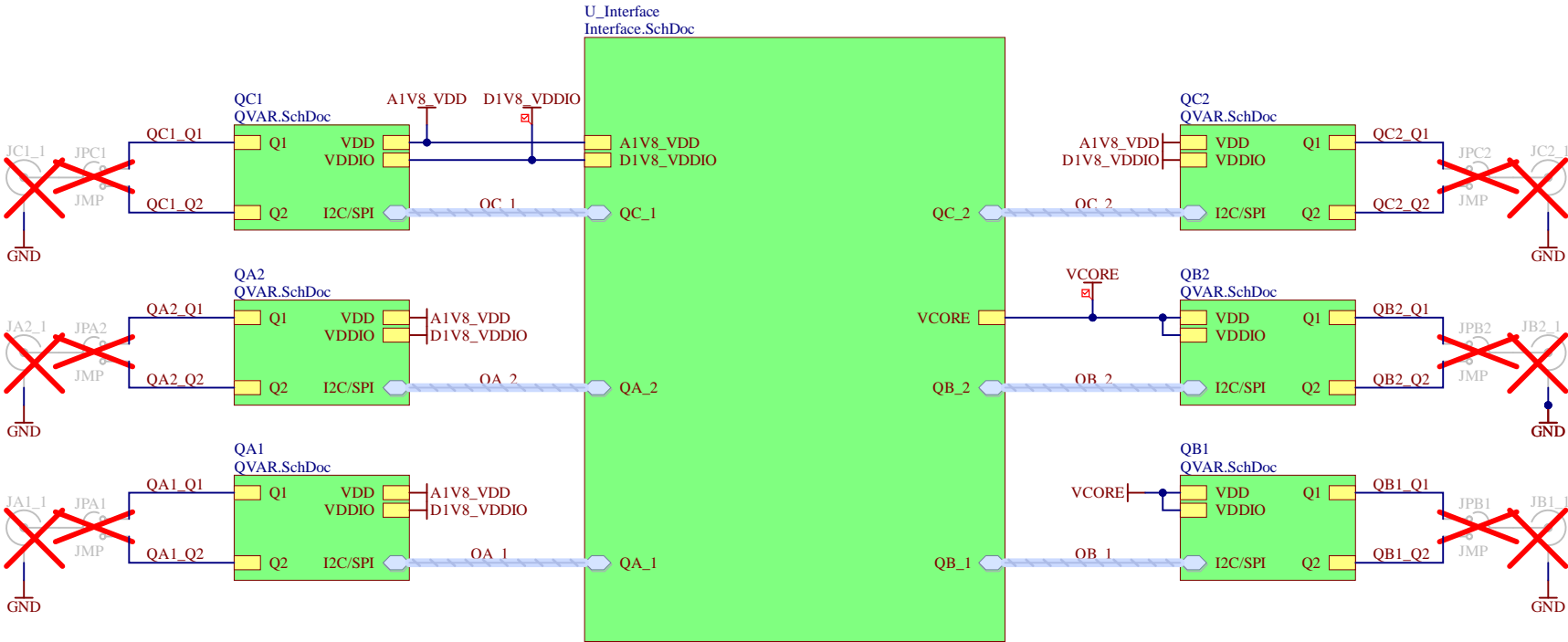
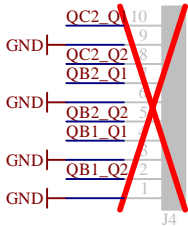
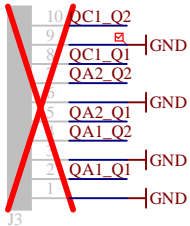


the 2 QVAR attached to I2CB have to be supplied by VCORE!

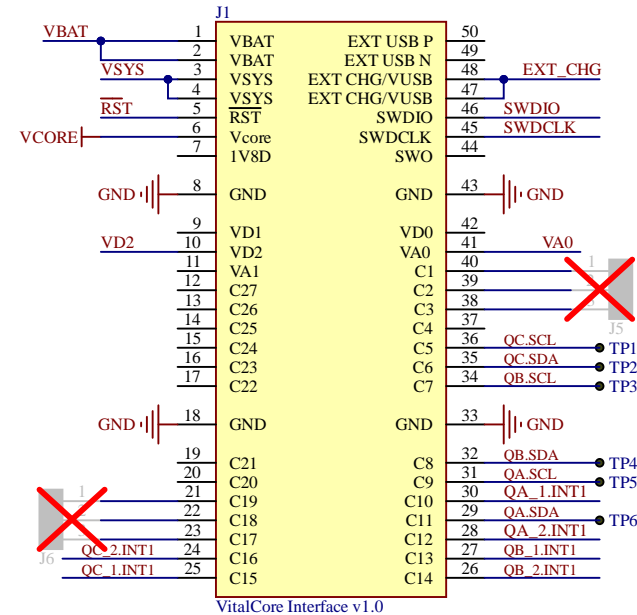
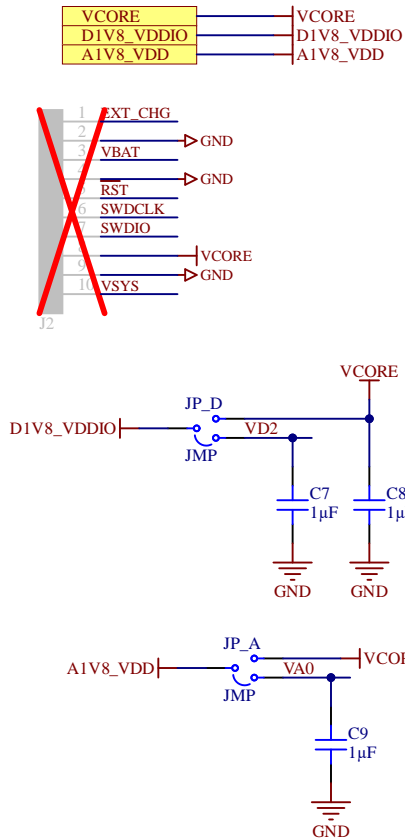
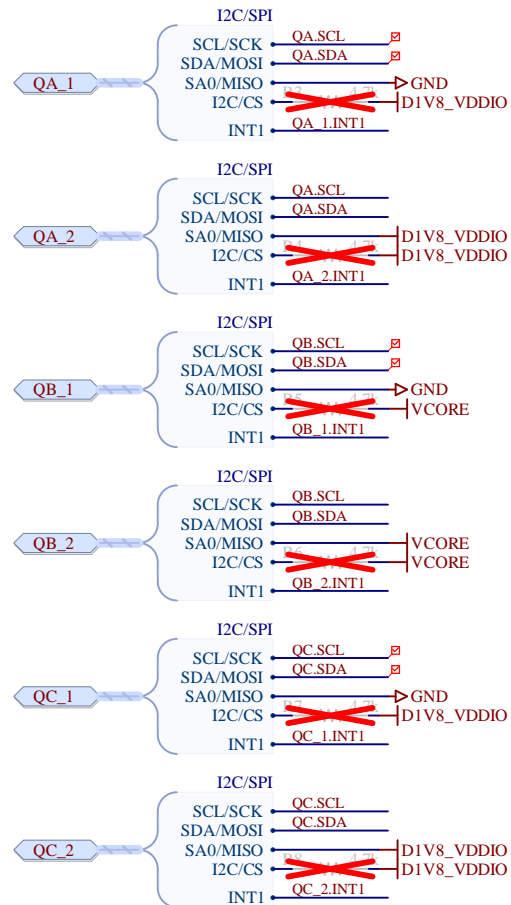


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Laboratory: ETHZ D-ITET PBL
Date: 13/11/2023 20:59:33
Rev: 1.0
Variation: Fabrication
File: main.SchDoc

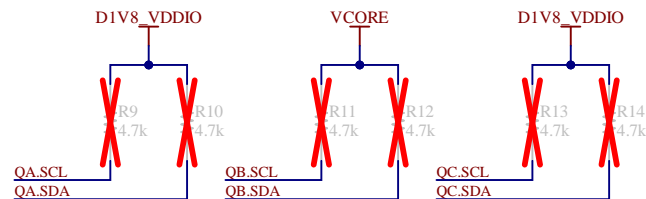
Project: Qvar 6 Channel Vitalcore Backpack
Main

Drawn By: villanif
Checked By: topononelli, nschae, peterste



the 2 QVAR attached to I2CB have to be supplied by VCore!

SWDIO and SWDCLK have to be connected externally in an ideal case. For emergency requirements a solderpad is supplied



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Variation: Fabrication

File: Interface.SchDoc

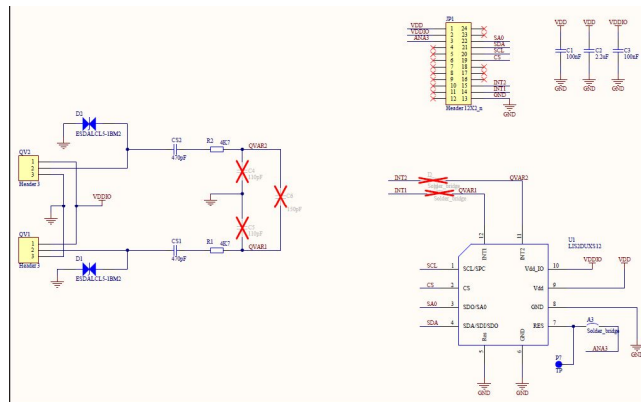
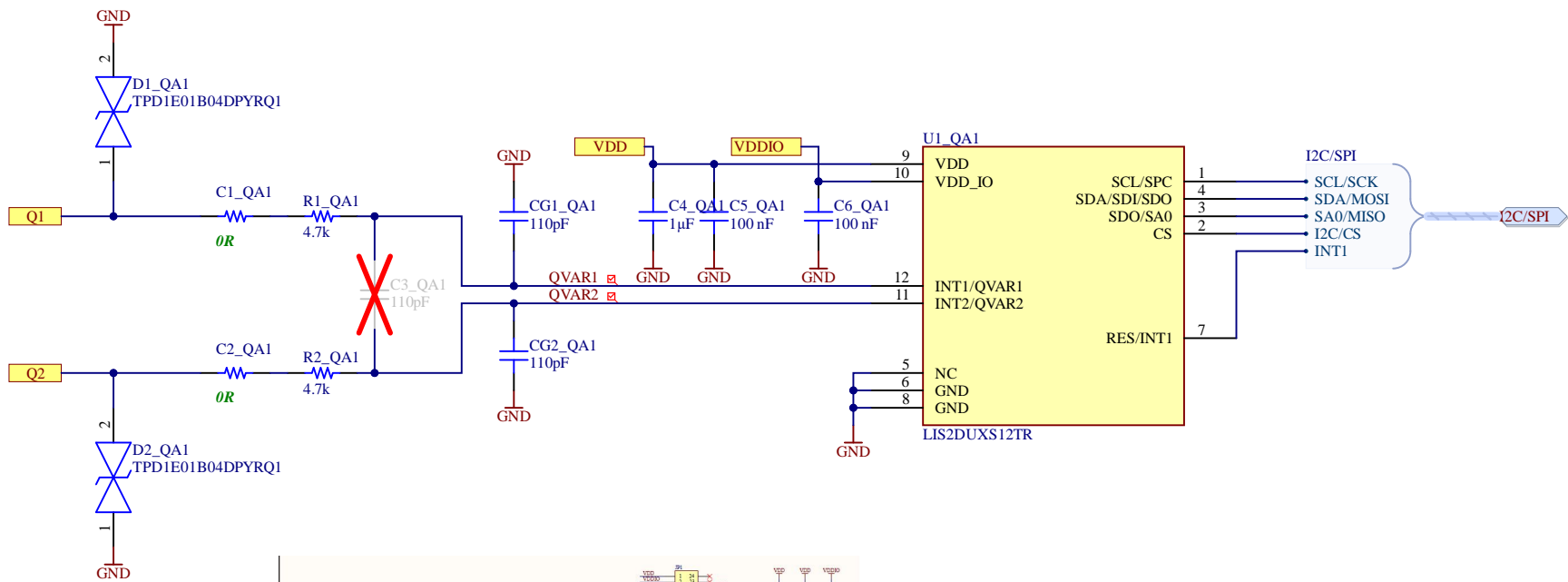
Project: Qvar 6 Channel Vitalcore Backpack

VitalCore Interface

Drawn By: villanif

Checked By: topononelli, nschae, peterste

Sheet: 2 / 3



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Rev: 1.0

Variation: Fabrication

File: QVAR.SchDoc

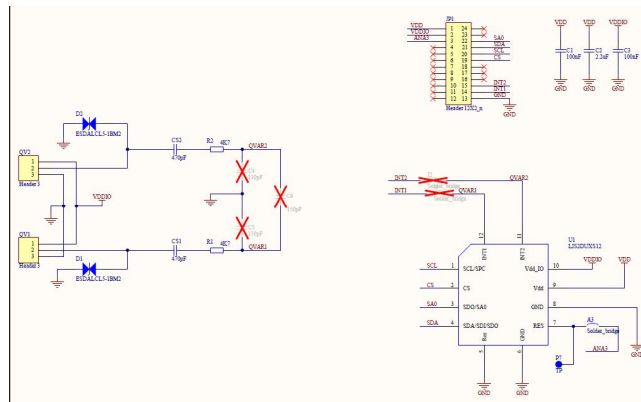
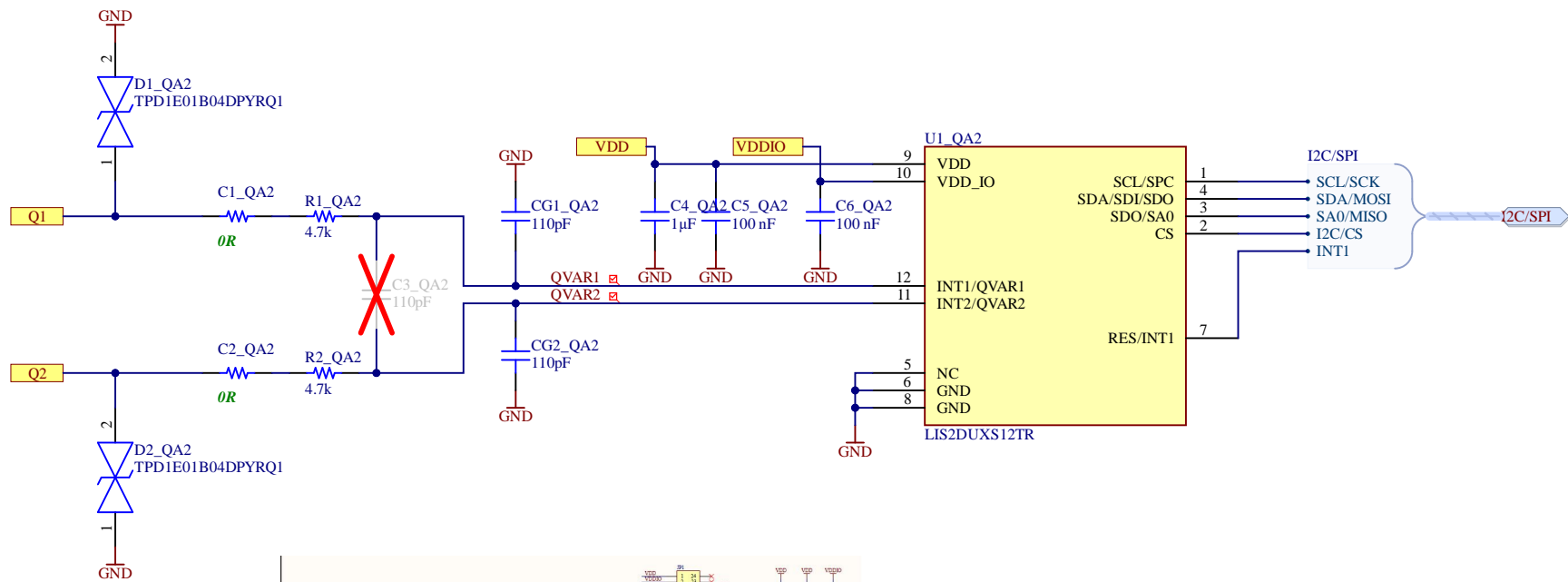
Project: Qvar 6 Channel Vitalcore Backpack

QVAR sensor

Drawn By: villanif

Checked By: topononelli, nschae, peterste

Sheet: 3 / 3



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Rev: 1.0

Variation: Fabrication

File: QVAR.SchDoc

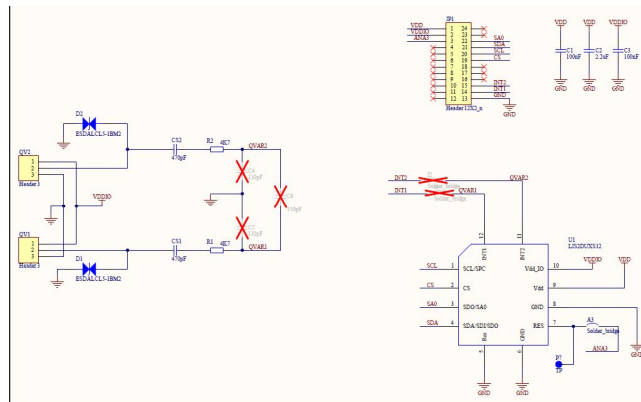
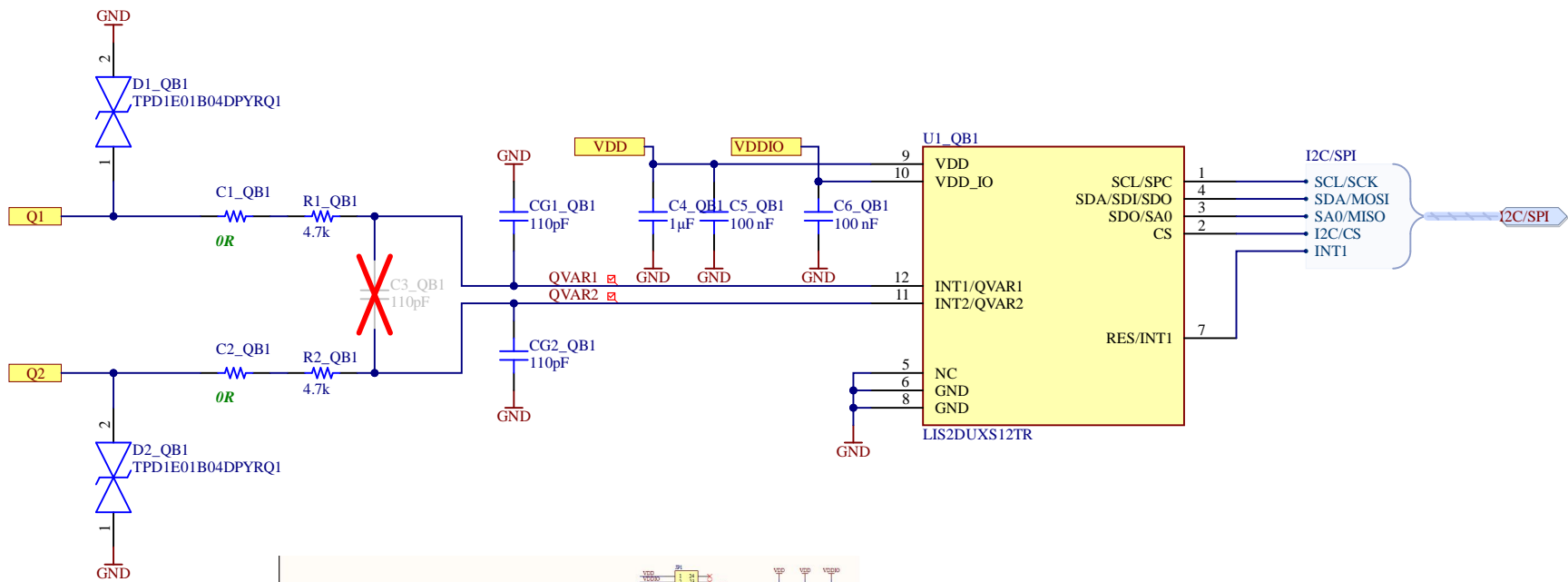
Project: Qvar 6 Channel Vitalcore Backpack

QVAR sensor

Drawn By: villanif

Checked By: topononelli, nschae, peterste

Sheet: 3 / 3



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Variation: Fabrication

File: QVAR.SchDoc

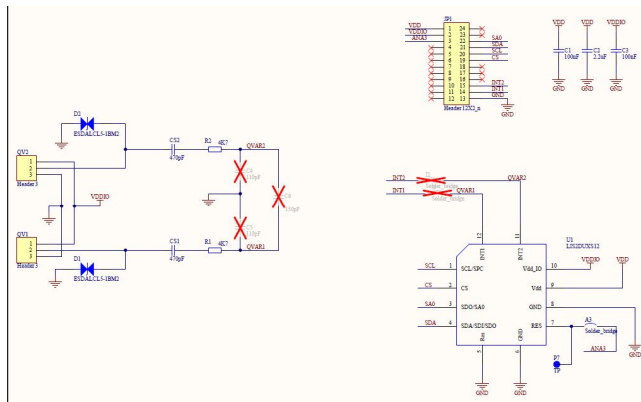
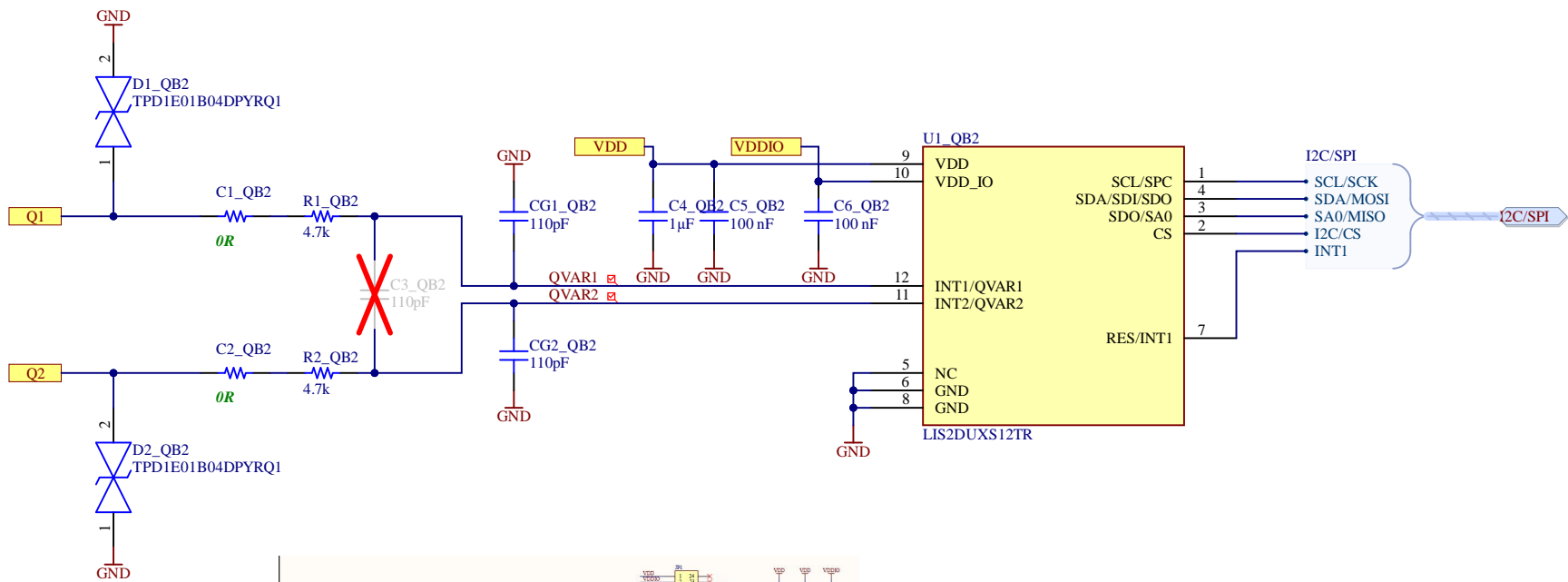
Project: Qvar 6 Channel Vitalcore Backpack

QVAR sensor

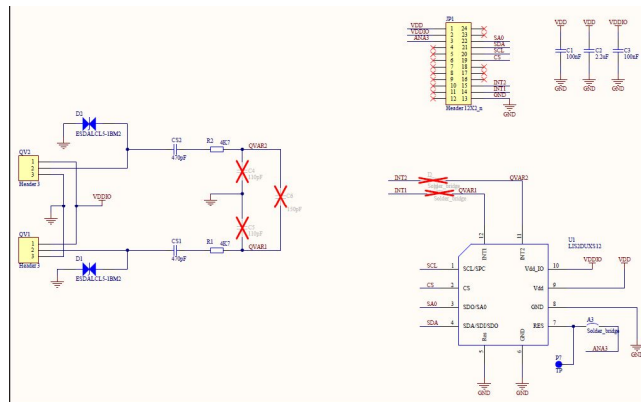
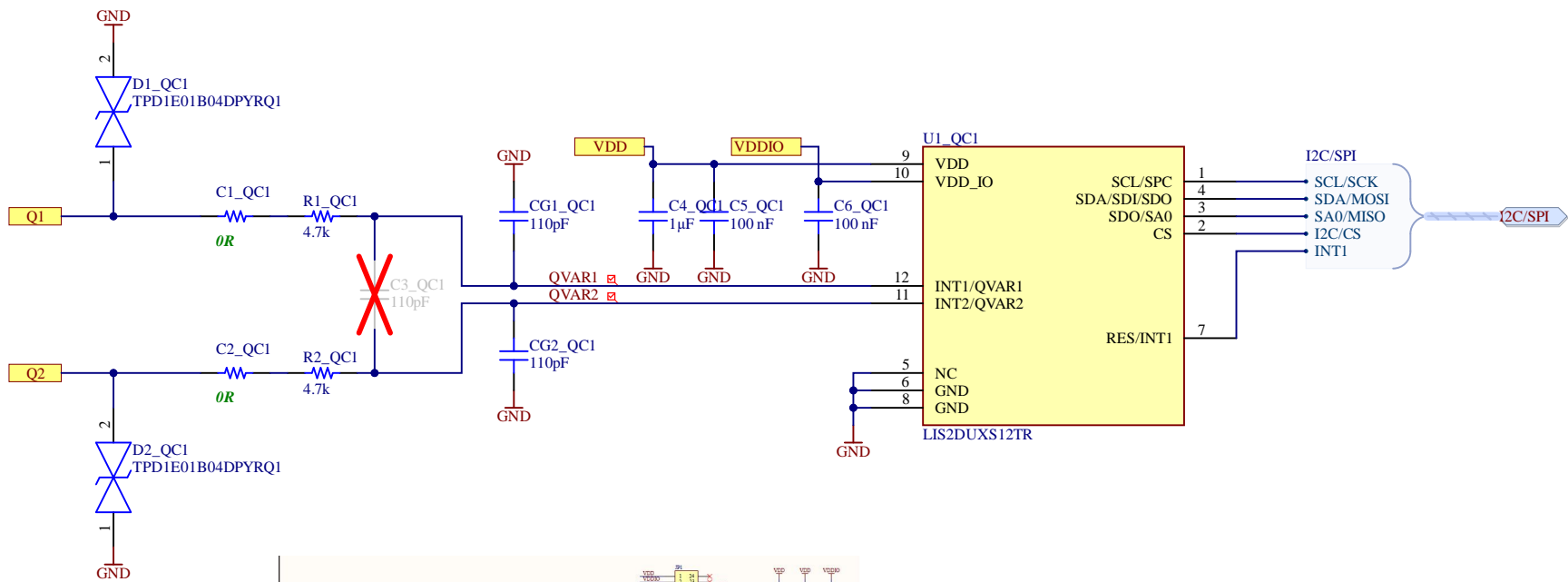
Drawn By: villanif

Checked By: toponelli, nschae, peterste

Sheet: 3 / 3



ETH Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich	Project: Qvar 6 Channel Vitalcore Backpack
	QVAR sensor
	Drawn By: villanif
Laboratory: ETHZ D-ITET PBL, IIS	Checked By: topononelli, nschae, peterste
Date: 13/11/2023 20:59:34	
Rev: 1.0	
Variation: Fabrication	
File: QVAR.SchDoc	Sheet: 3 / 3



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Variation: Fabrication

File: QVAR.SchDoc

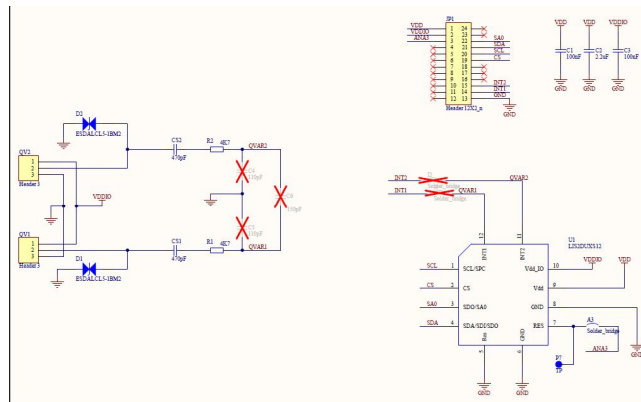
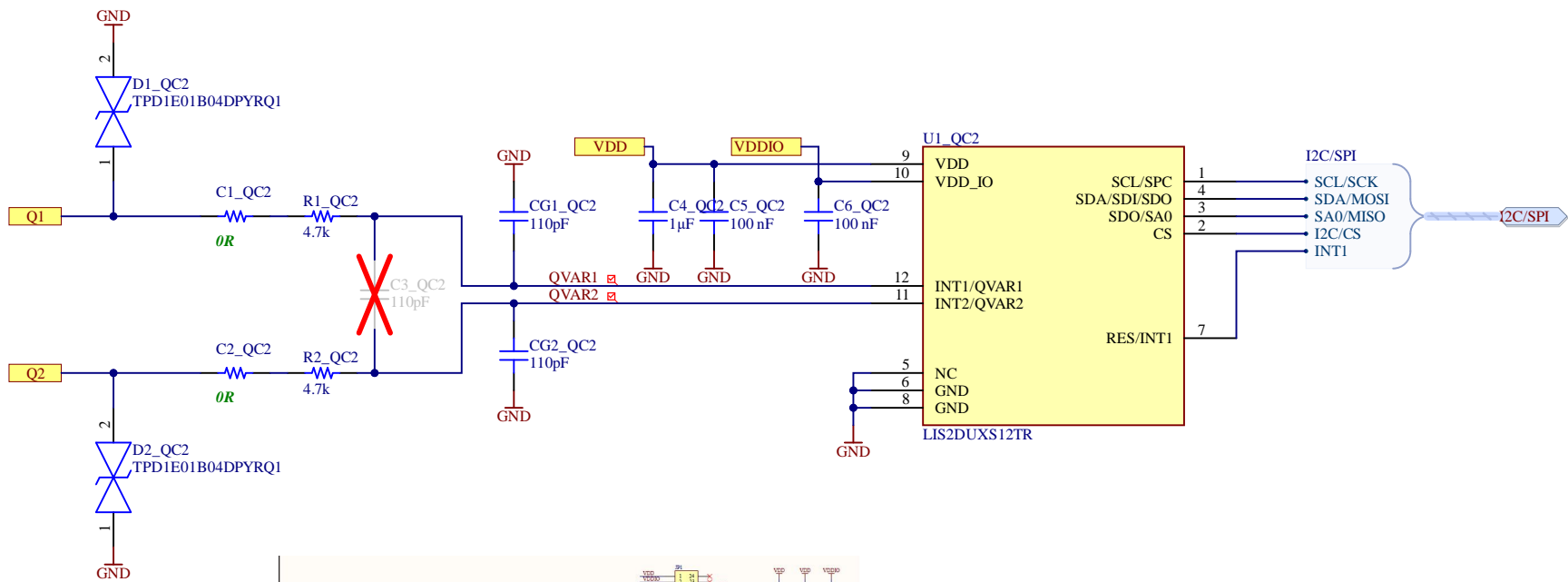
Project: Qvar 6 Channel Vitalcore Backpack

QVAR sensor

Drawn By: villanif

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Sheet: 3 / 3



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Variation: Fabrication

File: QVAR.SchDoc

Project: Qvar 6 Channel Vitalcore Backpack

QVAR sensor

Drawn By: villanif

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Sheet: 3 / 3

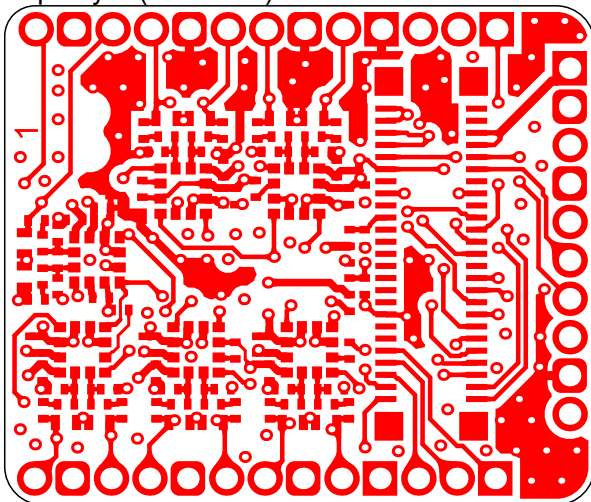
A

B

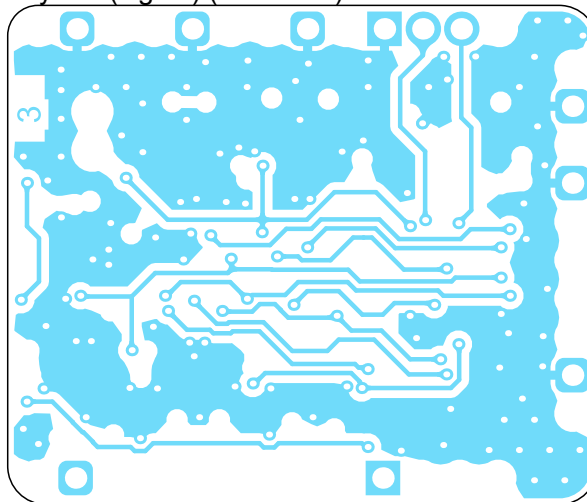
C

D

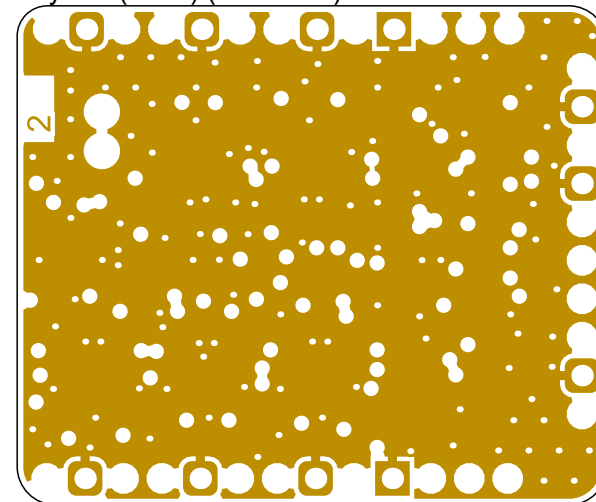
Top Layer (Scale 4:1)



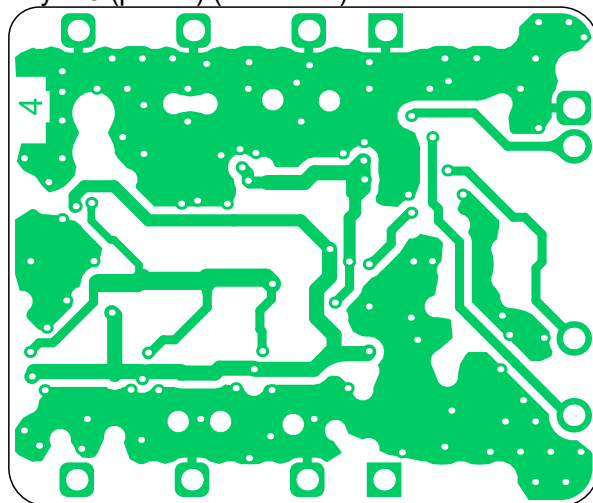
Layer 2 (signal) (Scale 4:1)



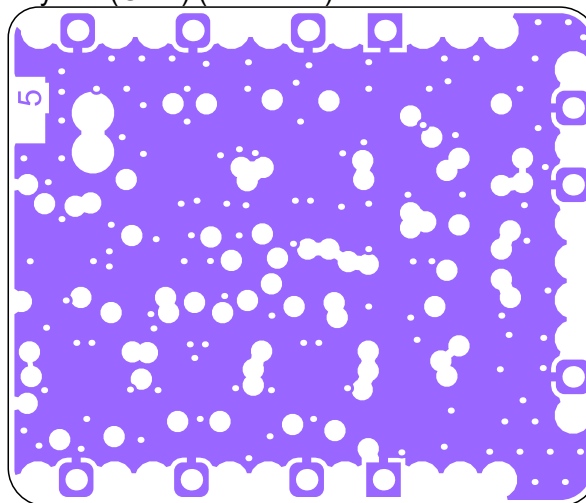
Layer 1 (GND) (Scale 4:1)



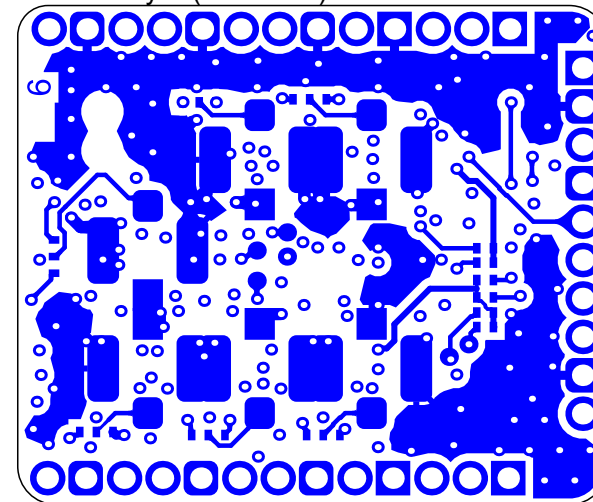
Layer 3 (power) (Scale 4:1)



Layer 4 (GND) (Scale 4:1)



Bottom Layer (Scale 4:1)

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Revision: 1.0

Variant: [No Variations]

File: DOC_ART.PCBDwf

Project: Qvar 6 Channel Vitalcore Backpack

Art

Drawn By: villanif

Checked By: topononelli, nschae, peterste

Sheet: 1/1

A

B

C

D

1

1

2

2

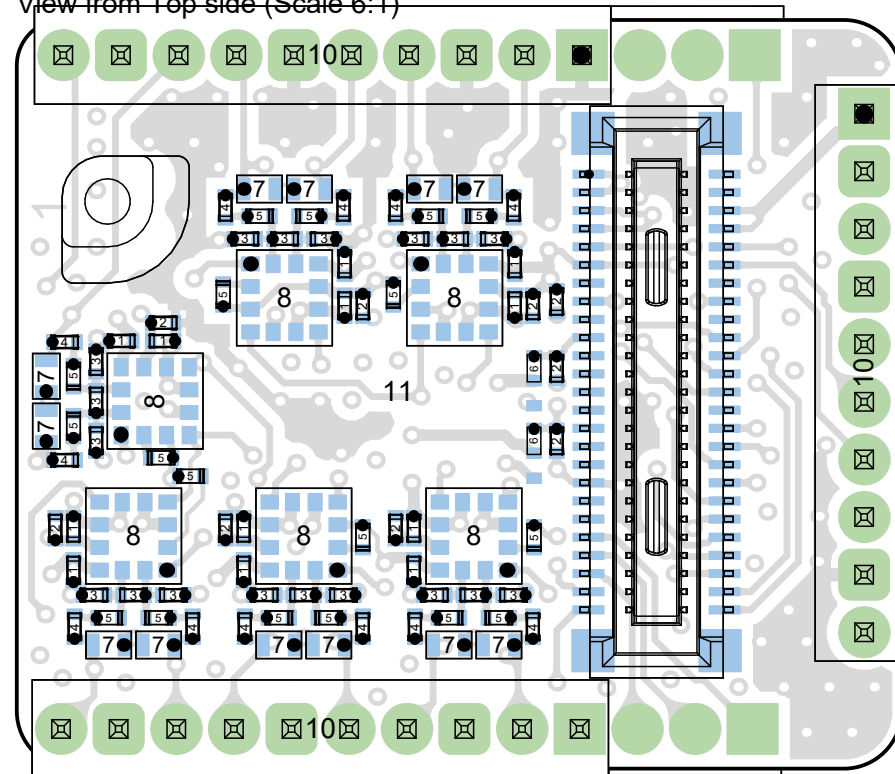
3

3

4

4

View from Top side (Scale 6:1)

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Date: 13/11/2023 21:00

Revision: 1.0

Variant: [No Variations]

File: DOC_ASSEMBLY.PCBDwf

Project: Qvar 6 Channel Vitalcore Backpack

Assembly

Drawn By: villanif

Checked By: topolonelli, nschae, peterste

Sheet: 1/2

A

B

C

D

A

B

C

D

1

1

2

2

3

3

4

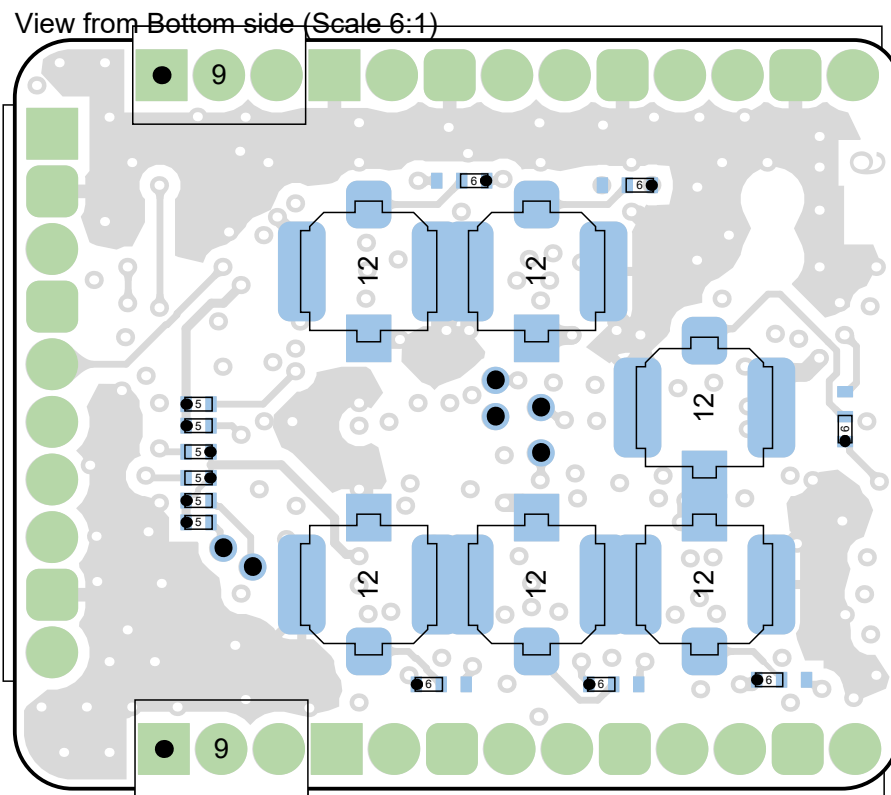
4

A

B

C

D

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Date: 13/11/2023 21:00

Revision: 1.0

Variant: [No Variations]

File: DOC_ASSEMBLY.PCBDwf

Project: Qvar 6 Channel Vitalcore Backpack

Assembly

Drawn By: villanif

Checked By: topononelli, nschae, peterste

Sheet: 2/2

A

B

C

D

1

1

2

2

3

3

4

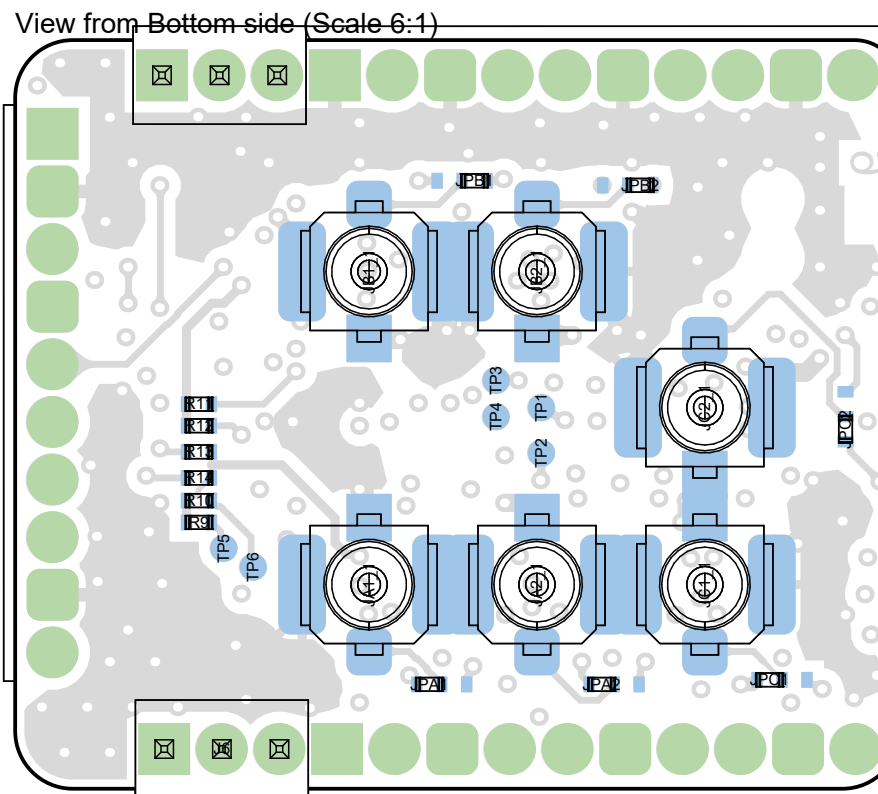
4

A

B

C

D

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Date: 13/11/2023 21:00

Revision: 1.0

Variant: [No Variations]

File: DOC_CONN.PCBDwf

Project: Qvar 6 Channel Vitalcore Backpack

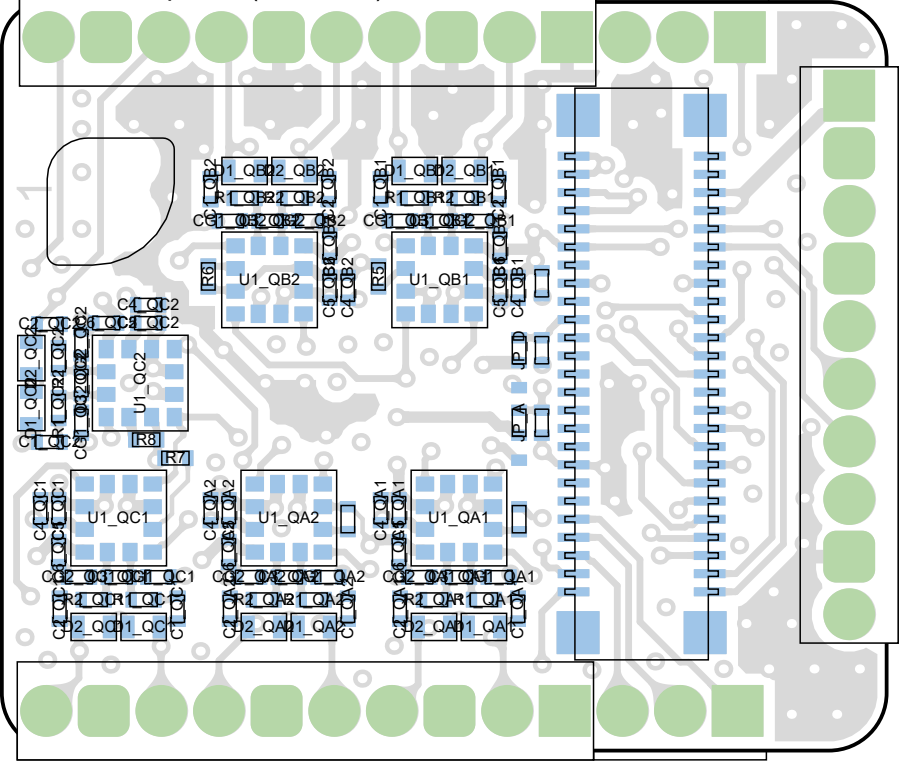
Connectors

Drawn By: villanif

Checked By: topononelli, nschae, peterste

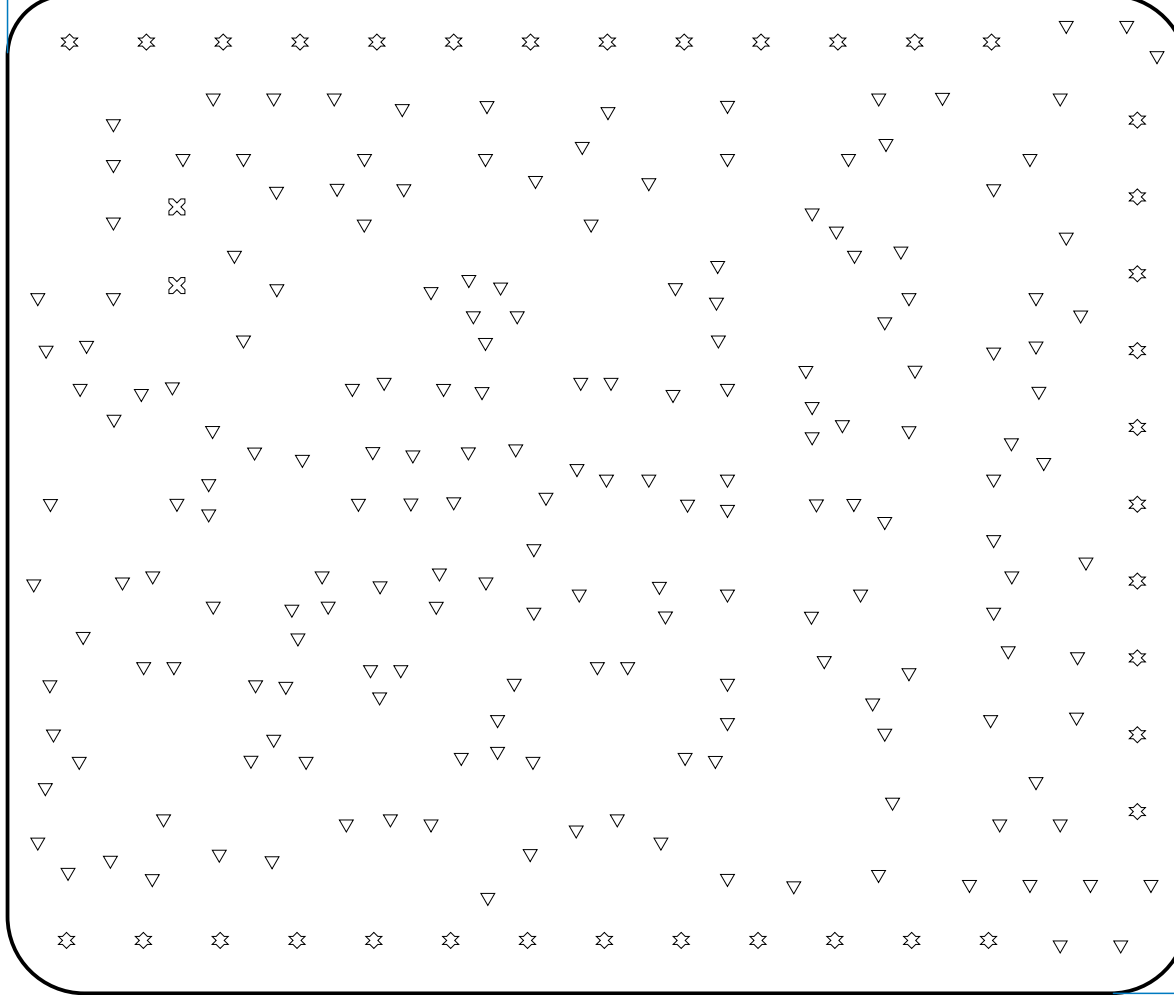
Sheet: 1/2

View from Top side (Scale 6:1)



<div><div><div>ETH</div><div>Eidgenössische Technische Hochschule Zürich</div><div>Swiss Federal Institute of Technology Zurich</div></div><div>Laboratory: ETHZ D-ITET PBL</div><div>Date: 13/11/2023 21:00</div><div>Revision: 1.0</div><div>Variant: [No Variations]</div><div>File: DOC_CONN.PCBDwf</div></div>	Project: Qvar 6 Channel Vitalcore Backpack
	Connectors
	Drawn By: villanif
	Checked By: topononelli, nschae, peterste
	Sheet: 2/2

Drill Drawing View (Scale 8:1)



Drill Table

Symbol	Count	Hole Size	Plated	Drill Layer Pair
▽	193	0.20mm	Plated	Top Layer - Bottom Layer
☆	36	0.71mm	Plated	Top Layer - Bottom Layer
⊗	2	0.90mm	Non-Plated	Top Layer - Bottom Layer
	231 Total			

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Revision: 1.0
Variant: [No Variations]
File: DOC_MANUFACTURE.PCBDwf

Project: Qvar 6 Channel Vitalcore Backpack
Manufacturing

Drawn By: villanif
Checked By: topononelli, nschae, peterste

Sheet: 1/2

A

B

C

D

Layer Stack Legend

Layer	Type	Gerber	Thickness
Board Layer Stack Top Solder	Solder Mask	GTS	0.025mm
Top Surface Finish	Surface Finish		0.004mm
Top Layer	Signal	GTL	0.035mm
	Dielectric		0.099mm
Layer 1 (GND)	Signal	G1	0.015mm
	Dielectric		0.350mm
Layer 2 (signal)	Signal	G2	0.015mm
	Dielectric		0.109mm
Layer 3 (power)	Signal	G3	0.015mm
	Dielectric		0.350mm
Layer 4 (GND)	Signal	G4	0.015mm
	Dielectric		0.099mm
Bottom Layer	Signal	GBL	0.035mm
Bottom Surface Finish	Surface Finish		0.004mm
Board Layer Stack Bottom Solder	Solder Mask	GBS	0.025mm

NOTES:

- Via in pad
- 0.8mm Board: Use JLCPCB standard stackup
- ENIG finish.

<div><div>ETH</div><div>Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich</div></div>	Project: Qvar 6 Channel Vitalcore Backpack
	Manufacturing
Laboratory: ETHZ D-ITET PBL	Drawn By: villanif
Date: 13/11/2023 21:00	Checked By: topononelli, nschae, peterste
Revision: 1.0	
Variant: [No Variations]	
File: DOC_MANUFACTURE.PCBDwf	Sheet: 2/2

A

B

C

D

A

B

C

D

Bill Of Materials

Line #	Designator	Name	Quantity	Design Item Id	Manufacturer	Manufacturer Part Number
1	C5_QA1, C5_QA2, C5_QB1, C5_QB2, C5_QC1, C5_QC2, C6_QA1, C6_QA2, C6_QB1, C6_QB2, C6_QC1, C6_QC2	100 nF	12	CAP_0201_100n_10V	Murata	GRM033R6YA104ME14D
2	C4_QA1, C4_QA2, C4_QB1, C4_QB2, C4_QC1, C4_QC2, C7, C8, C9	1µF	9	CAP_0201_1u_10V	Murata	GRM033C81A105ME05D
3	C3_QA1, C3_QA2, C3_QB1, C3_QB2, C3_QC1, C3_QC2, CG1_QA1, CG1_QA2, CG1_QB1, CG1_QB2, CG1_QC1, CG1_QC2, CG2_QA1, CG2_QA2, CG2_QB1, CG2_QB2, CG2_QC1, CG2_QC2	110pF	18	CAP_0201_110p_50V	Murata	GRM0335C1H111JA01D
4	C1_QA1, C1_QA2, C1_QB1, C1_QB2, C1_QC1, C1_QC2, C2_QA1, C2_QA2, C2_QB1, C2_QB2, C2_QC1, C2_QC2	470pF	12	CAP_0201_470p_25V	Murata	GRM0335C1E471JA01D
5	R1_QA1, R1_QA2, R1_QB1, R1_QB2, R1_QC1, R1_QC2, R2_QA1, R2_QA2, R2_QB1, R2_QB2, R2_QC1, R2_QC2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14	4.7k	24	R_0201_4.7K	Panasonic	ERJ-1GNF4701C
6	JP_A, JP_D, JPA1, JPA2, JPB1, JPB2, JPC1, JPC2	JMP	8	JMP_0201_3w	Panasonic	ERJ-1GN0R00C
7	D1_QA1, D1_QA2, D1_QB1, D1_QB2, D1_QC1, D1_QC2, D2_QA1, D2_QA2, D2_QB1, D2_QB2, D2_QC1, D2_QC2	TPD1E01B04DPYRQ1	12	TPD1E01B04DPYRQ1	Texas Instruments	TPD1E01B04DPYRQ1
8	U1_QA1, U1_QA2, U1_QB1, U1_QB2, U1_QC1, U1_QC2	LIS2DUXS12TR	6	LIS2DUXS12TR	STMicroelectronics	LIS2DUXS12TR
9	J5, J6	FTS-103-01-L-S	2	FTS-103-01-L-S	Samtec	FTS-103-01-L-S
10	J2, J3, J4	FTS-110-01-L-S	3	FTS-110-01-L-S	Samtec	FTS-110-01-L-S
11	J1	VitalCore Interface v1.0	1	BACKPACK_INTERFACE_ V1.0	Hirose	DF40C(2.0)-50DS-0.4V(51)
12	JA1_1, JA2_1, JB1_1, JB2_1, JC1_1, JC2_1	CONMHF1-SMD-G-T	6	CONMHF1-SMD-G-T	TE Connectivity	CONMHF1-SMD-G-T

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Date: 13/11/2023 21:00

Revision: 1.0

Variant: [No Variations]

File: DOC_BOM.PCBDwf

Project: Qvar 6 Channel Vitalcore Backpack

BOM

Drawn By: villanif

Checked By: topolonelli, nschae, peterste

Sheet: 1/1

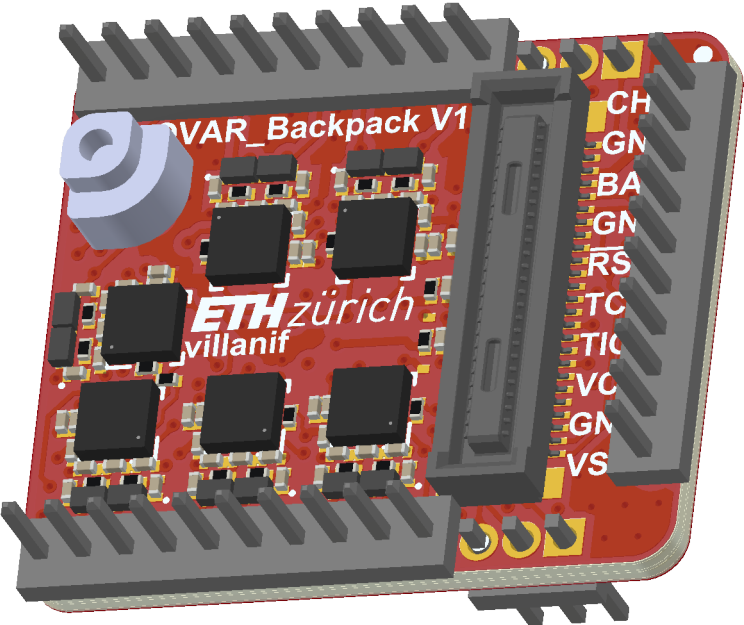
A

B

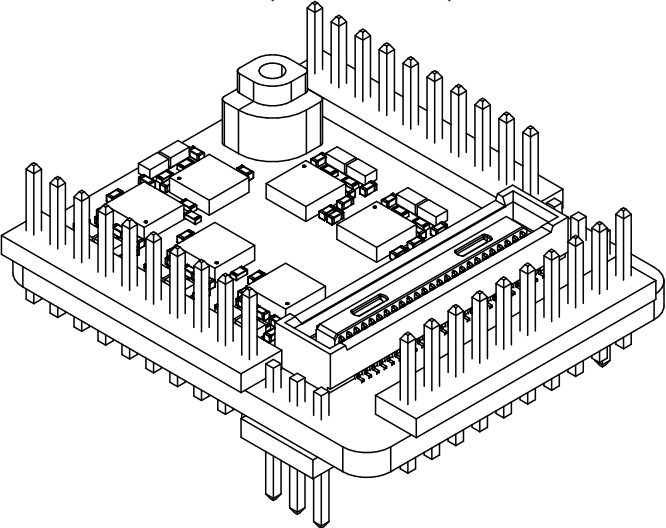
C

D

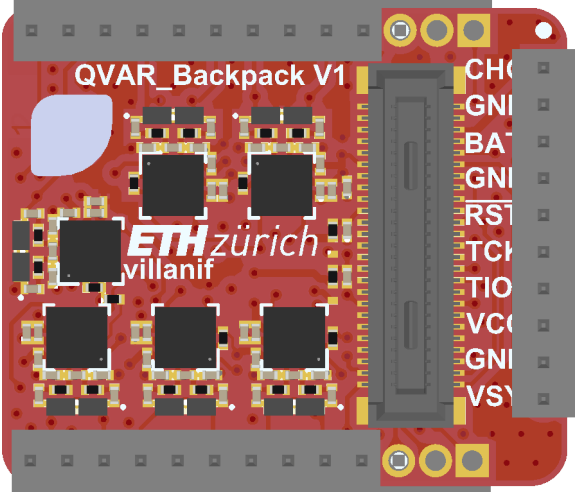
Realistic View



View from Front side (Scale 3.528:1)



Realistic View



Realistic View

