

A

A

B

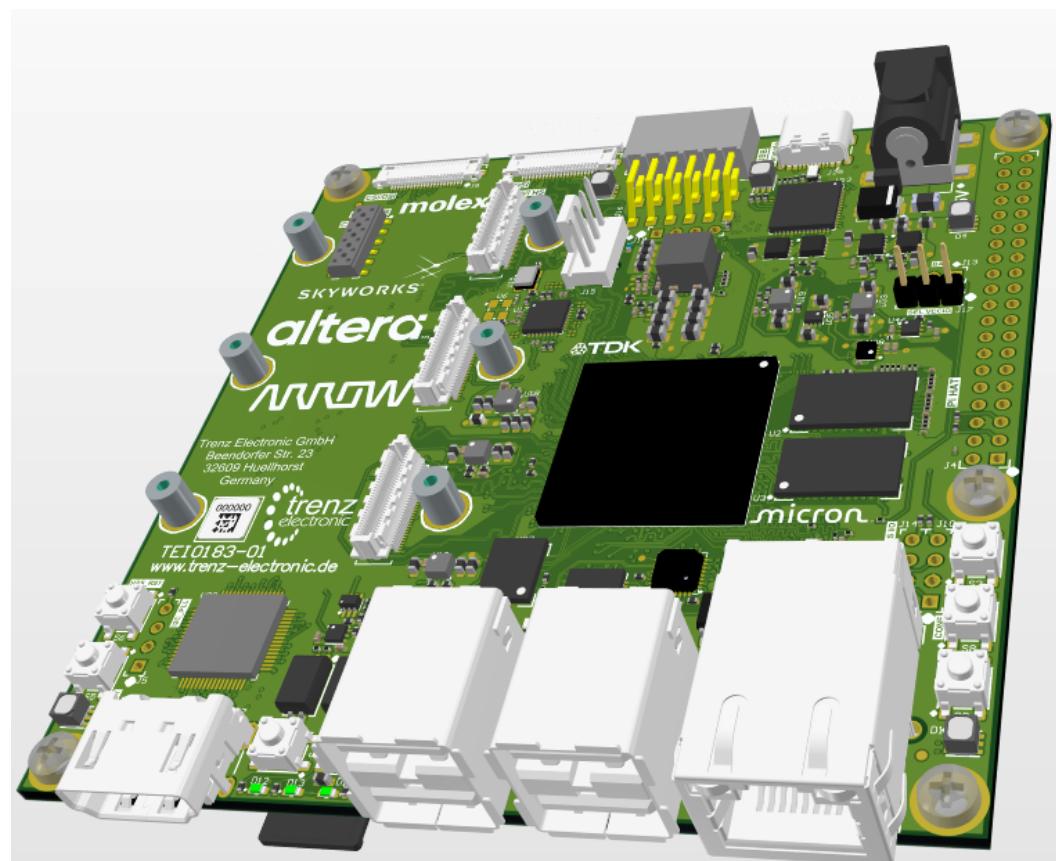
B

C

C

D

D



Regarding the usage of our schematics and alike documentation for Trenz module TEI0183.

Project is protected under copyright and we strongly and strictly prohibit the reverse engineering or recreation, even if the design is just adapted or modified.

TEI0183 is protected under such right and in case of plagiarism we will have to do anything necessary in order to protect our assets.

Schematics and other handouts serve for informational purposes only!

Drawn by	VT
Checked by	MT
Assembly variant	NHE22-B
Created by	VT
Modified by	VT
Modified at	2026-01-12



Title: TEI0183 - Legal Notices		
A4	Number: TEI0183 NHE22-B	Rev. 01
Date: 22.01.2026	Copyright: Trenz Electronic GmbH	Page 1 of 34
Filename: Legal Notices Modules.SchDoc		

REV	Description	
-01	Initial revision	VT
A		

A

A

B

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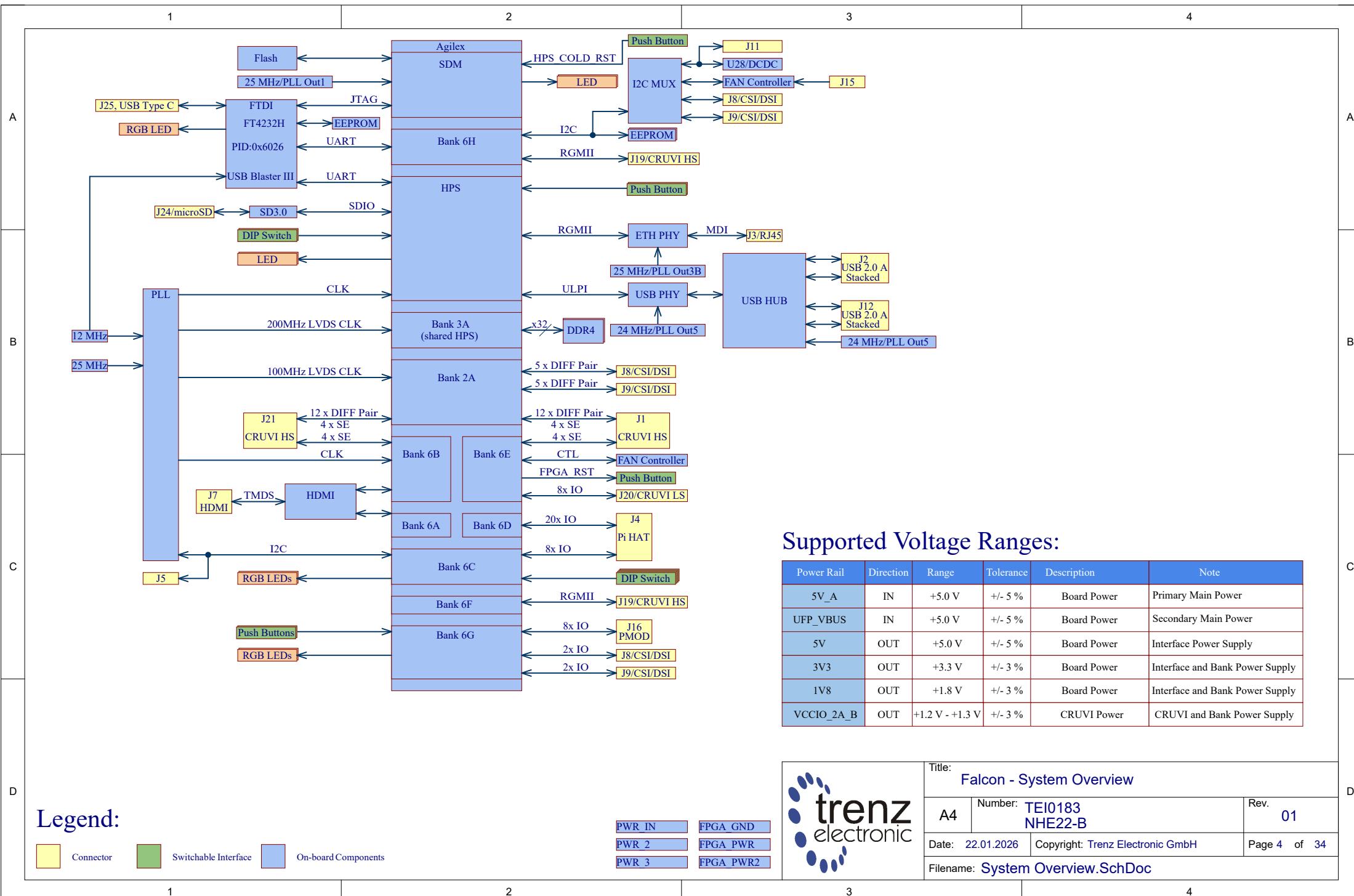
C

D

D



Title: Falcon - Revision Changes		
A4	Number: TEI0183 NHE22-B	Rev. 01
Date: 22.01.2026	Copyright: Trenz Electronic GmbH	Page 3 of 34
Filename: Revision Changes.SchDoc		



## Legend:

## Hardware Components

PWR IN	FPGA GND
PWR 2	FPGA PWR
PWR 3	FPGA PWR2



**Title:**

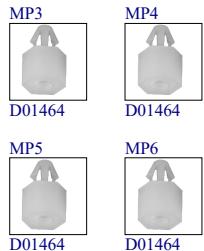
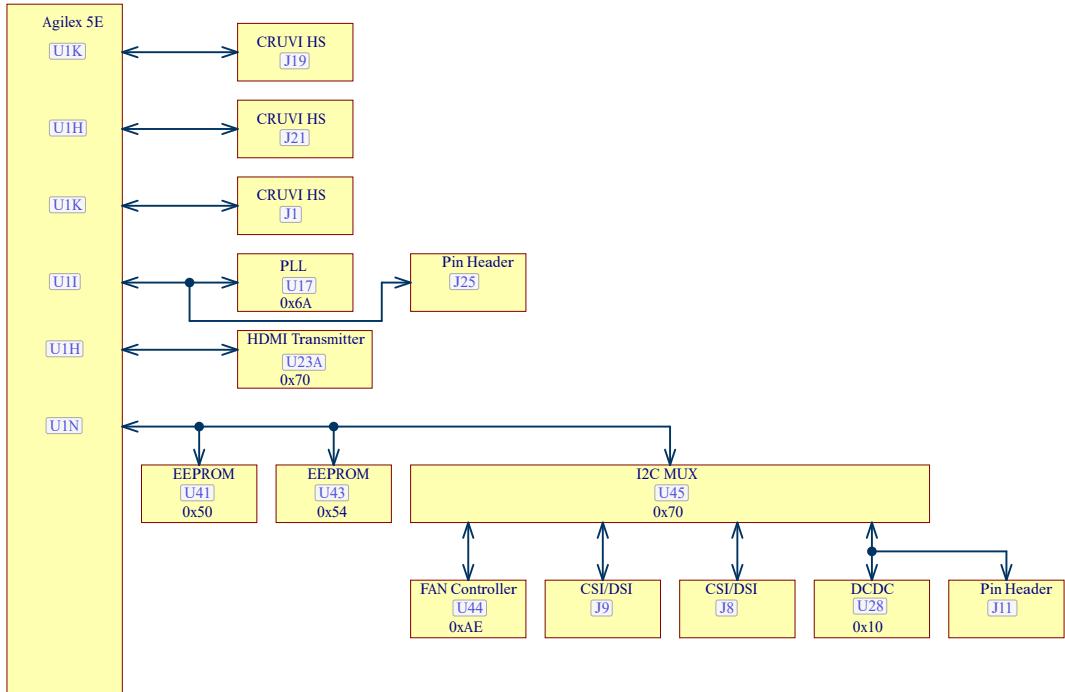
# Falcon - System Overview

# NHE22-B

Date: 22.01.2026 Copyright: Trenz Electronic GmbH Page 4 of 34

Filename: System Overview.SchDoc

## I2C Structure:



MECH2

TE Address Overlay

LOGO ADDRESS  
LOGO1

TE Logo PRINT Layer

LOGO PRINT

CE

CE Logo on Top Overlay

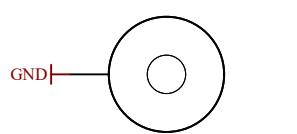
CE-TOPOVERLAY  
RoHS

RoHS Logo on Top Overlay

RoHS-TOPOVERLAY  
WEEE

WEEE Logo on Top Overlay

WEEE-TOPOVERLAY

Serial1  
Serial  
Serialnumber 6,3 x 6.3mm

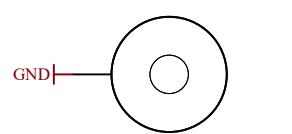
Mount.Hole 3.2mm für Unterlegscheibe



Mount.Hole 3.2mm für Unterlegscheibe



Mount.Hole 3.2mm für Unterlegscheibe



Mount.Hole 3.2mm für Unterlegscheibe



PM1 PM2 PM3



PM4 PM5 PM6

UKCA  
UKCA Logo on Top Overlay  
UKCA-TOPOVERLAY

Design drawn by: VT	Checked by:
Assembly variant: NHE22-B	
Created by: VT	
Modified by: VT	
Modified at: 2026-01-12	



Title: TE0183 - Arrow Falcon Board

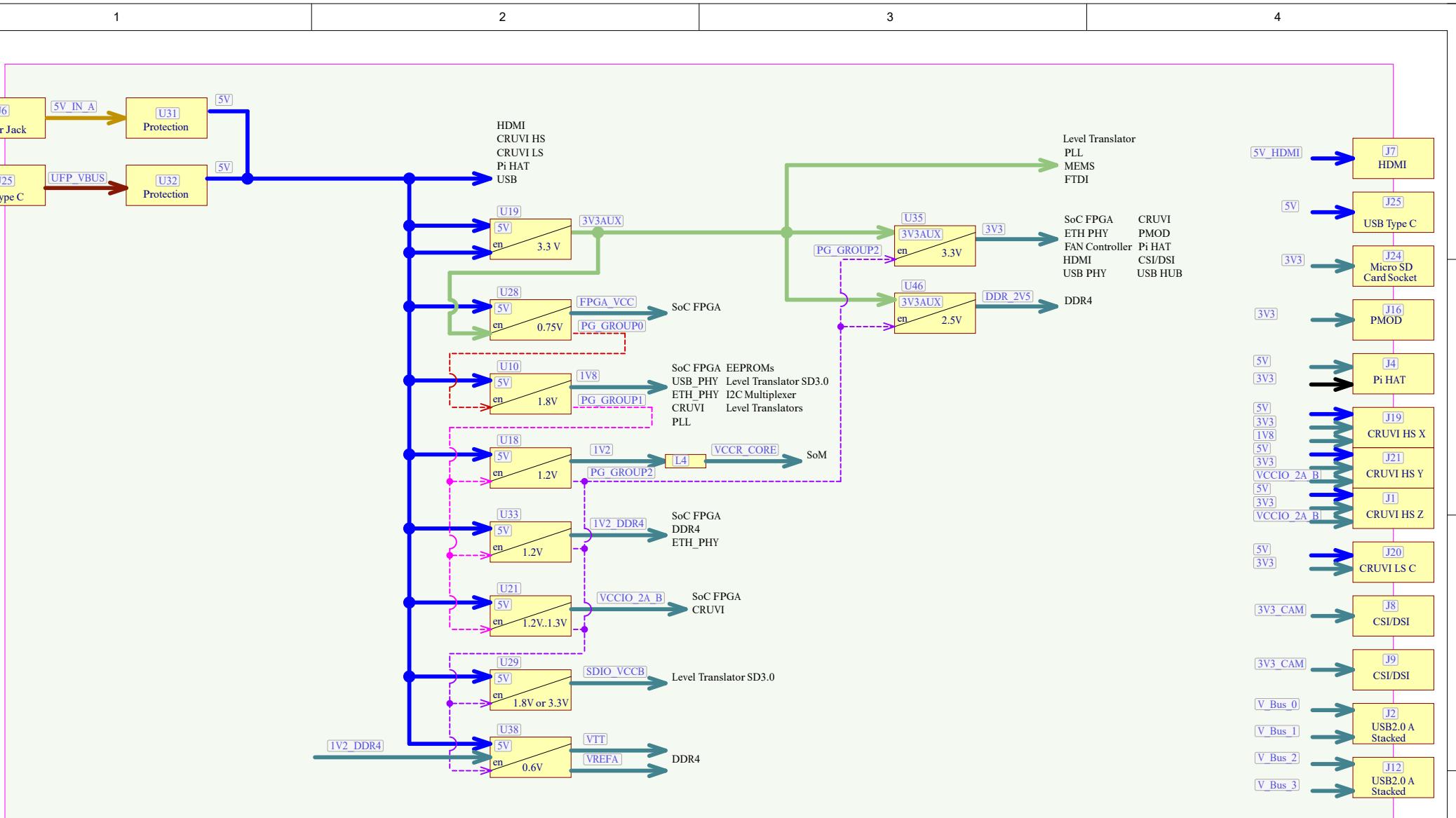
A4 Number: TEI0183  
NHE22-B

Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: TEI0183.SchDoc



Title: Power Diagram

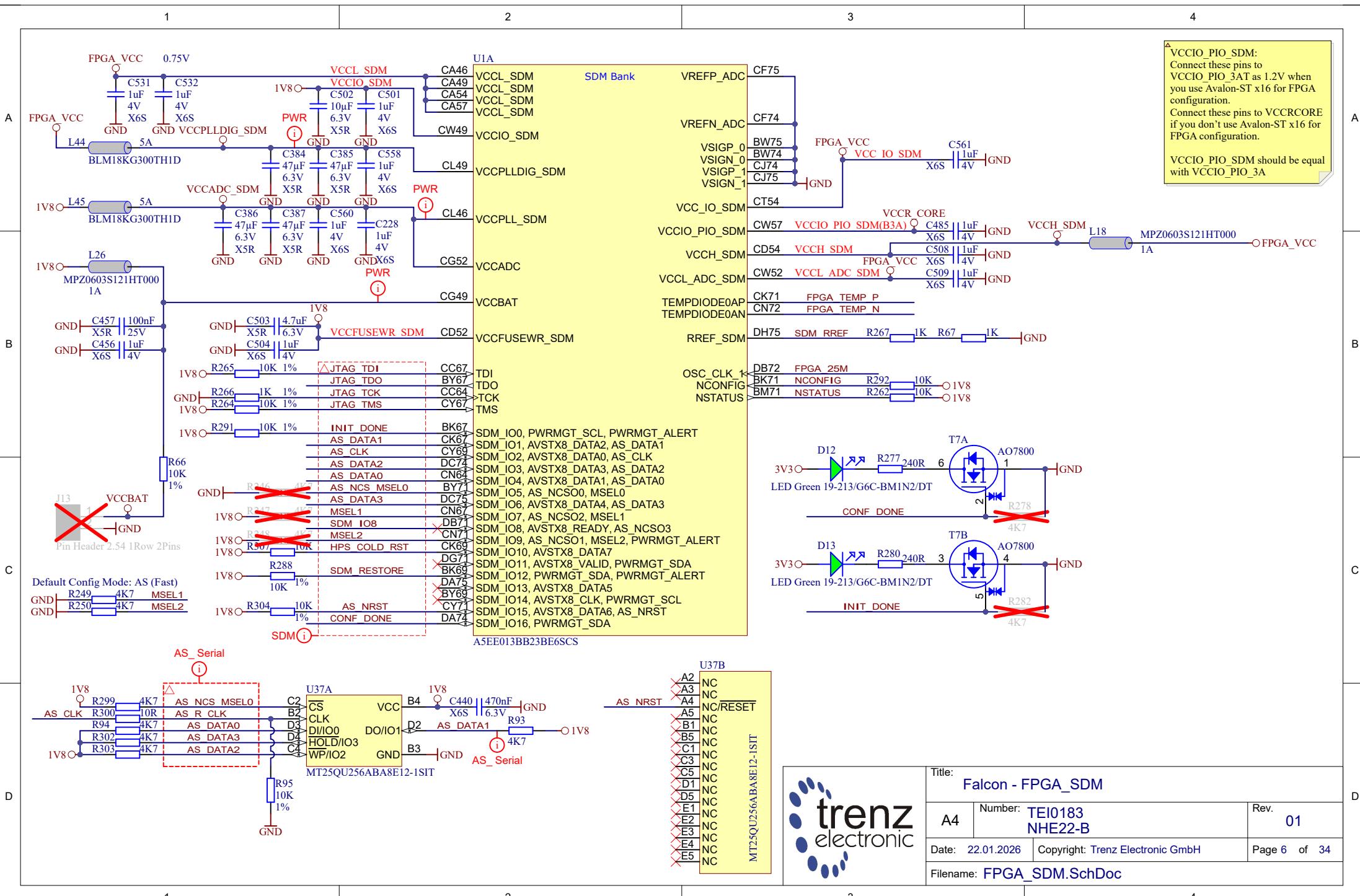
A4 | Number: TEI0183  
NHE22-B

Rev. 01

Date: 04.02.2026 | Copyright: Trenz Electronic GmbH

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Filename: Power\_Diagram.SchDoc

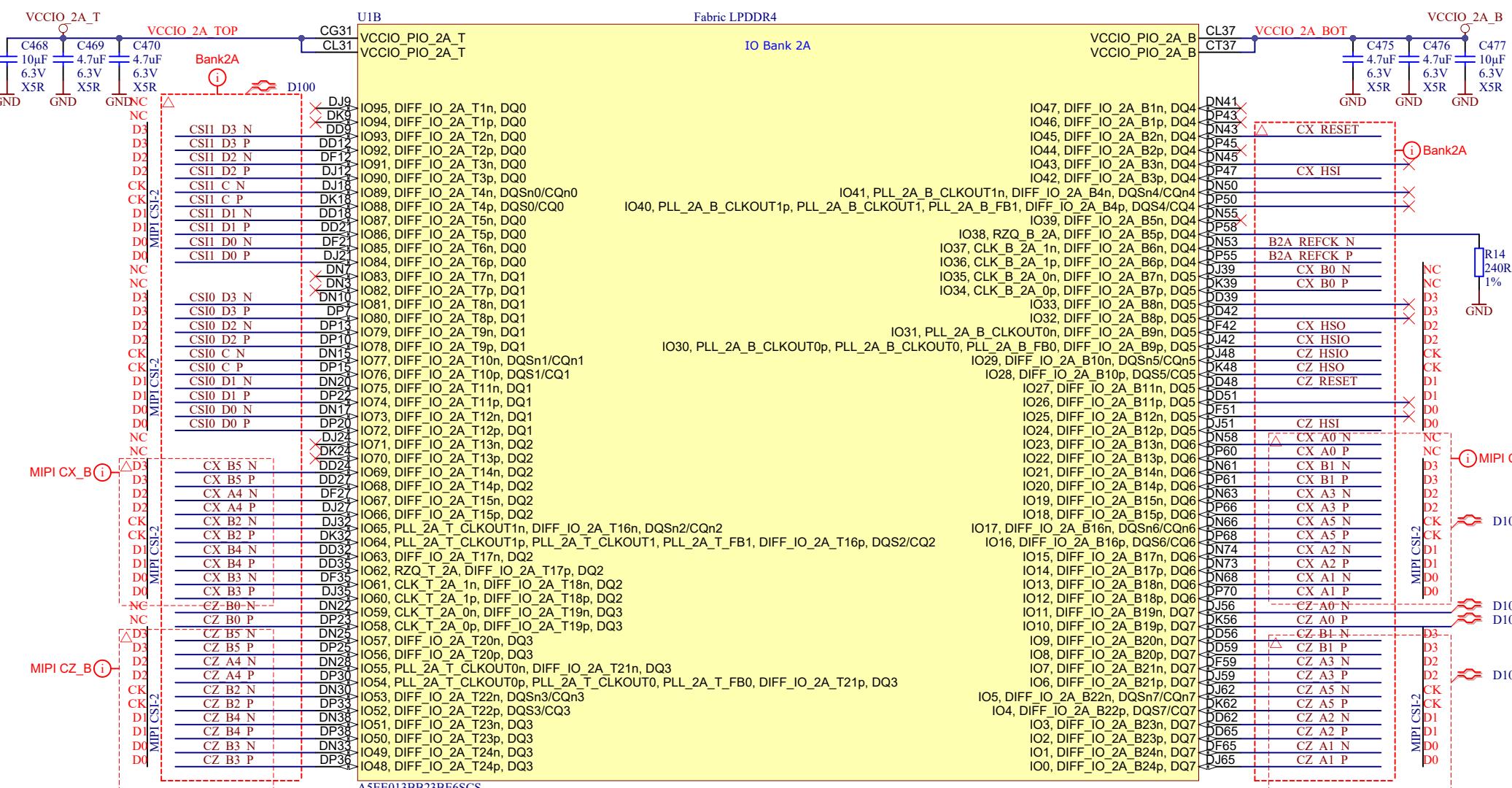


1

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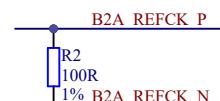
4



JUMPER-2.54

Pin Header 2.54 1Row 3Pins

Position	Value
1-2	1.2V (default)
2-3	1.1V..1.3V



Title: Falcon - FPGA\_B2A

A4 Number: TEI0183 NHE22-B Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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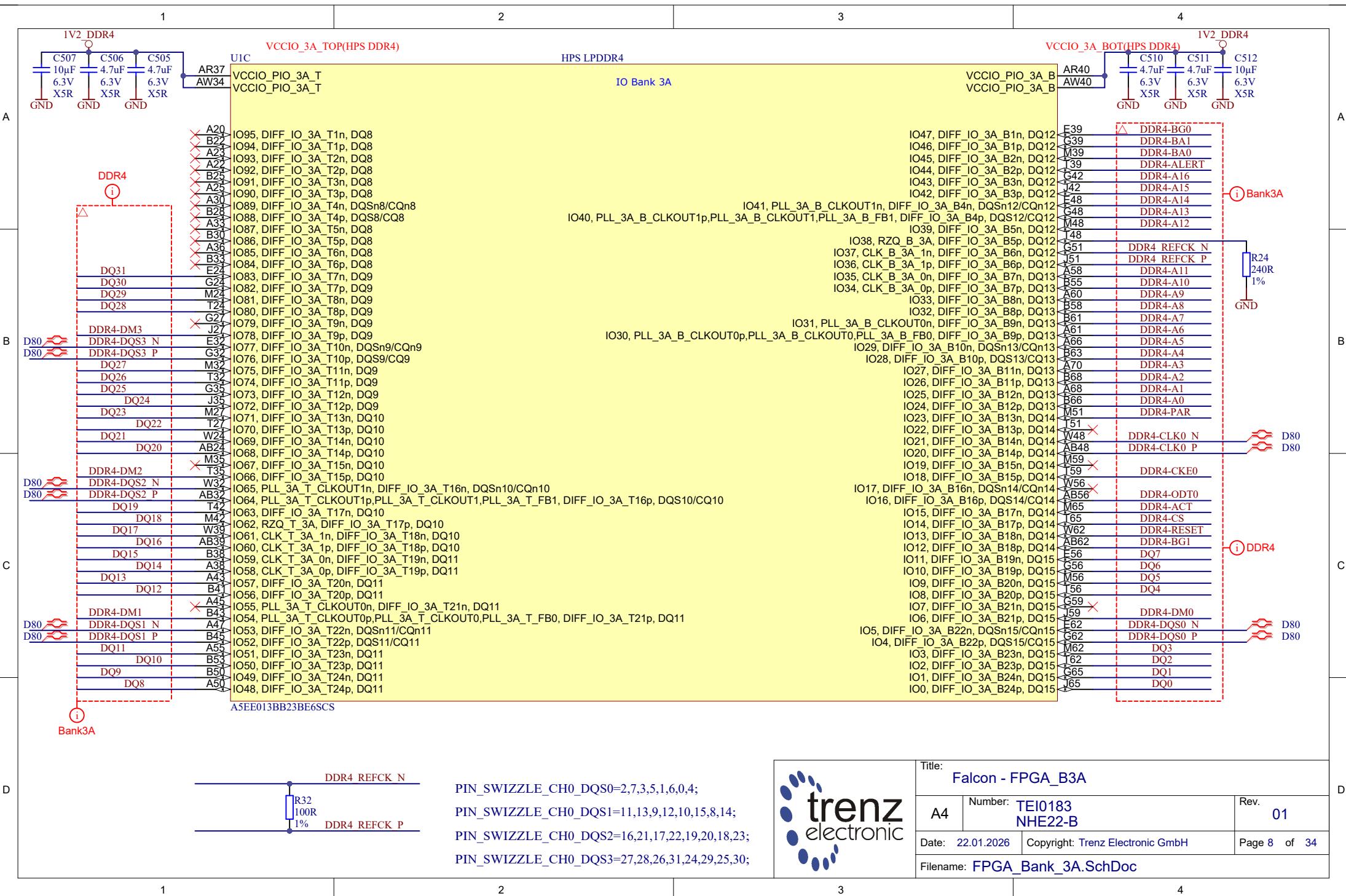
Filename: FPGA\_Bank\_2A.SchDoc

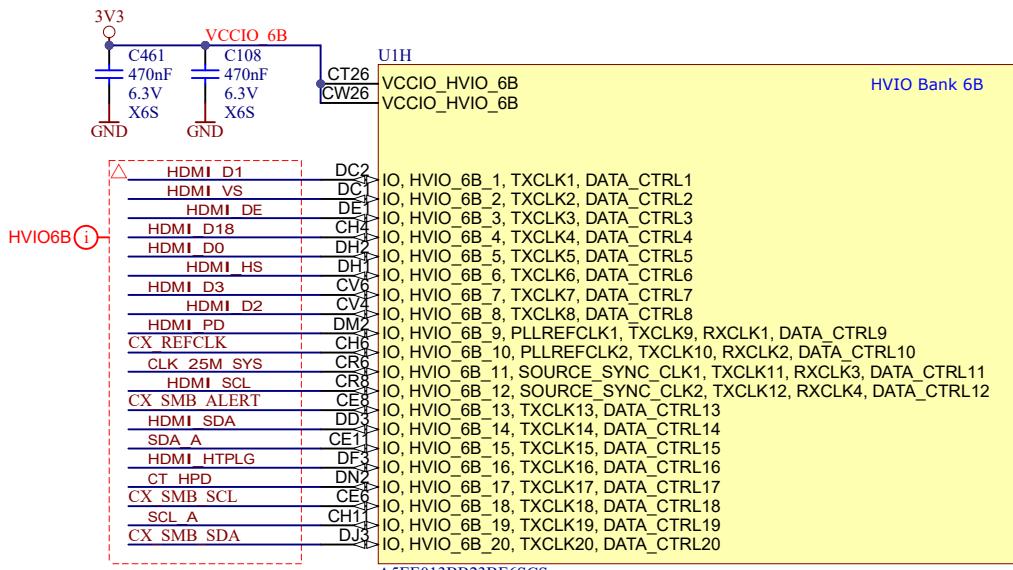
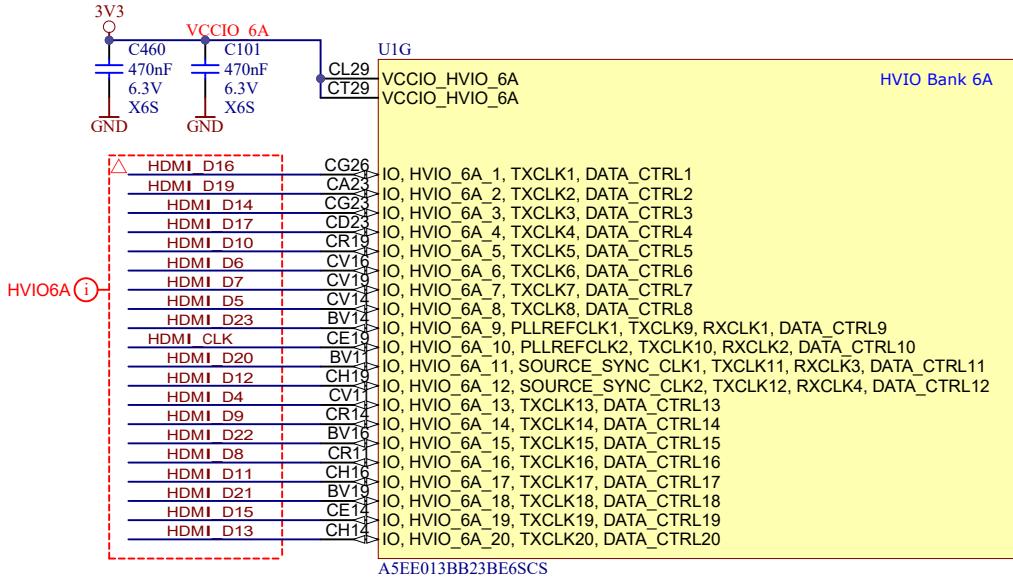
1

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4





Title: Falcon - FPGA\_B6A\_B6B

A4 Number: TEI0183  
NHE22-B

Rev. 01

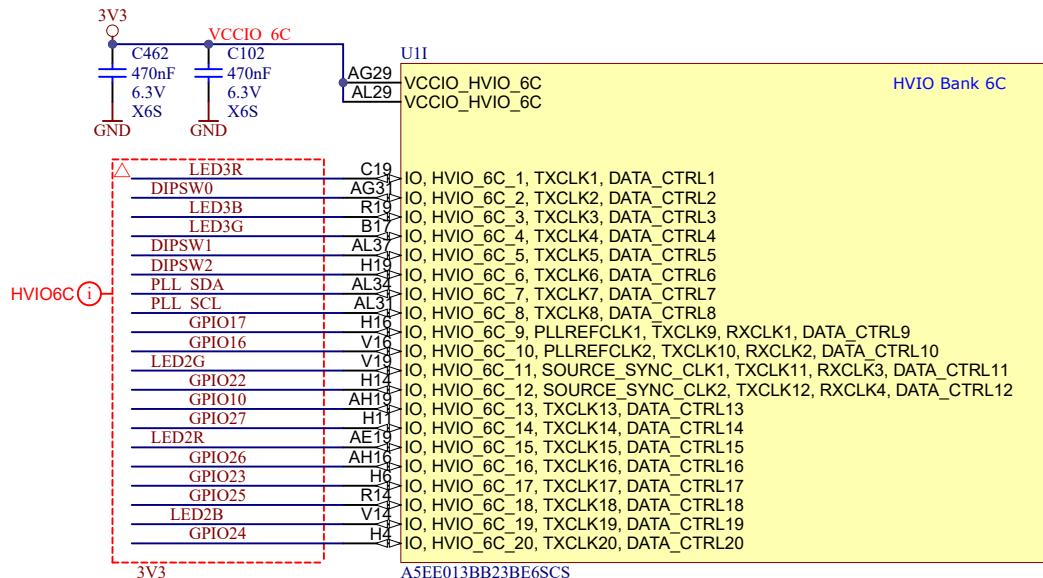
Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: FPGA\_Bank\_HVIO\_6A\_6B.SchDoc

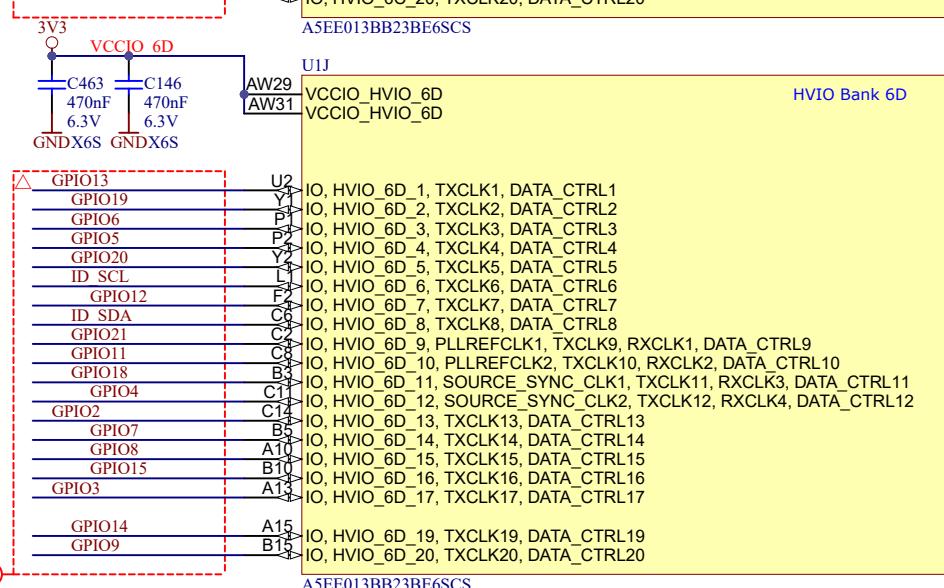
A

A



B

B



C

C

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D



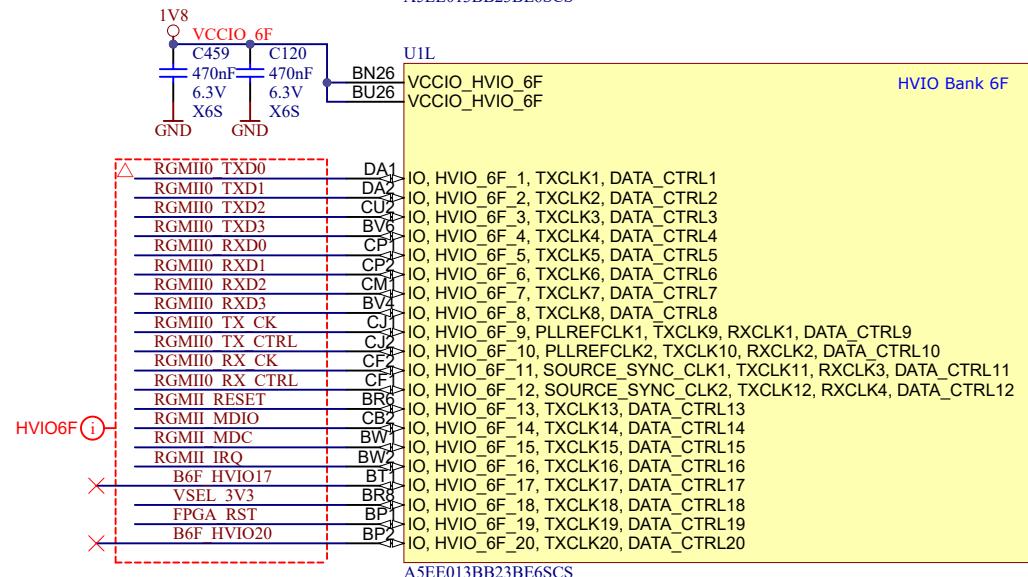
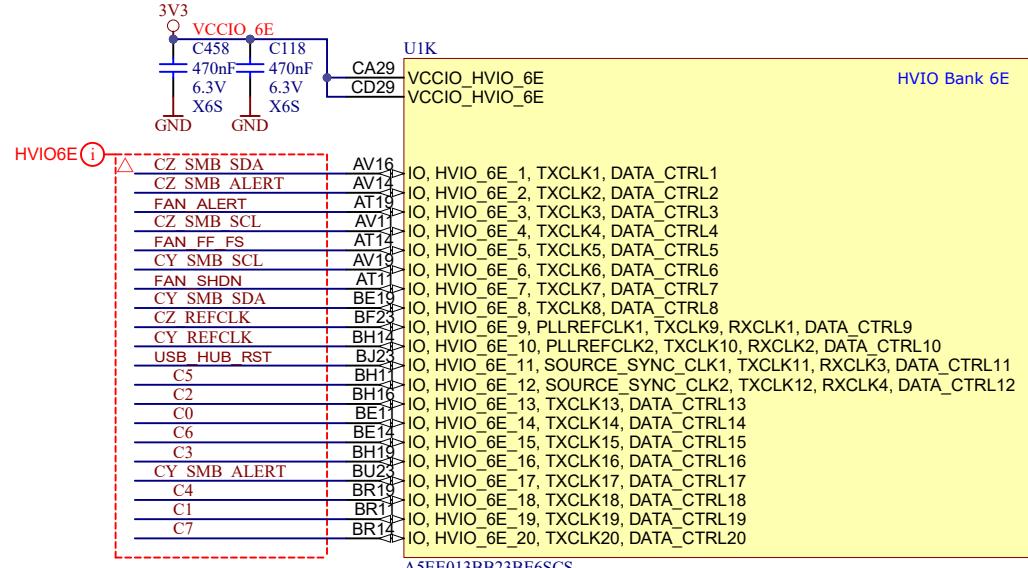
Title: Falcon - FPGA\_B6C\_B6D  
Number: TEI0183 NHE22-B

Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: FPGA\_Bank\_HVIO\_6C\_6D.SchDoc



Title: Falcon - FPGA\_B6E\_B6F

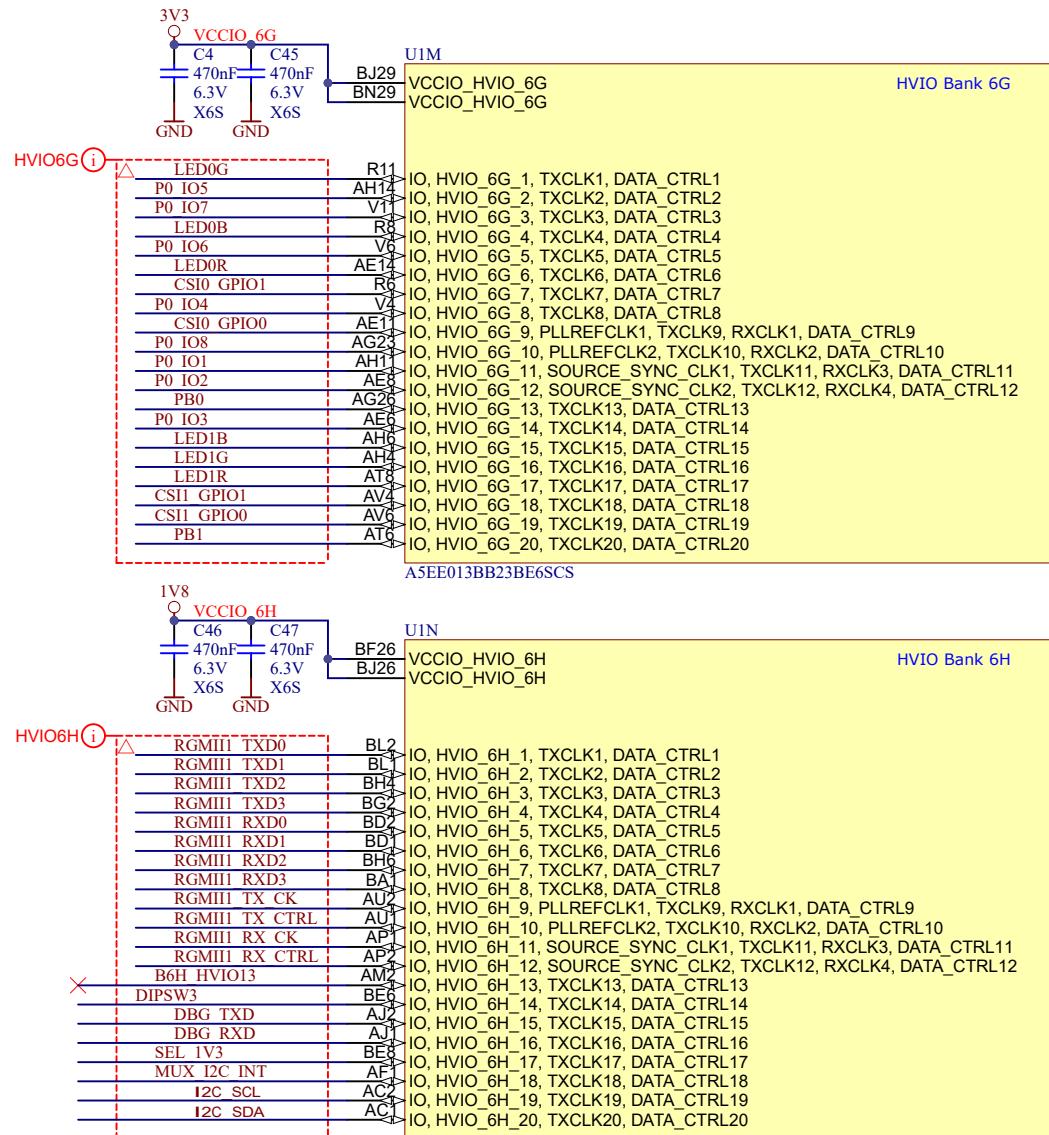
A4 Number: TEI0183 NHE22-B

Rev. 01

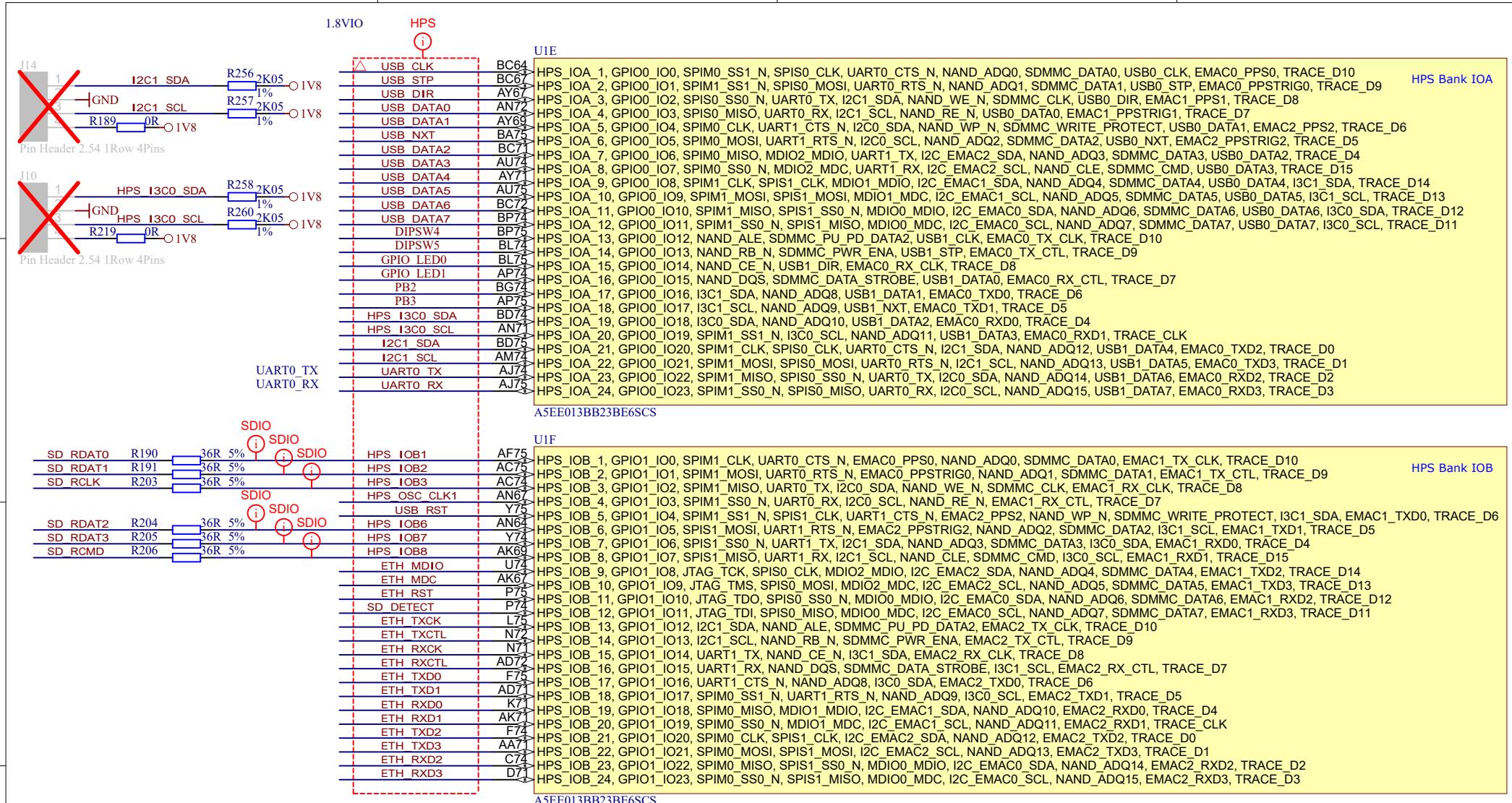
Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: FPGA\_Bank\_HVIO\_6E\_6F.SchDoc



Title: Falcon - FPGA_B6G_B6H		
A4	Number: TEI0183 NHE22-B	Rev. 01
Date: 22.01.2026	Copyright: Trenz Electronic GmbH	Page 12 of 34
Filename: FPGA_Bank_HVIO_6G_6H.SchDoc		



Title: Falcon - FPGA\_HPS

A4 Number: TEI0183 NHE22-B Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: FPGA\_Bank\_HPS.SchDoc

A

A

B

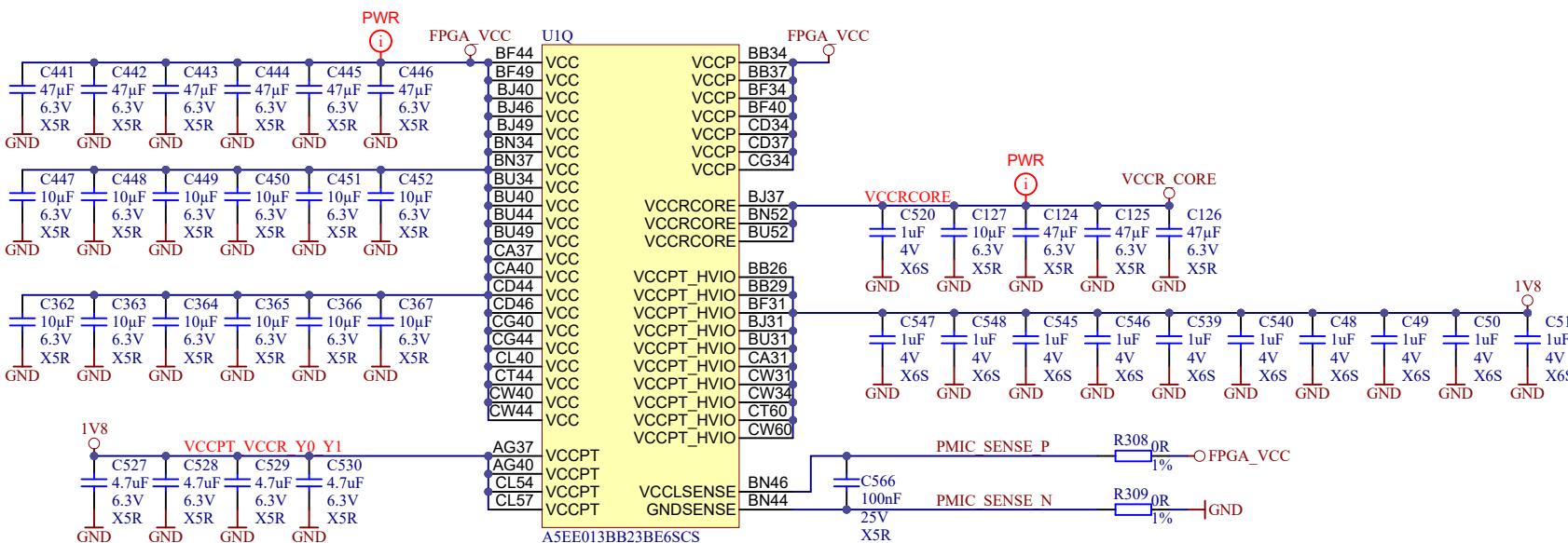
B

C

C

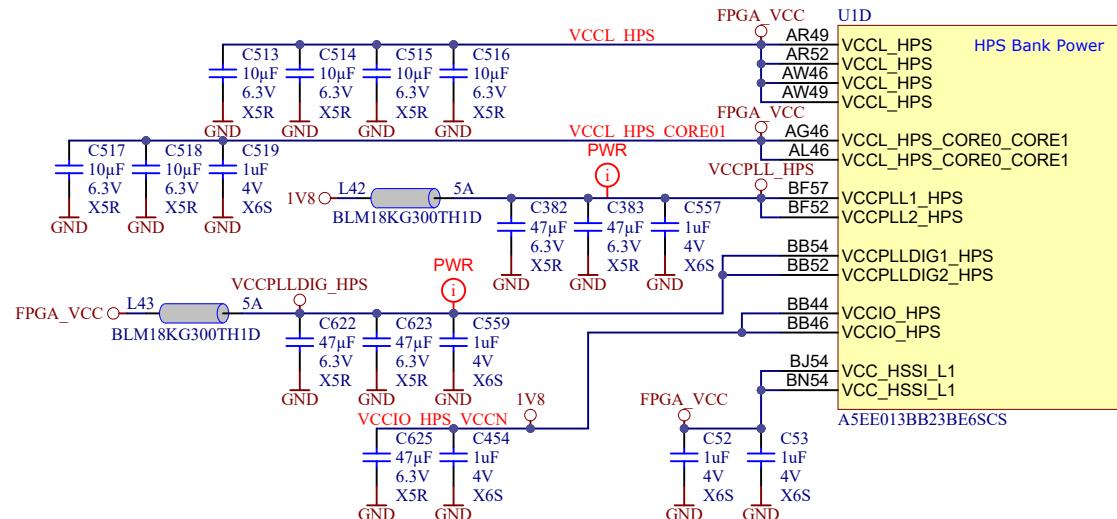
D

D



A

A



B

B

C

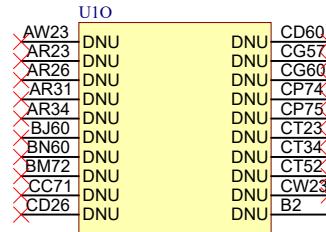
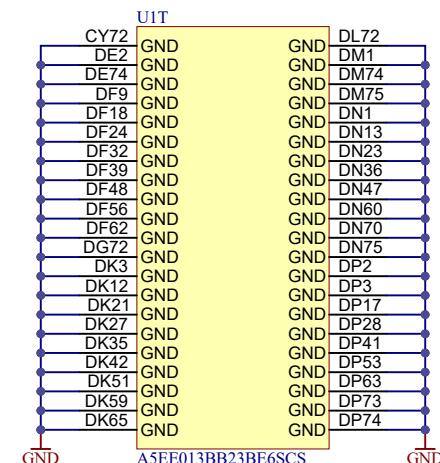
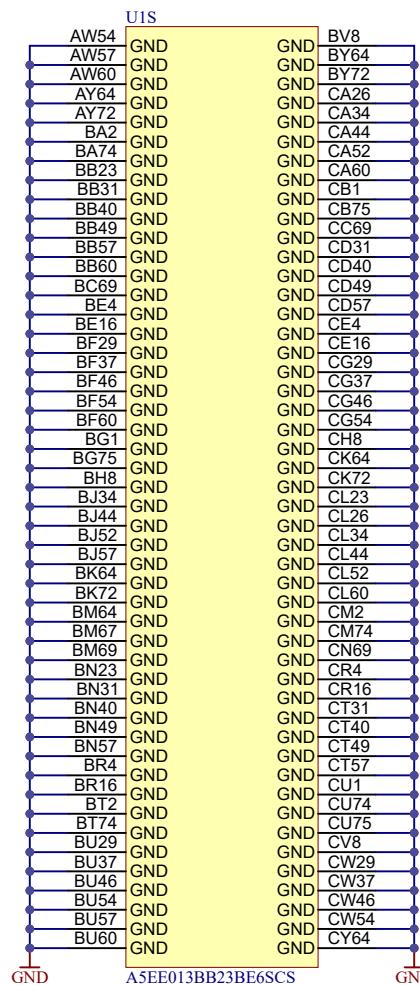
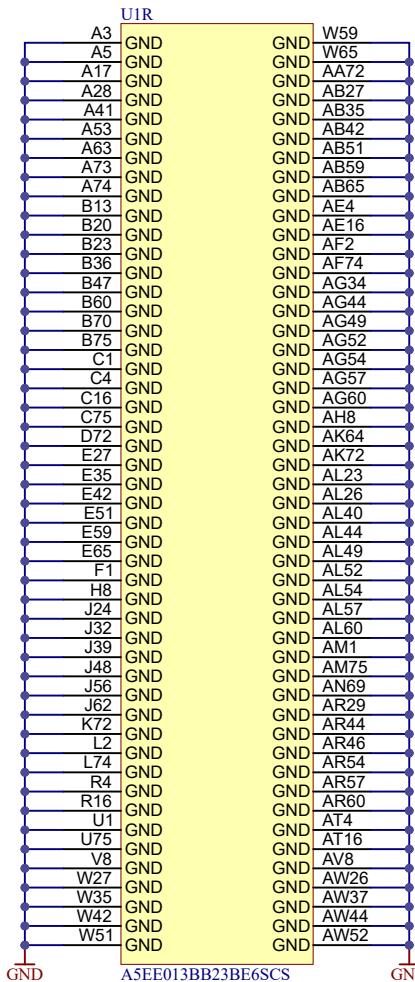
C

D

D



Title: Falcon - FPGA_PWR_2		
A4	Number: TEI0183 NHE22-B	Rev. 01
Date: 22.01.2026	Copyright: Trenz Electronic GmbH	Page 15 of 34
Filename: FPGA_PWR2.SchDoc		



Title: Falcon - FPGA\_GND

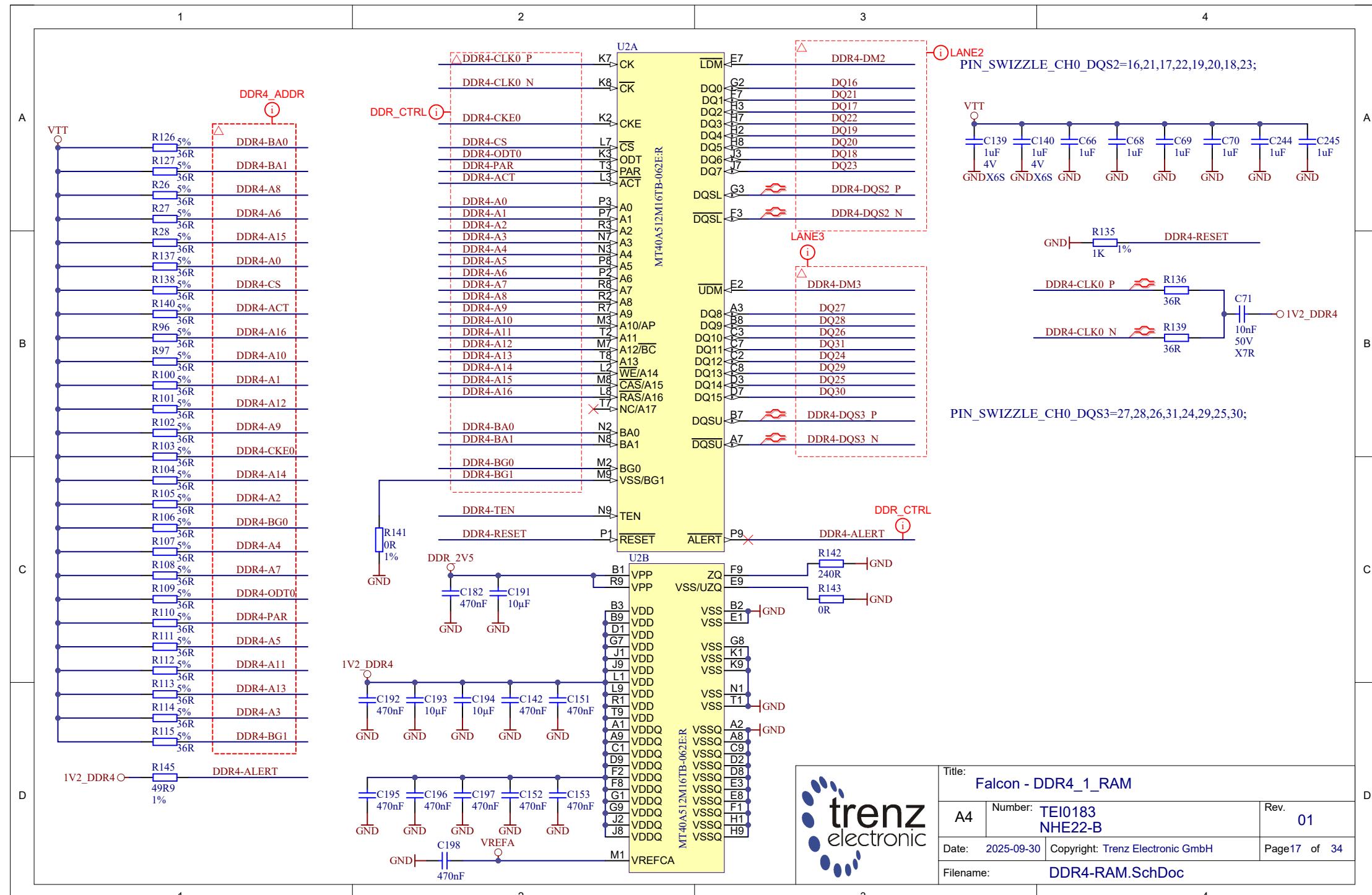
A4 Number: TEI0183  
NHE22-B

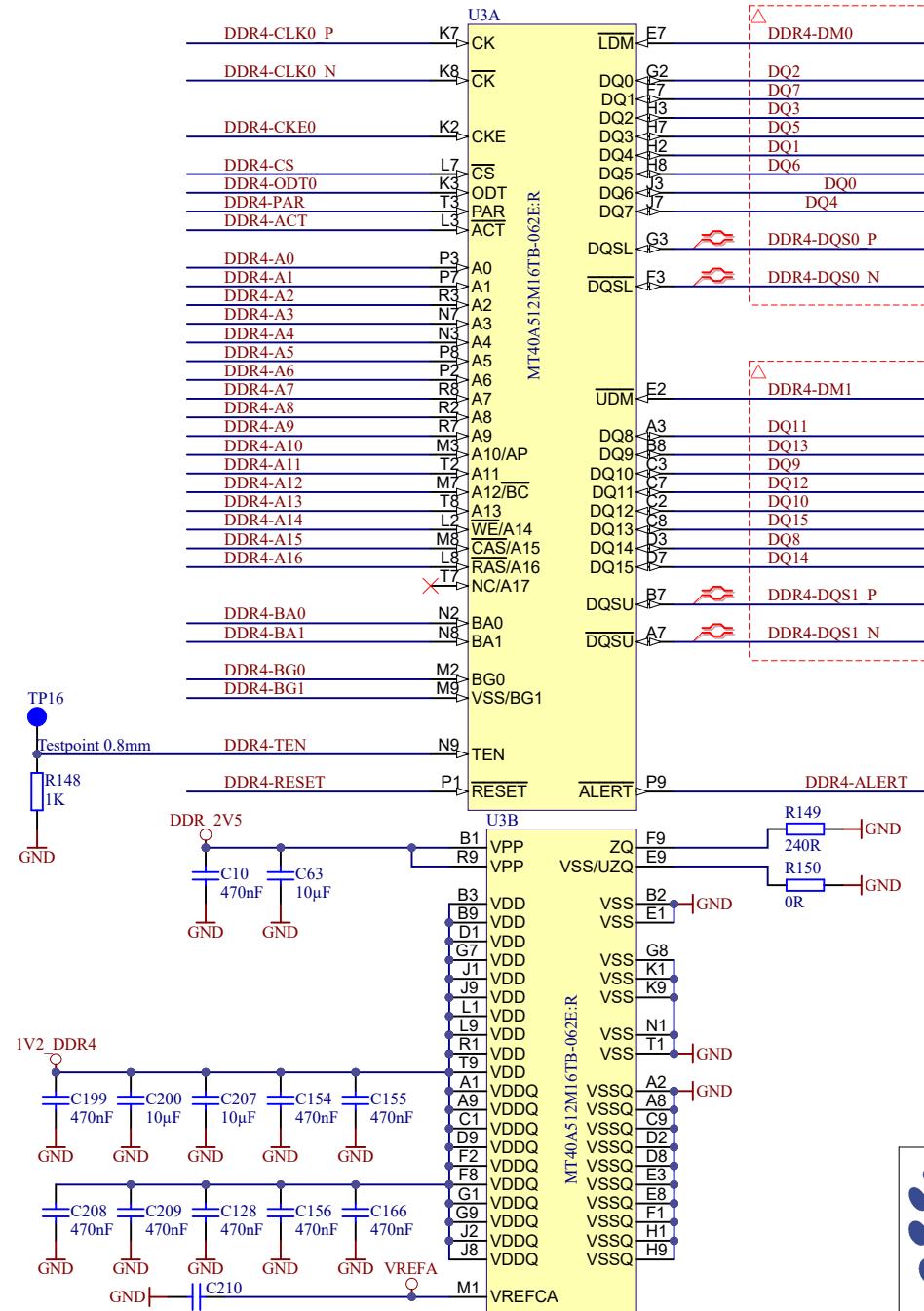
Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: FPGA\_GND.SchDoc





PIN\_SWIZZLE CH0\_DQS0=2,7,3,5,1,6,0,4;

PIN SWIZZLE CH0 DQS1=11,13,9,12,10,15,8,14;



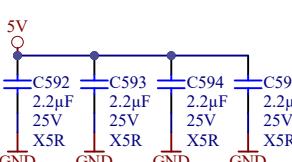
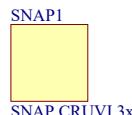
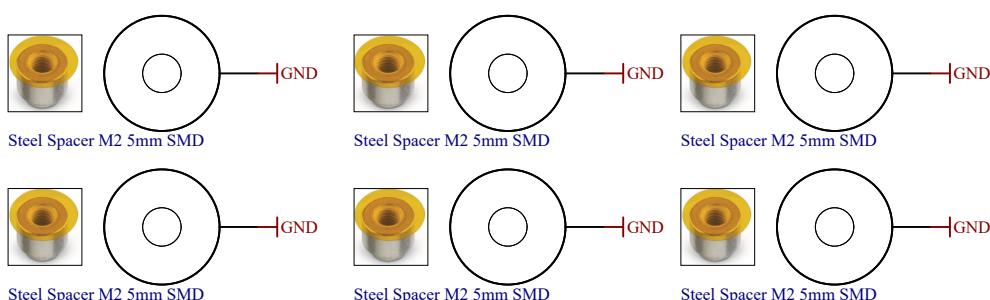
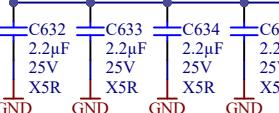
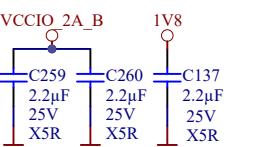
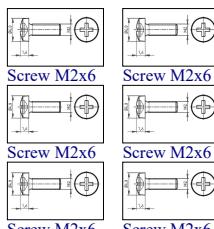
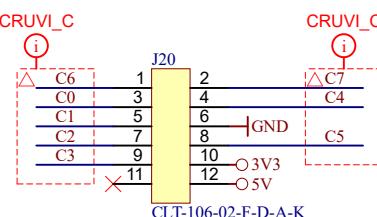
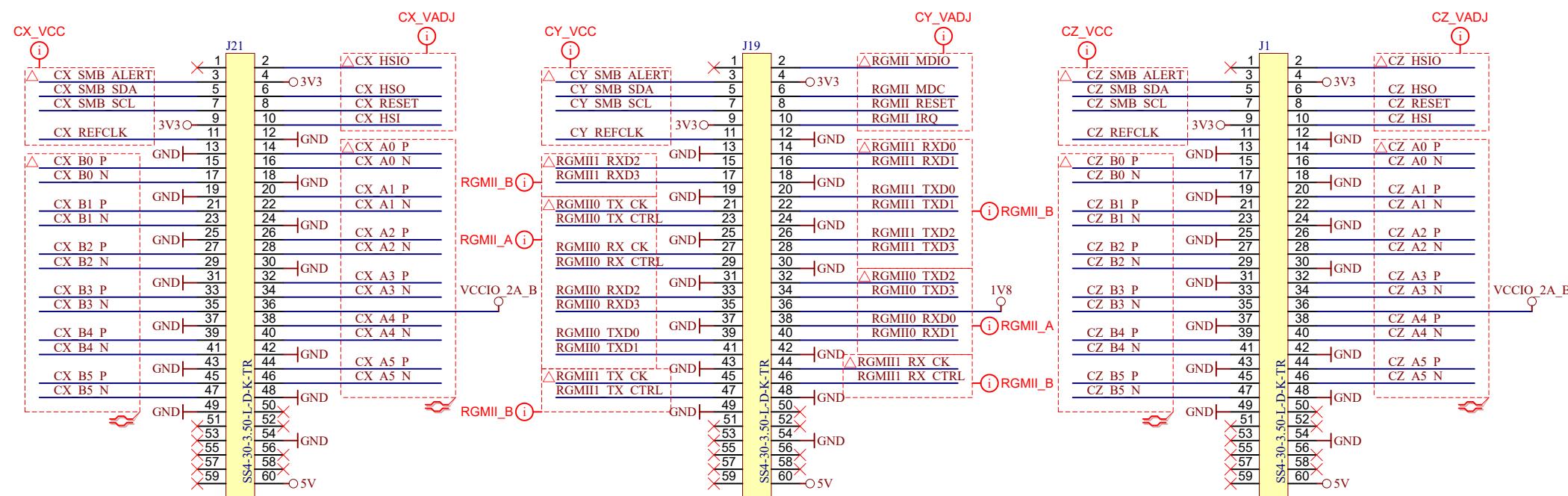
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A4	Number: <b>TEI0183 NHE22-B</b>
Date: 2025-09-30	Copyright: Trenz Electronic GmbH
Filename:	<b>DDR4-RAM_2.SchDoc</b>

1

2

3

4



Title: Falcon - CRUVI

A4 Number: TEI0183 NHE22-B

Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: CRUVI.SchDoc

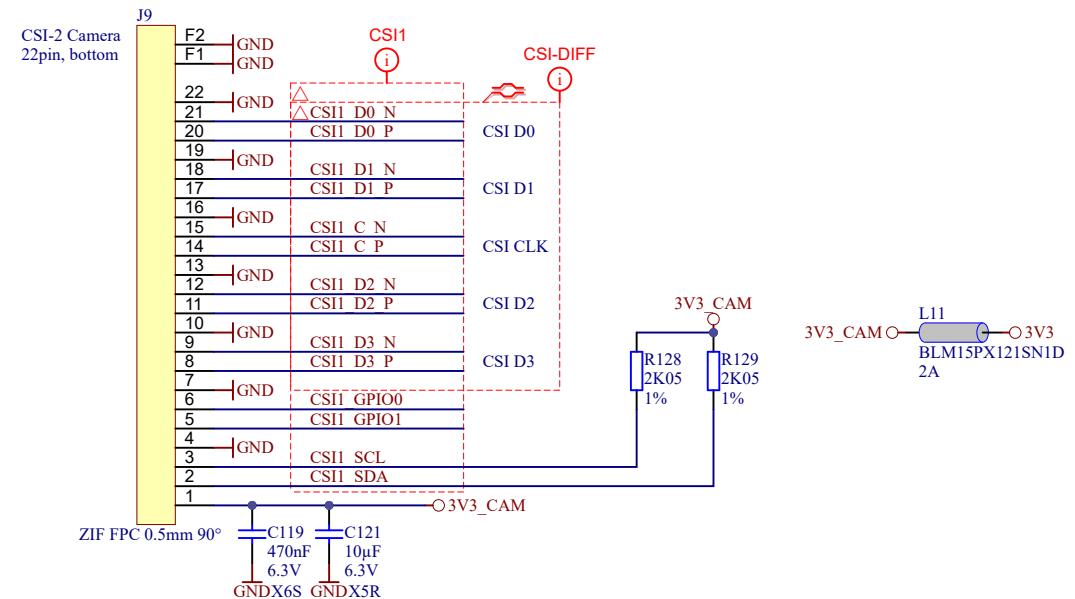
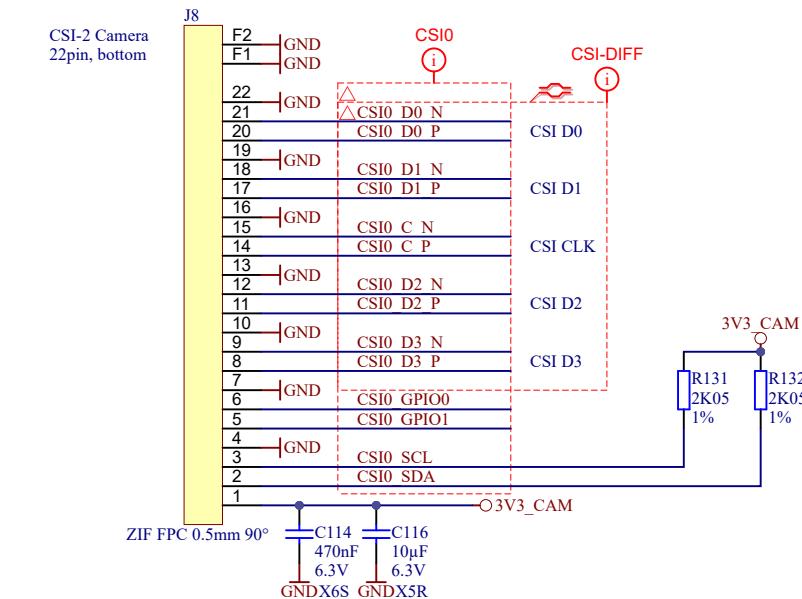
1

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A



B



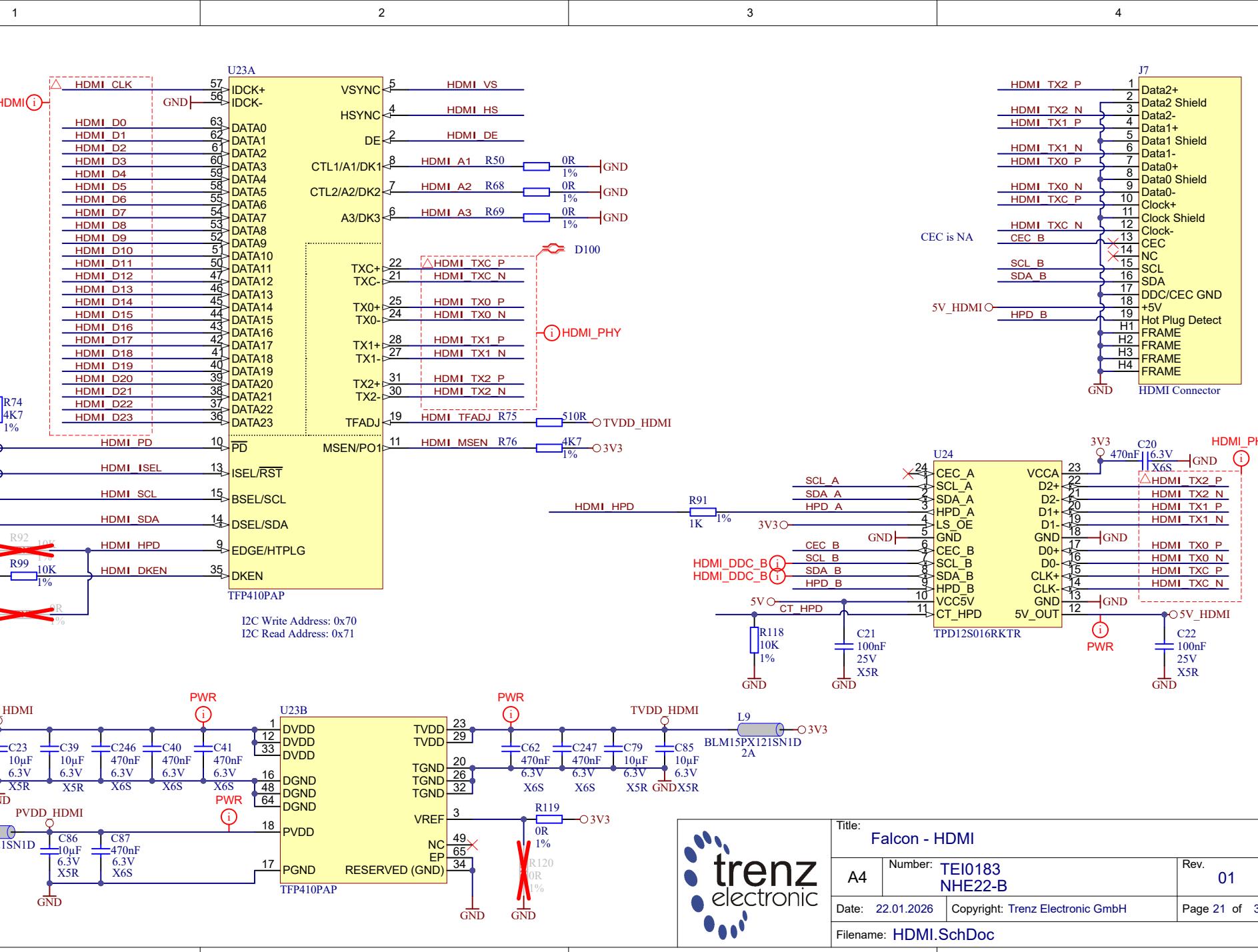
Title: Falcon - MIPI CSI/DSI

A4 Number: TEI0183 NHE22-B Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: CAM\_0\_1.SchDoc

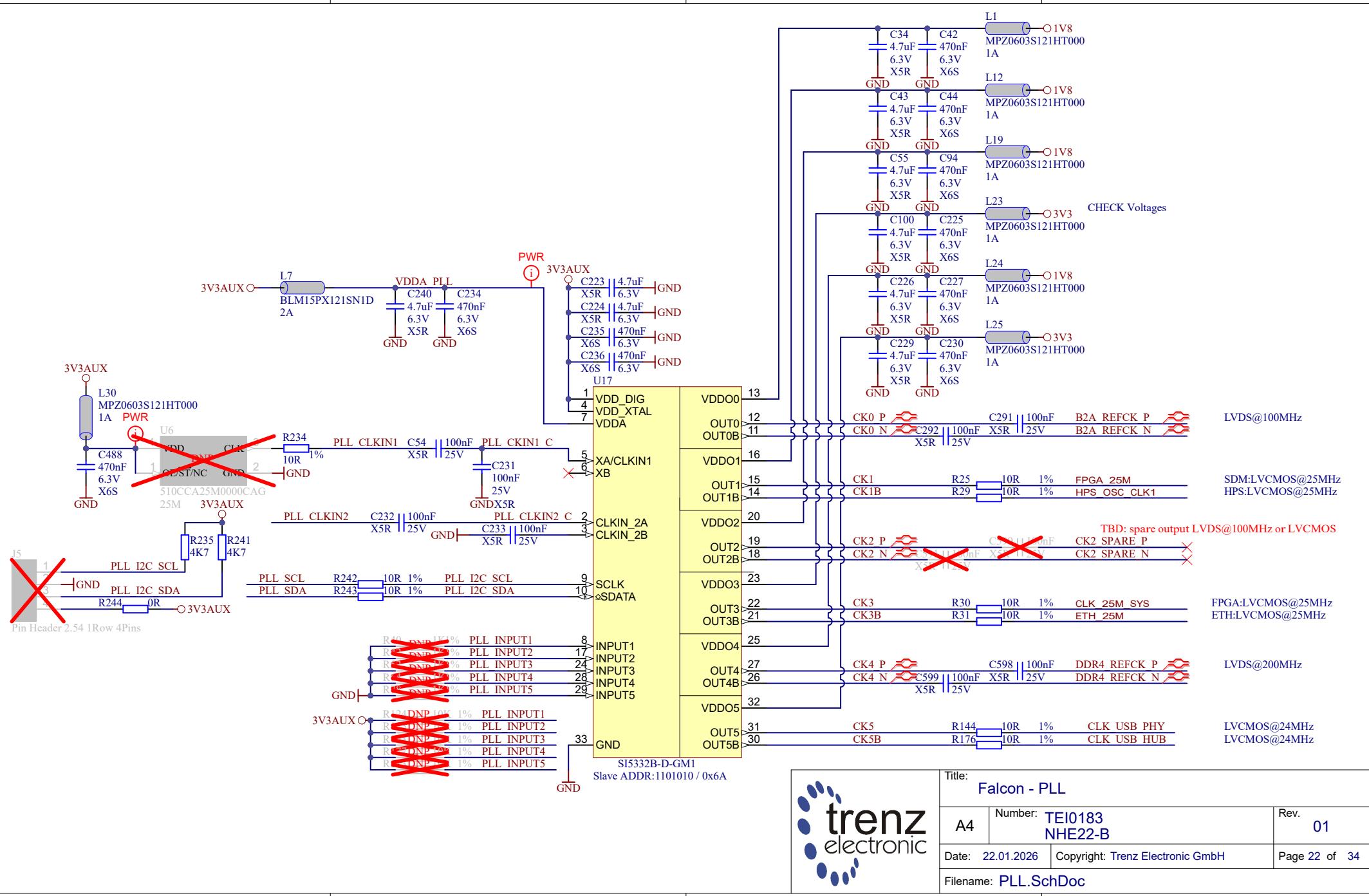


1

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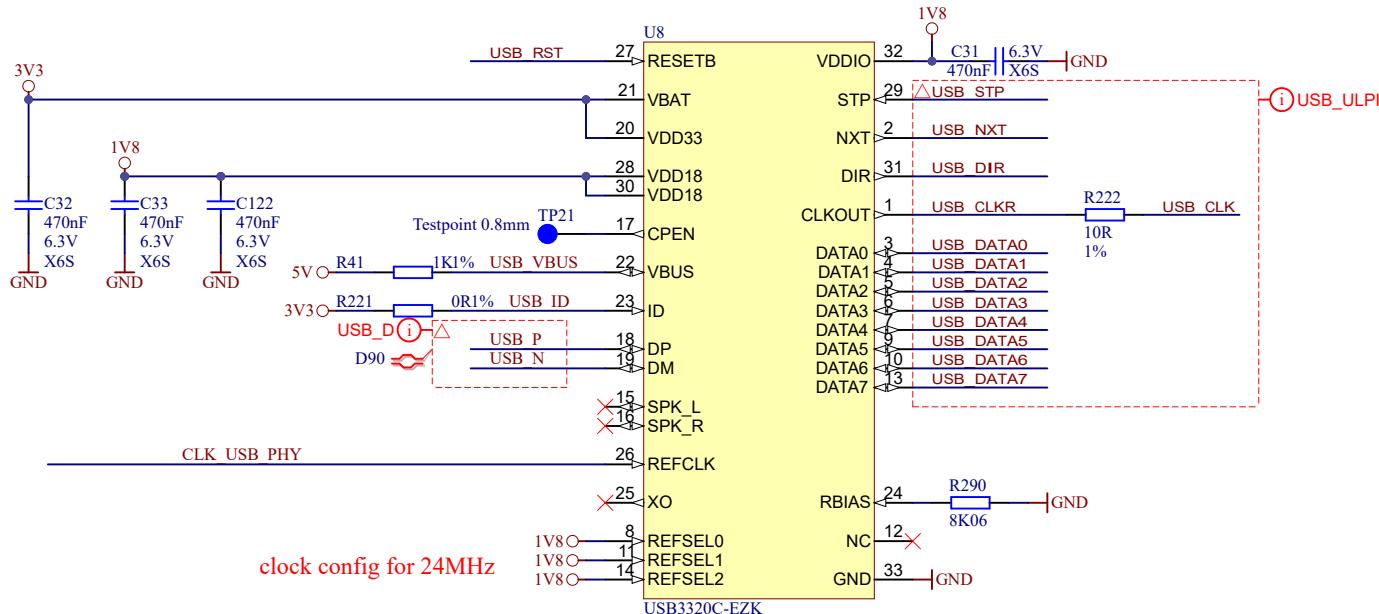
4



A

A

VBAT, VDD33, and VDD18 can be applied in any order.  
 The VDD18 supply must be turned on and stable before  
 the VDDIO supply is applied. This does not apply in  
 cases where the VDD18 and VDDIO are tied together.



B

B

clock config for 24MHz

C

C

D

D



Title: Falcon - USB2.0 PHY		
A4	Number: TEI0183 NHE22-B	Rev. 01
Date: 22.01.2026	Copyright: Trenz Electronic GmbH	Page 23 of 34
Filename: USB-PHY.SchDoc		

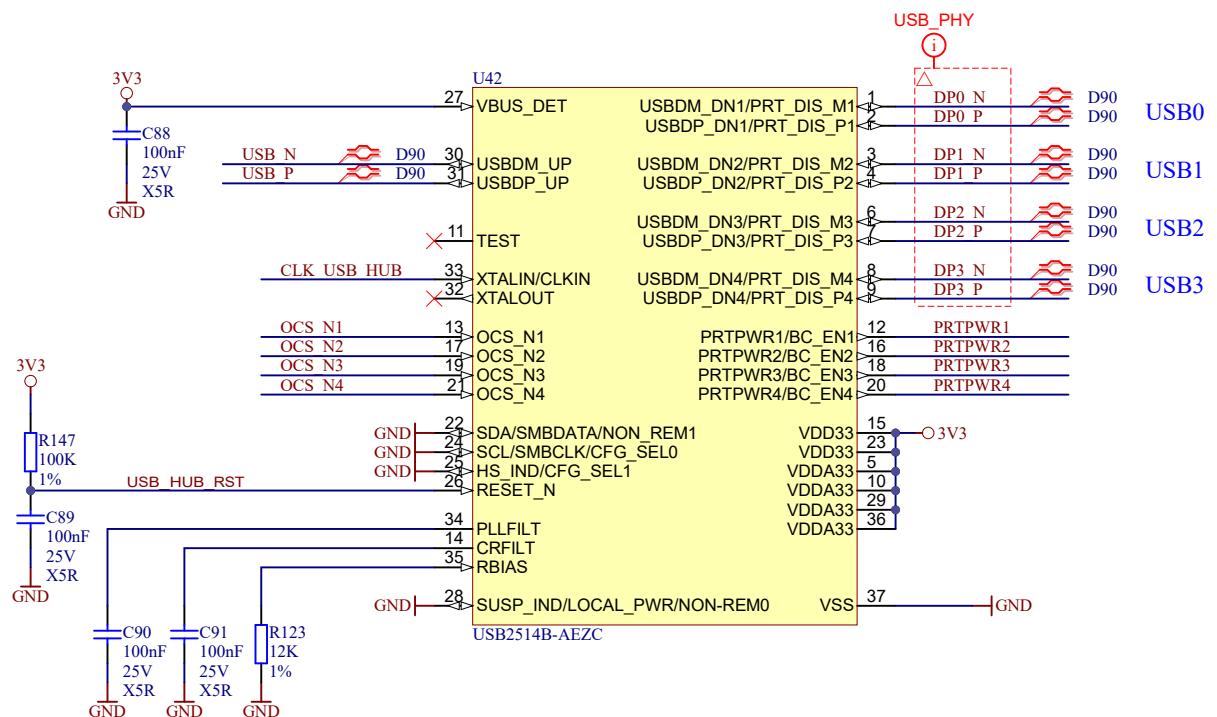
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2

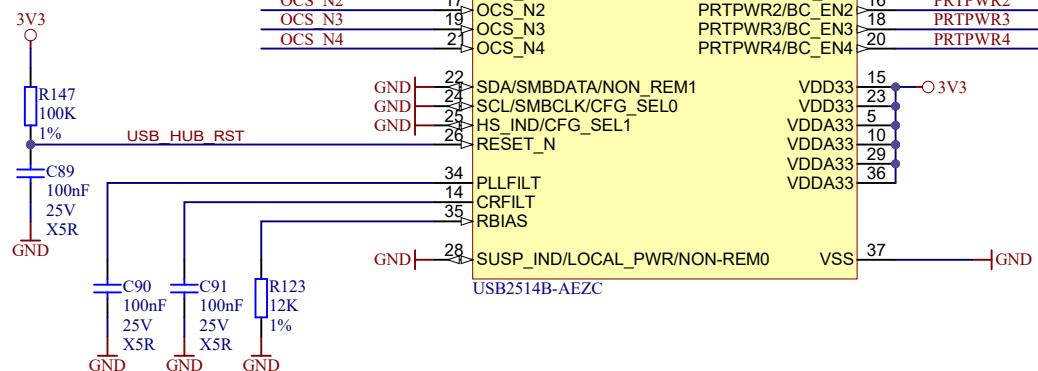
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4

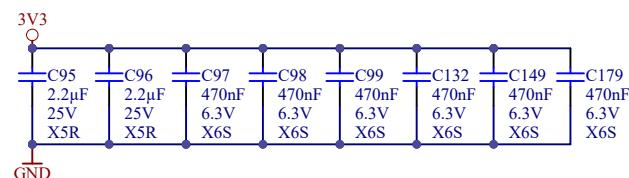
A



B



C



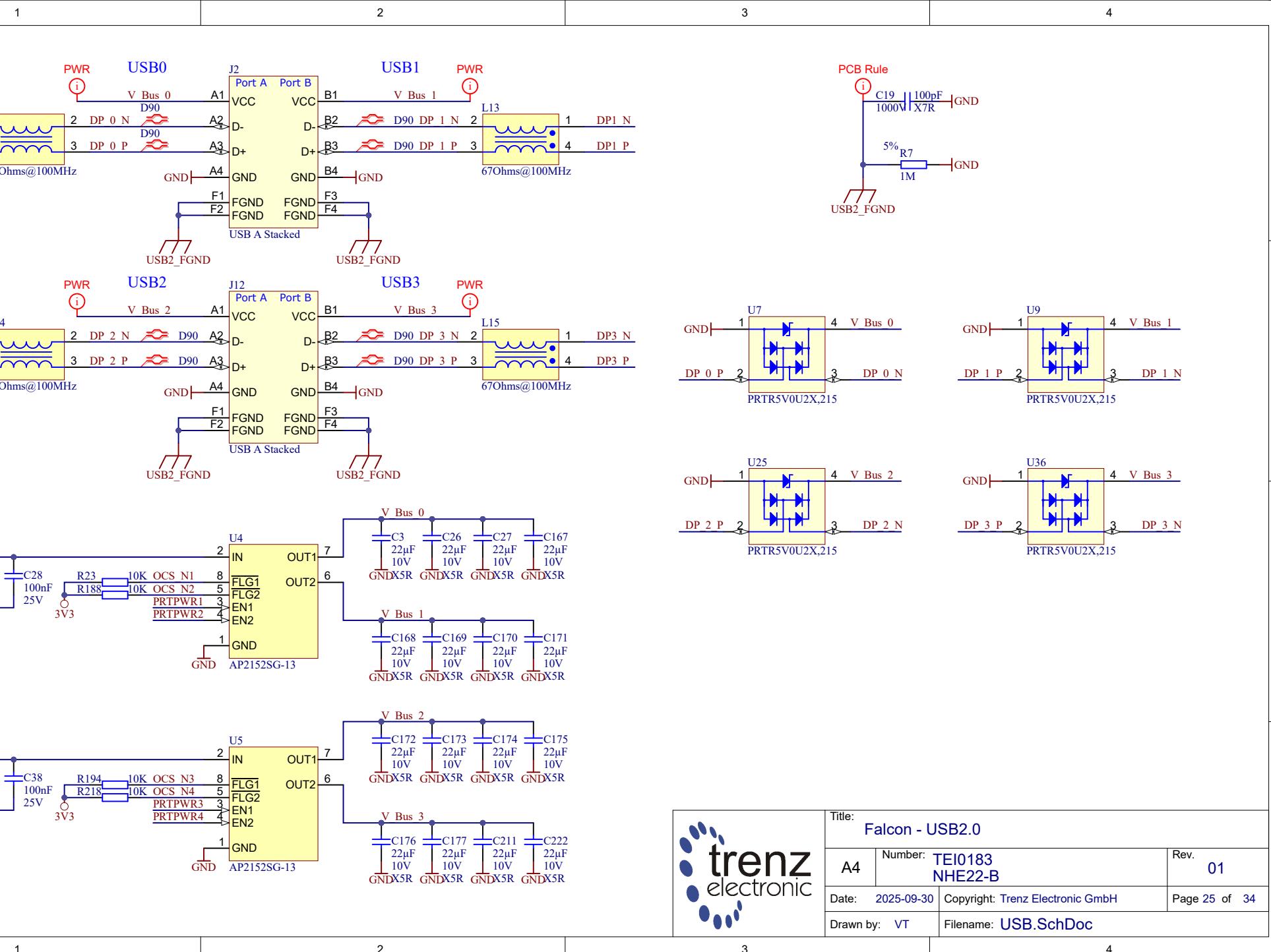
Title: Falcon - USB2.0 HUB		
A4	Number: TEI0183 NHE22-B	Rev. 01
Date: 2025-09-30	Copyright: Trenz Electronic GmbH	Page 24 of 34
Drawn by: VT	Filename: USB-HUB.SchDoc	

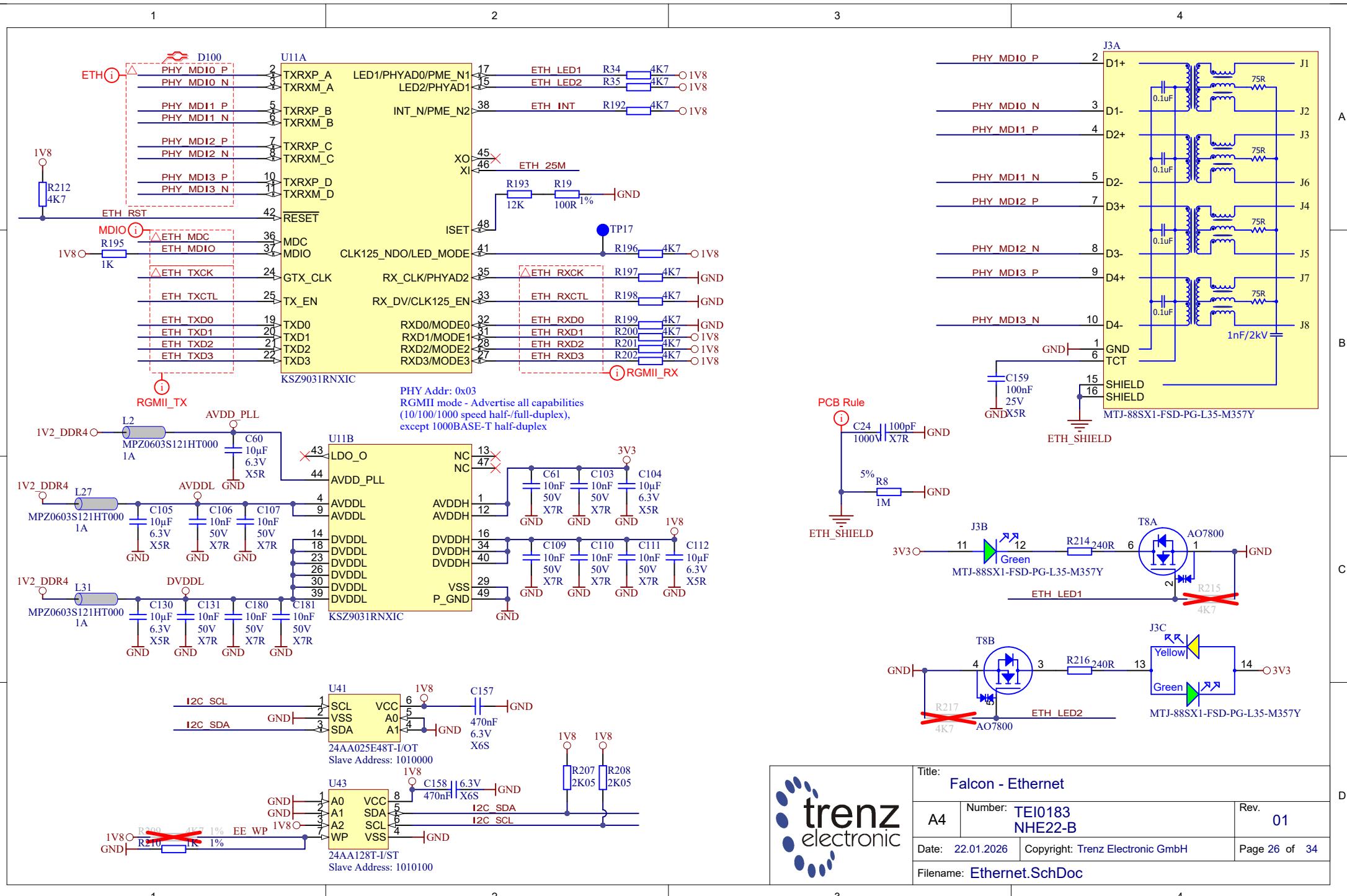
1

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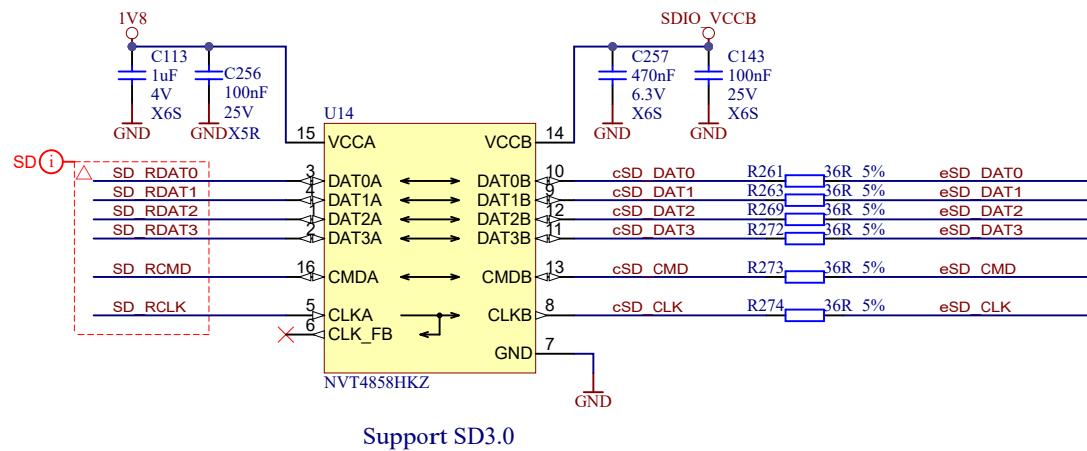
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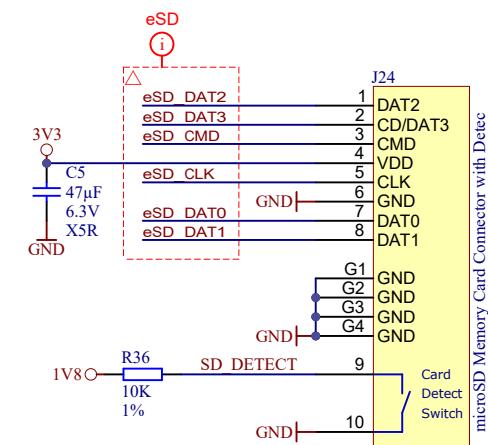
A

A



B

B

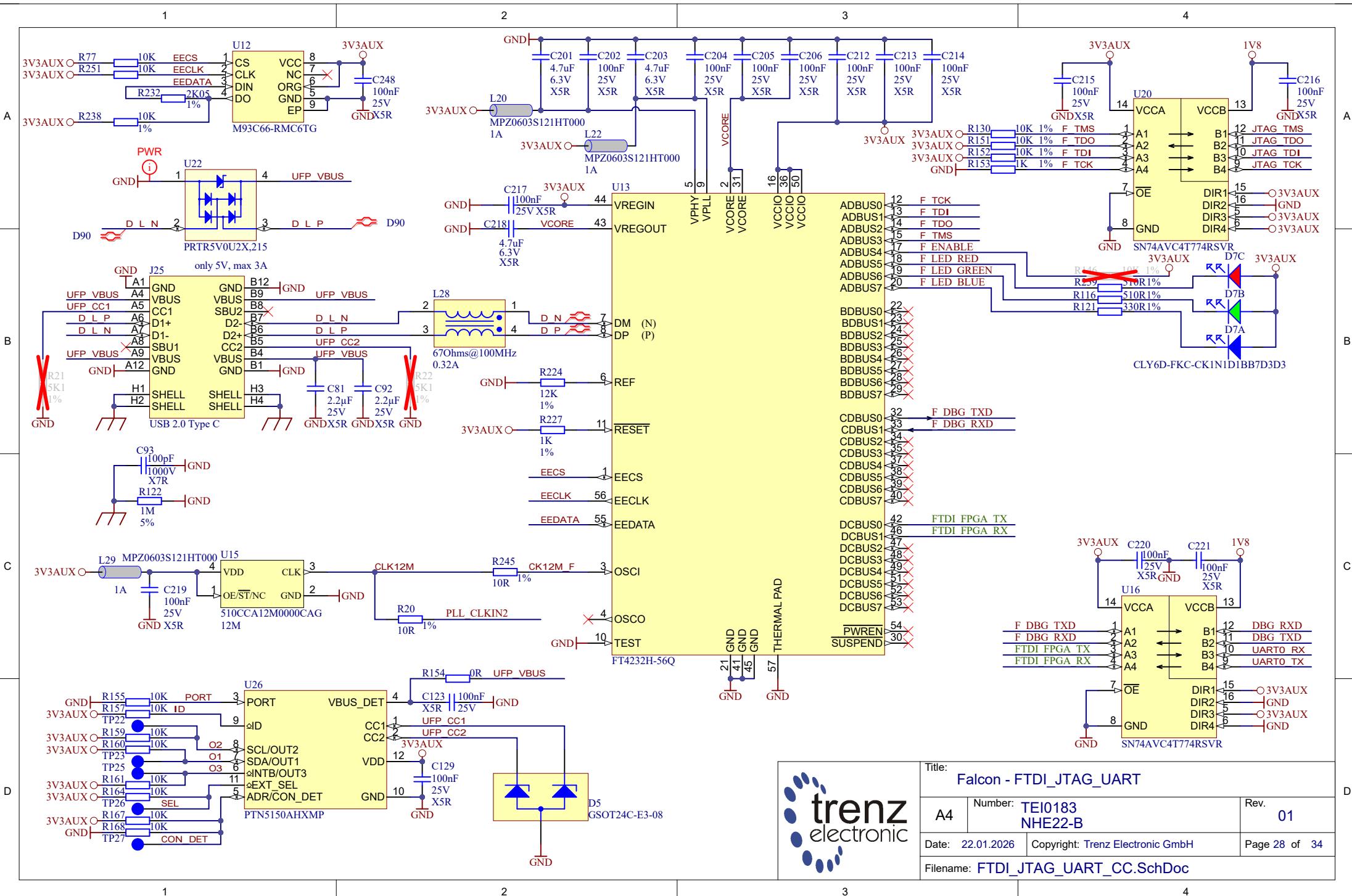


C

C



Title: Falcon - Micro SD Card		
A4	Number: TEI0183 NHE22-B	Rev. 01
Date: 22.01.2026	Copyright: Trenz Electronic GmbH	Page 27 of 34
Filename: SD.schdoc		



1

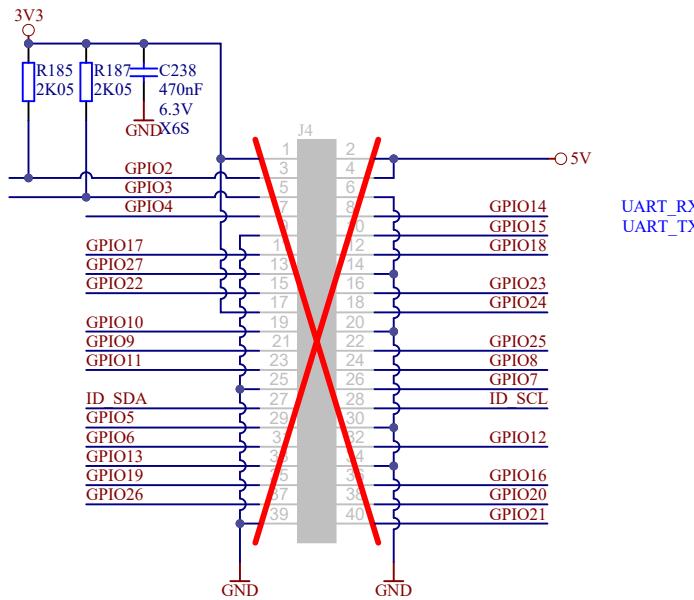
2

3

4

A

PI-HAT

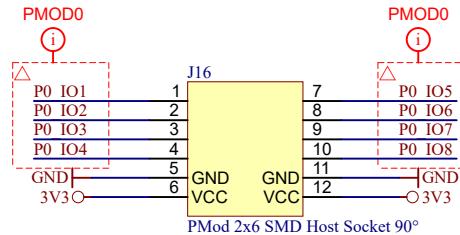


B

UART\_RX  
UART\_TX

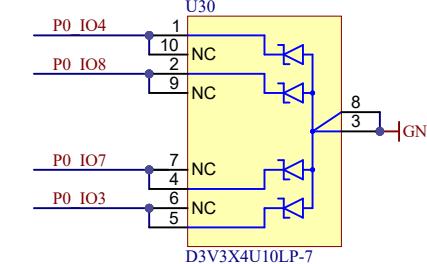
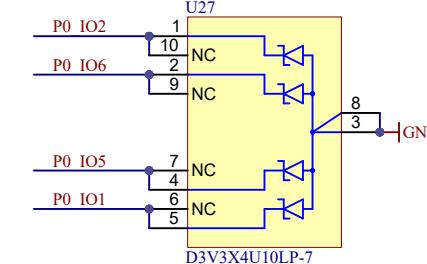
A

PMOD



B

B



C

Pin Header 2.54 2Row 40Pins



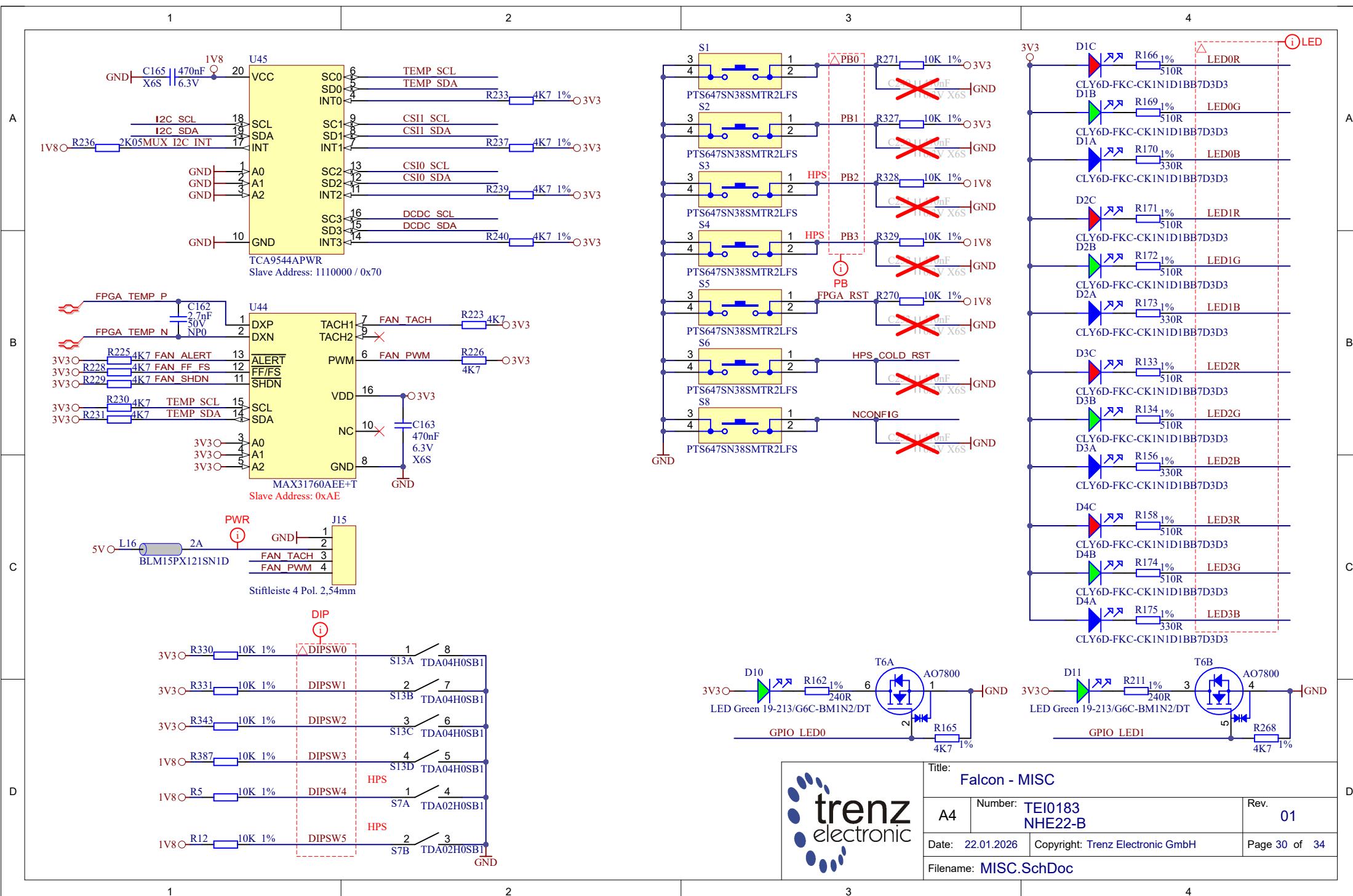
Title: Falcon - Pi HAT		Rev. 01
A4	Number: TEI0183 NHE22-B	
Date: 2025-09-30	Copyright: Trenz Electronic GmbH	Page 29 of 34
Filename: Pi-HAT_PMOD-.SchDoc		

1

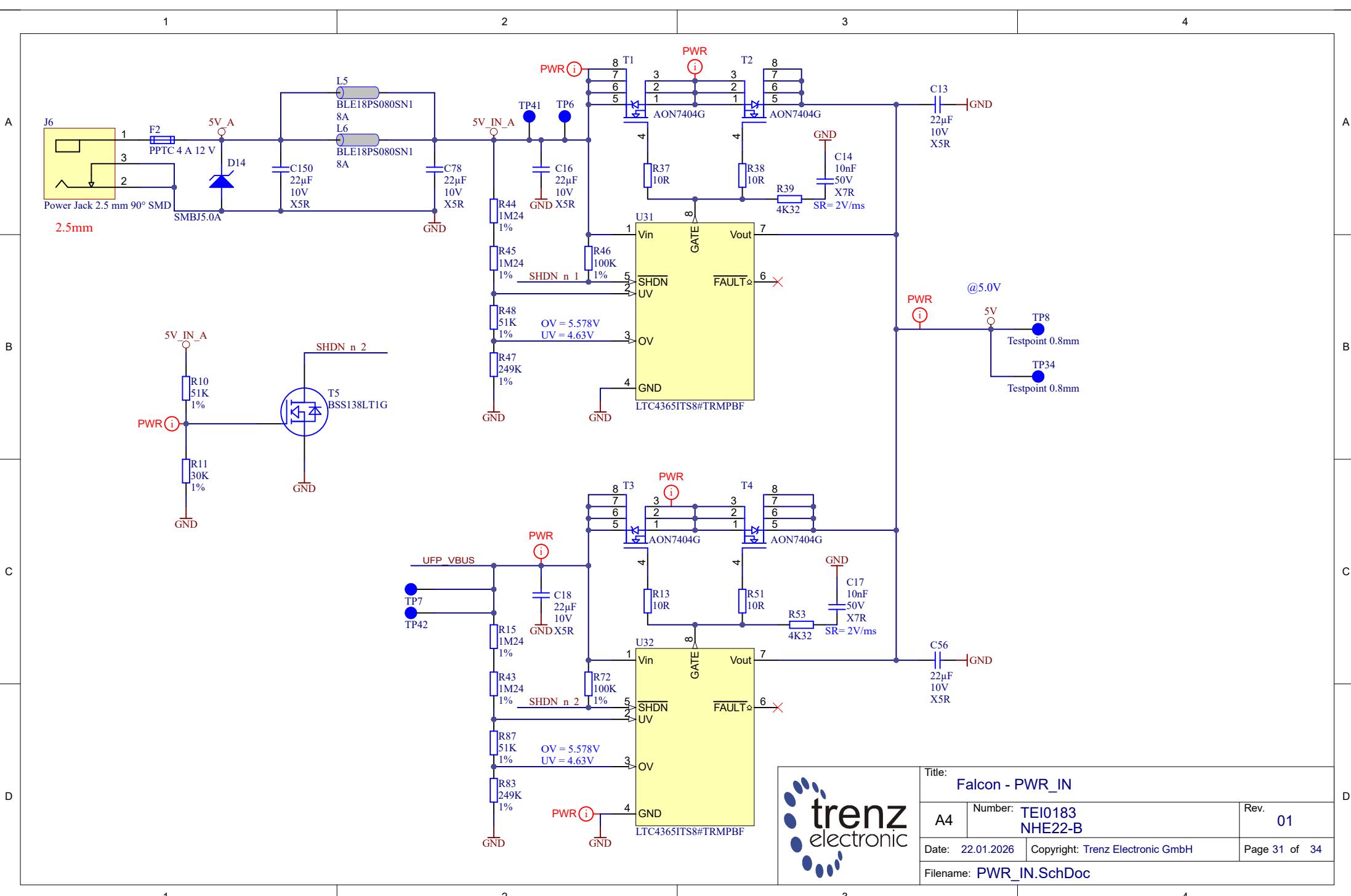
2

3

4



1 2 3 4



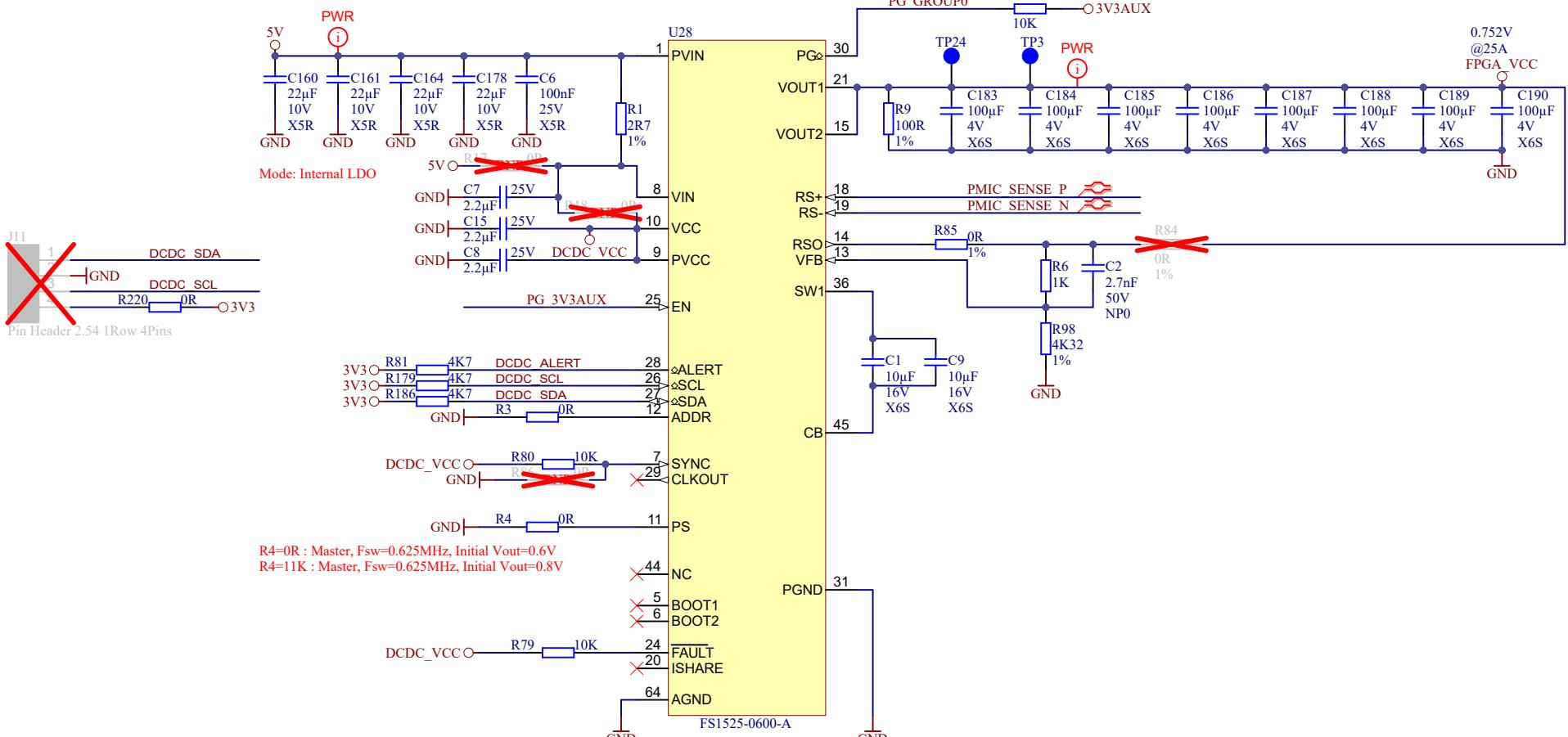
Title: Falcon - PWR\_IN

A4 Number: TEI0183 NHE22-B Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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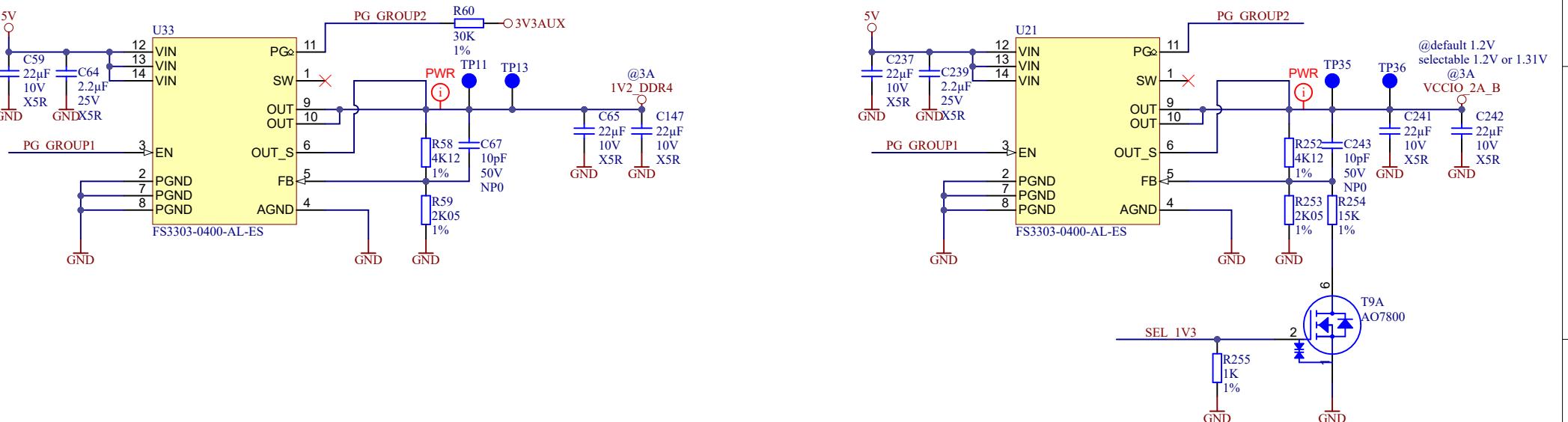
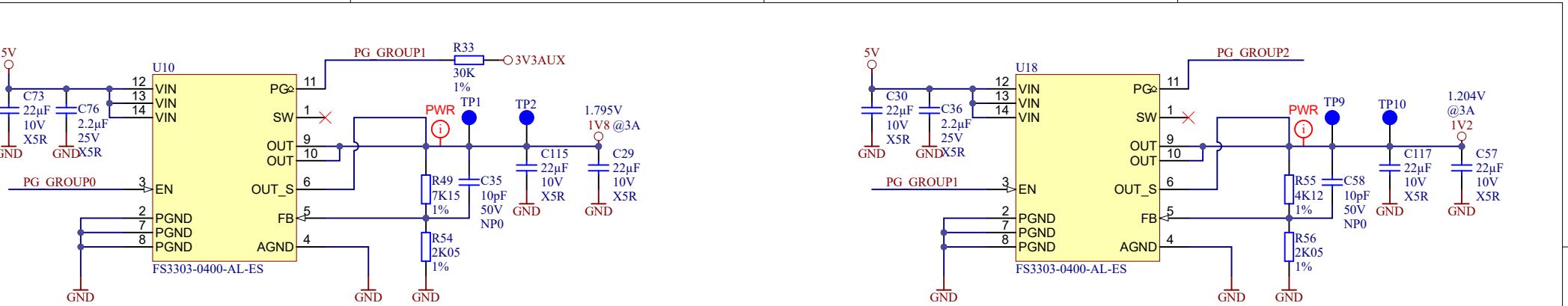
1 2 3 4



Device Address: 0x10  
Soft-start Time: 3ms



Title: Falcon - PWR_1		
A4	Number: TEI0183 NHE22-B	Rev. 01
Date: 22.01.2026	Copyright: Trenz Electronic GmbH	Page 32 of 34
Filename: PWR_1.SchDoc		

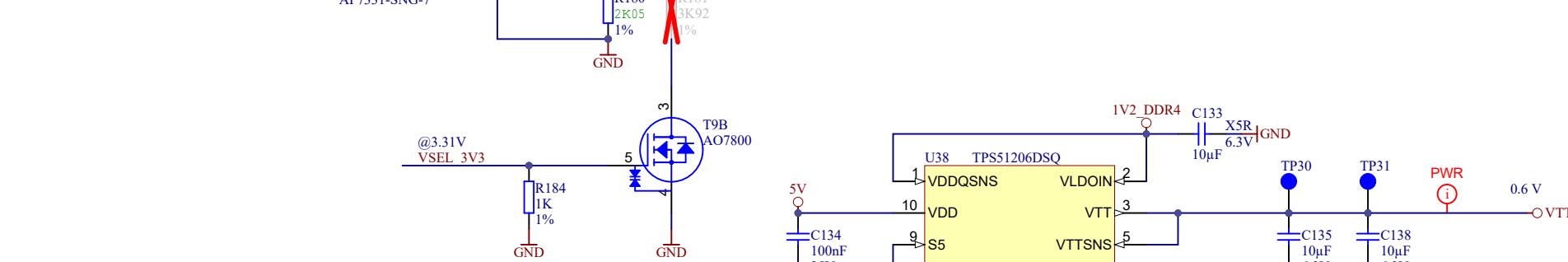
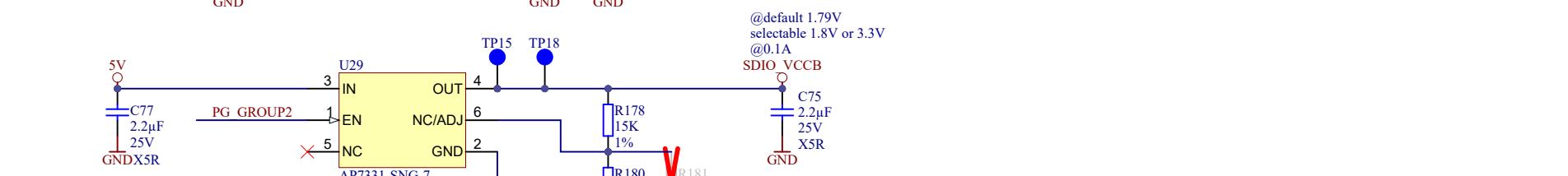
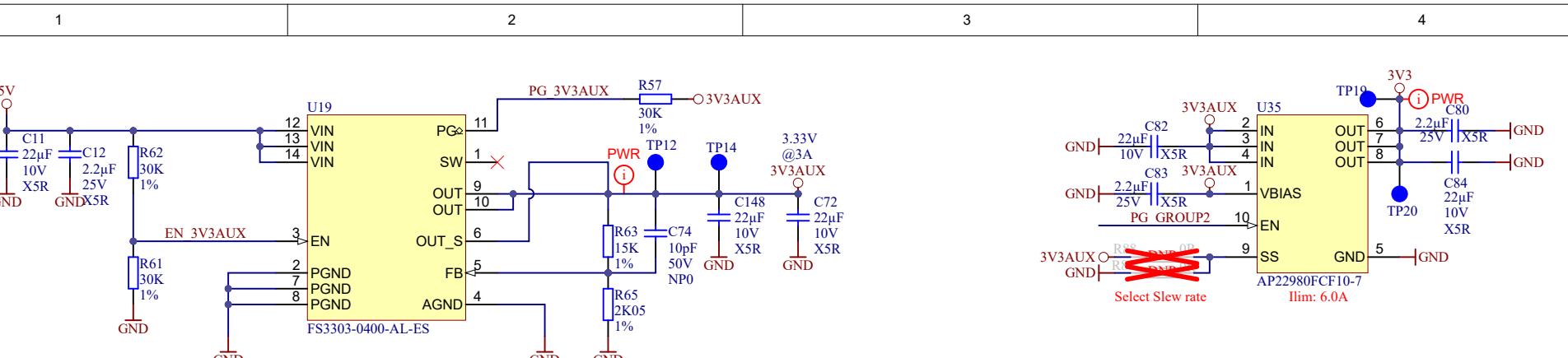


Title: English PWP 3

A4 Number: TEI018  
NHE22

Date: 22.01.2026 Copyright

Filename: PWR 2.SchD



Title: Falcon - PWR\_3

A4 Number: TEI0183  
NHE22-B

Rev. 01

Date: 22.01.2026 Copyright: Trenz Electronic GmbH

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Filename: PWR\_3.SchDoc