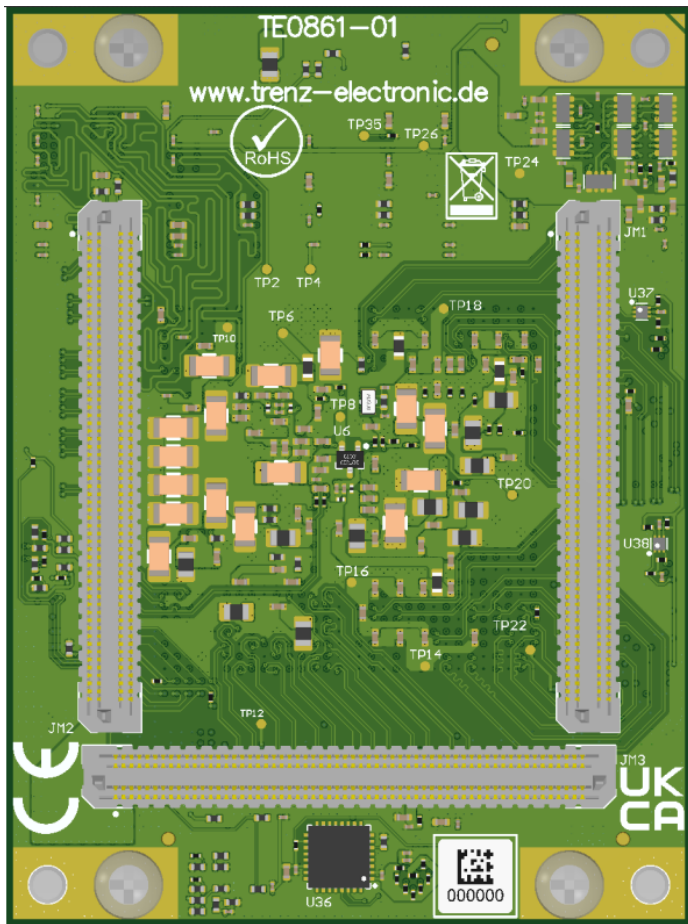
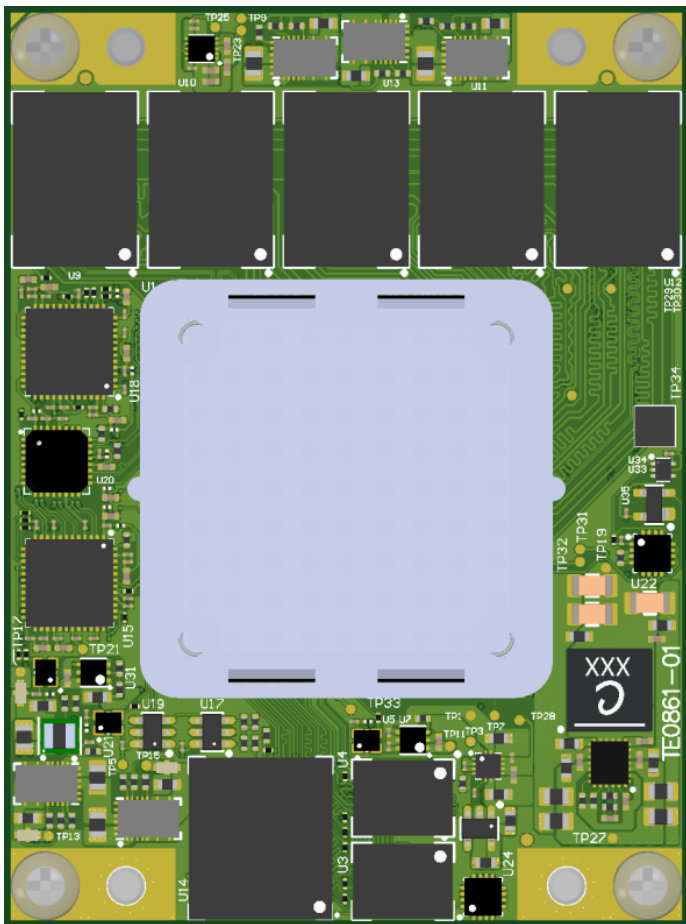




Regarding the usage of our schematics and alike documentation for Trenz module TE0861.

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.

TE0861 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!

	Title: TE0861 – Legal Notices Modules		
	A4	Number: TE0861 6BE59QA	Rev. 01
	Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 1 of 35
	Filename: Legal Notices Modules.SchDoc		

1

2

3

4

A

A

B

B

C

C

D

D

REV	Description	
-01	Initial revision	ED/VY

		Title: TE0861 – Revision Changes	
		A4	Number: TE0861 6BE59QA
		Date: 20.11.2025	Rev. 01
		Copyright: Trenz Electronic GmbH	Page 2 of 35
Filename: Revision_Changes.SchDoc			

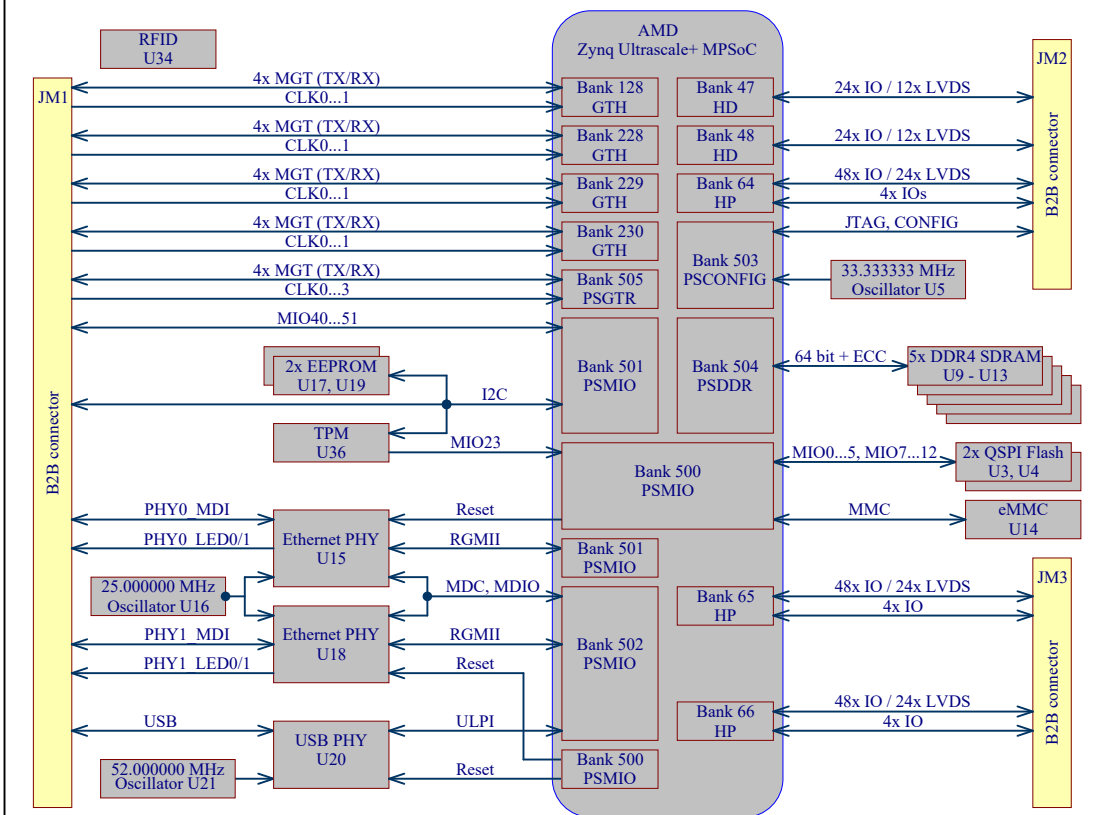
1

2

3

4

System Overview



Supported Voltage Ranges:

Power Rail	Direction	Range	Tolerance	Description	Note
VIN	IN	5 V - 12 V	+/- 10 %	Module main power supply	-
VCCO_47	IN	1.2 V - 3.3 V	1)	HD IO Bank 47	-
VCCO_48	IN	1.2 V - 3.3 V	1)	HD IO Bank 48	-
VCCO_64	IN	1.0 V ... 1.8 V	+/- 5 %	HP IO Bank 64	-
VCCO_65	IN	1.0 V ... 1.8 V	+/- 5 %	HP IO Bank 65	-
VCCO_66	IN	1.0 V ... 1.8 V	+/- 5 %	HP IO Bank 66	-
PSBATT	IN	1.2 V - 1.5 V	-	RTC / BBRAM	-
3V3	OUT	3.3 V	+/- 3 %	Periphery supply	-
1V8	OUT	1.8 V	+/- 3 %	Periphery supply	-

1) +/- 5 %, - 5 % / +3 % for 3.3 V

I2C Addresses:

Device	Address	Note
MPSoC U1H	-	AMD Zynq Ultrascale+ MPSoC PS
B2B JM1A	-	B2B connector
TPM U36	0x2E	Trusted Platform Modul
EEPROM U17	0x50	MAC-EEPROM with user area
EEPROM U19	0x51	MAC-EEPROM with user area

U_DDR4-TERM
DDR4-TERM.SchDoc

U_ZU_POWER
ZU_POWER.SchDoc

U_ZU_PS_POWER
ZU_PS_POWER.SchDoc

U_POWER_1
POWER_1.SchDoc

U_POWER_2
POWER_2.SchDoc

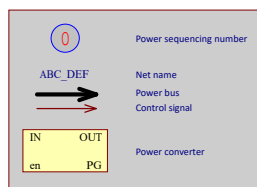
U_POWER_3
POWER_3.SchDoc

U_POWER_4
POWER_4.SchDoc

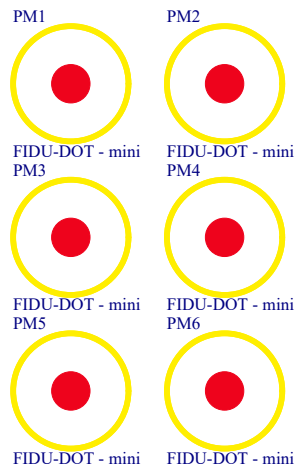
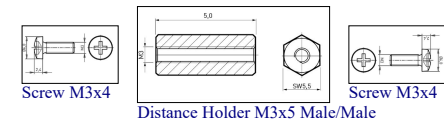
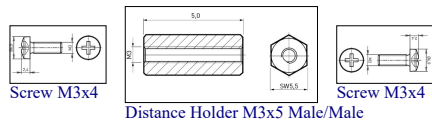
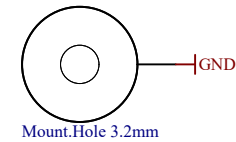
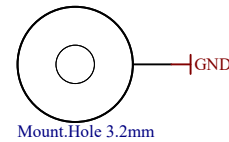
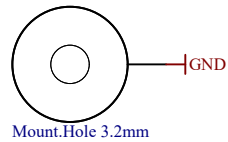
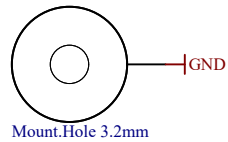
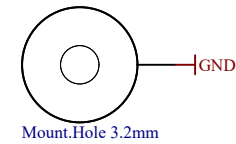
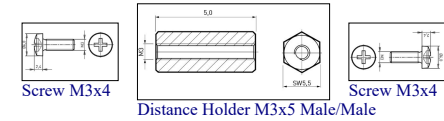
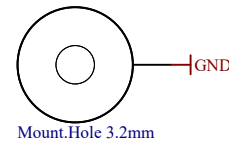
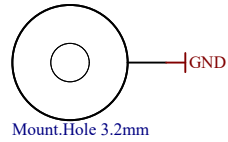
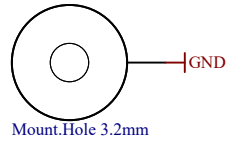
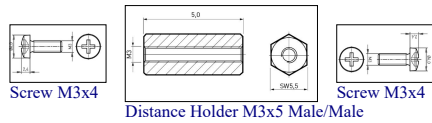


Title: TE0861 – System Overview

A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 3 of 35
Filename: TE0861-Overview.SchDoc		



Special notes:



Serial1
Serial
Serialnumber 6,3 x 6.3mm
RoHS1

RoHS Logo on Top Overlay

RoHS-TOOVERLAY
WEEE1

WEEE Logo on Top Overlay

WEEE-TOOVERLAY
CE1

CE Logo on Top Overlay

CE-TOOVERLAY
UKCA1

UKCA Logo on Top Overlay

UKCA-TOOVERLAY

Design drawn by: ED
Checked by: MR
Assembly variant: 6BE59QA
Created by: ED
Modified by: ED
Modified at: 2026-04-29



Title: TE0861

A4

Number: TE0861
6BE59QA

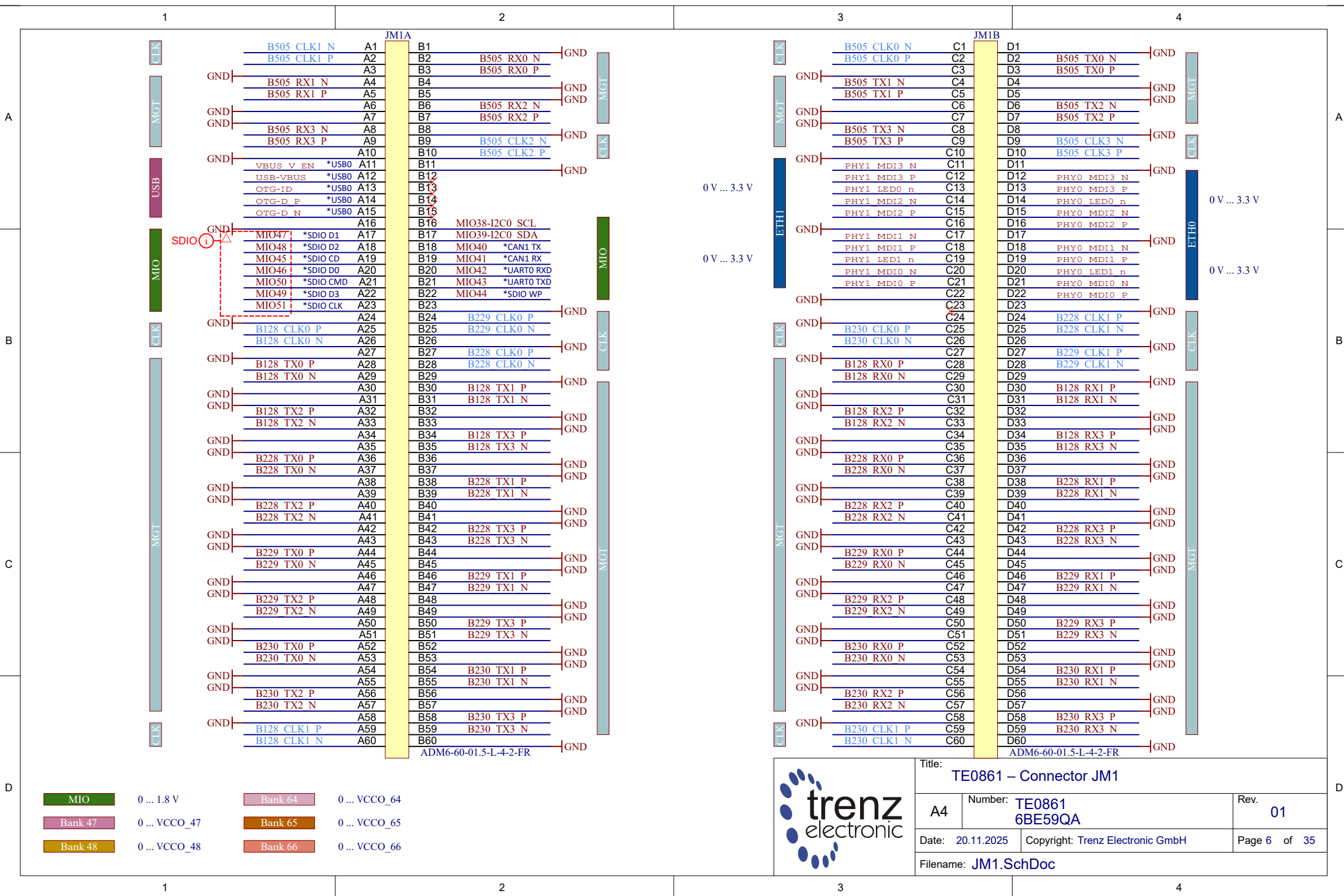
Rev. 01

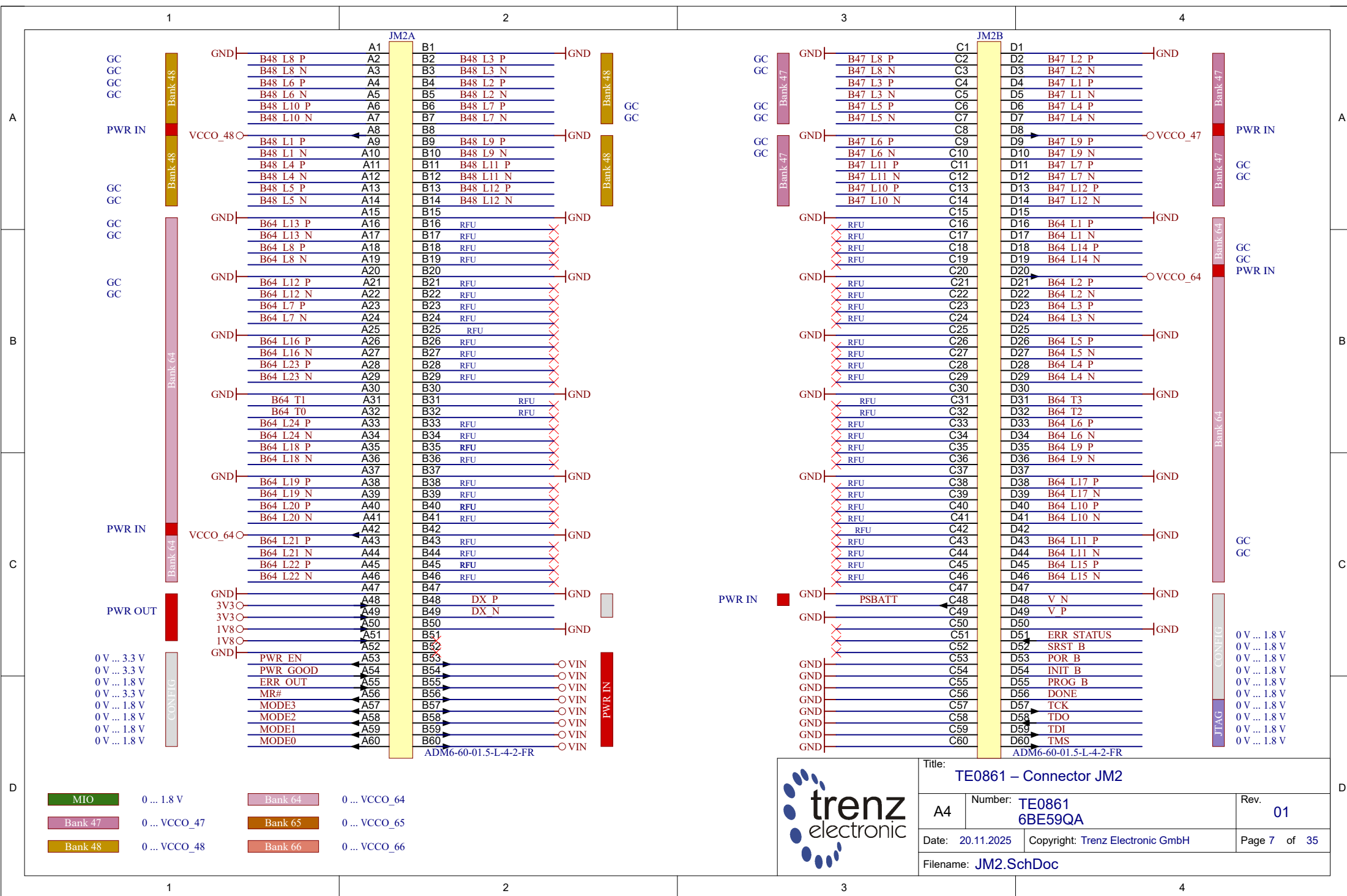
Date: 20.11.2025

Copyright: Trenz Electronic GmbH

Page 5 of 35

Filename: TE0861.SchDoc





1

2

3

4

A

A

B

B

C

C

D

D

JM3A

JM3B

RFU	A1	B1	RFU
RFU	A2	B2	RFU
RFU	A3	B3	RFU
RFU	A4	B4	RFU
RFU	A5	B5	RFU
RFU	A6	B6	RFU
RFU	A7	B7	RFU
RFU	A8	B8	RFU
RFU	A9	B9	RFU
RFU	A10	B10	RFU
RFU	A11	B11	RFU
RFU	A12	B12	RFU
RFU	A13	B13	RFU
RFU	A14	B14	RFU
GND	A15	B15	GND
B65 L4 P	A16	B16	B65 L9 P
B65 L4 N	A17	B17	B65 L9 N
B65 L8 P	A18	B18	B65 L11 P
B65 L8 N	A19	B19	B65 L11 N
GND	A20	B20	GND
B65 L10 P	A21	B21	B65 L2 P
B65 L10 N	A22	B22	B65 L2 N
B65 L12 P	A23	B23	B65 L1 P
B65 L12 N	A24	B24	B65 L1 N
VCCO_65	A25	B25	GND
B65 L7 P	A26	B26	B65 L5 P
B65 L7 N	A27	B27	B65 L5 N
B65 L6 P	A28	B28	B65 L15 P
B65 L6 N	A29	B29	B65 L15 N
B65 T2	A30	B30	B65 T0
B65 T3	A31	B31	B65 T1
GND	A32	B32	GND
B66 L14 P	A33	B33	B66 L16 P
B66 L14 N	A34	B34	B66 L16 N
B66 L17 P	A35	B35	B66 L13 P
B66 L17 N	A36	B36	B66 L13 N
GND	A37	B37	GND
B66 L15 P	A38	B38	B66 L18 P
B66 L15 N	A39	B39	B66 L18 N
B66 L21 P	A40	B40	B66 L20 P
B66 L21 N	A41	B41	B66 L20 N
VCCO_66	A42	B42	GND
B66 L23 P	A43	B43	B66 L22 P
B66 L23 N	A44	B44	B66 L22 N
B66 L24 P	A45	B45	B66 L19 P
B66 L24 N	A46	B46	B66 L19 N
GND	A47	B47	GND
RFU	A48	B48	RFU
RFU	A49	B49	RFU
RFU	A50	B50	RFU
RFU	A51	B51	RFU
RFU	A52	B52	RFU
RFU	A53	B53	RFU
RFU	A54	B54	RFU
RFU	A55	B55	RFU
RFU	A56	B56	RFU
RFU	A57	B57	RFU
RFU	A58	B58	RFU
RFU	A59	B59	RFU
RFU	A60	B60	RFU

ADM6-60-01.5-L-4-2-FR

RFU	C1	D1	RFU
RFU	C2	D2	RFU
RFU	C3	D3	RFU
RFU	C4	D4	RFU
RFU	C5	D5	RFU
RFU	C6	D6	RFU
RFU	C7	D7	RFU
RFU	C8	D8	RFU
RFU	C9	D9	RFU
RFU	C10	D10	RFU
RFU	C11	D11	RFU
RFU	C12	D12	RFU
RFU	C13	D13	RFU
RFU	C14	D14	RFU
GND	C15	D15	GND
B65 L3 P	C16	D16	B65 L20 P
B65 L3 N	C17	D17	B65 L20 N
B65 L14 P	C18	D18	B65 L17 P
B65 L14 N	C19	D19	B65 L17 N
GND	C20	D20	GND
B65 L16 P	C21	D21	B65 L22 P
B65 L16 N	C22	D22	B65 L22 N
B65 L21 P	C23	D23	B65 L19 P
B65 L21 N	C24	D24	B65 L19 N
GND	C25	D25	GND
B65 L18 P	C26	D26	B65 L24 P
B65 L18 N	C27	D27	B65 L24 N
B65 L13 P	C28	D28	B65 L23 P
B65 L13 N	C29	D29	B65 L23 N
GND	C30	D30	GND
B66 T2	C31	D31	B66 T0
B66 T3	C32	D32	B66 T1
B66 L2 P	C33	D33	B66 L4 P
B66 L2 N	C34	D34	B66 L4 N
B66 L3 P	C35	D35	B66 L6 P
B66 L3 N	C36	D36	B66 L6 N
GND	C37	D37	GND
B66 L1 P	C38	D38	B66 L5 P
B66 L1 N	C39	D39	B66 L5 N
B66 L8 P	C40	D40	B66 L9 P
B66 L8 N	C41	D41	B66 L9 N
GND	C42	D42	GND
B66 L7 P	C43	D43	B66 L11 P
B66 L7 N	C44	D44	B66 L11 N
B66 L12 P	C45	D45	B66 L10 P
B66 L12 N	C46	D46	B66 L10 N
GND	C47	D47	GND
RFU	C48	D48	RFU
RFU	C49	D49	RFU
RFU	C50	D50	RFU
RFU	C51	D51	RFU
RFU	C52	D52	RFU
RFU	C53	D53	RFU
RFU	C54	D54	RFU
RFU	C55	D55	RFU
RFU	C56	D56	RFU
RFU	C57	D57	RFU
RFU	C58	D58	RFU
RFU	C59	D59	RFU
RFU	C60	D60	RFU

ADM6-60-01.5-L-4-2-FR

MIO	0 ... 1.8 V	Bank 64	0 ... VCCO_64
Bank 47	0 ... VCCO_47	Bank 65	0 ... VCCO_65
Bank 48	0 ... VCCO_48	Bank 66	0 ... VCCO_66



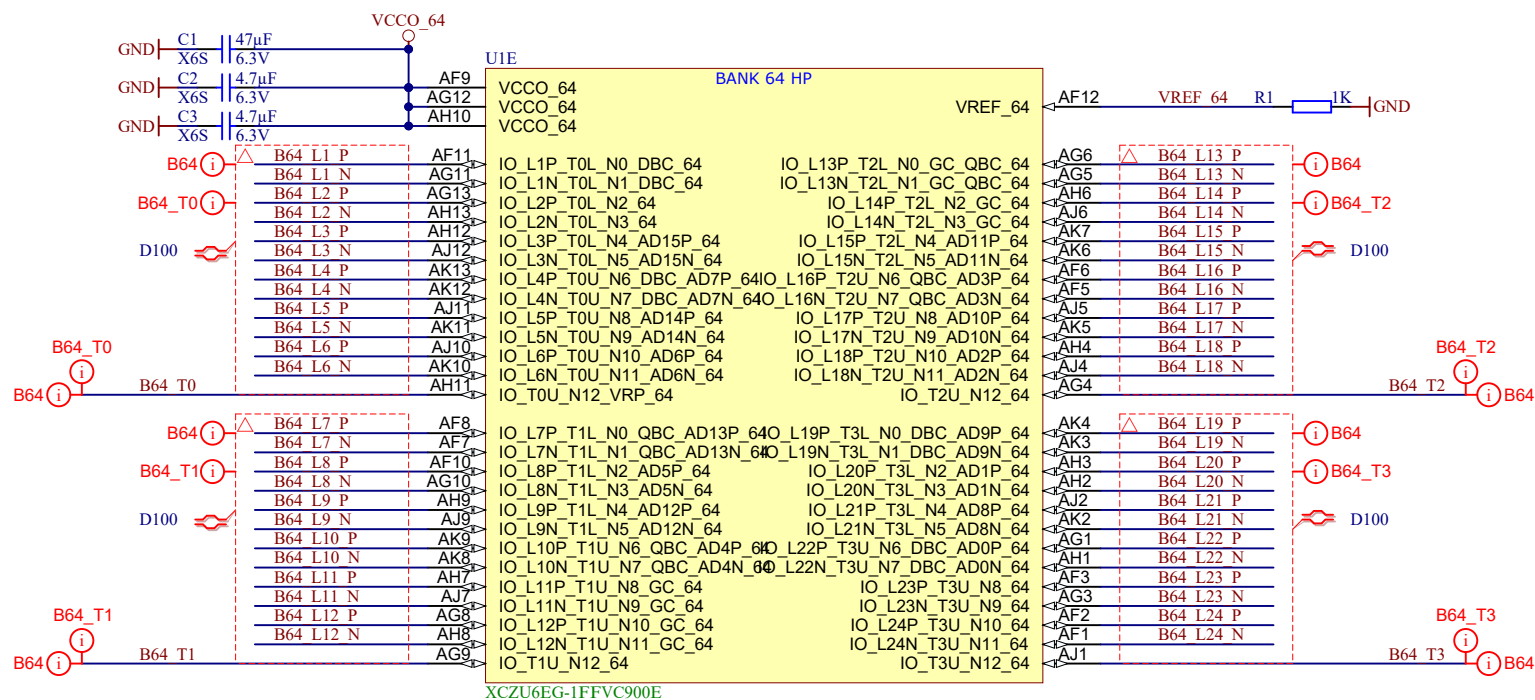
Title: TE0861 – Connector JM3			
A4	Number: TE0861 6BE59QA		Rev. 01
Date: 20.11.2025		Copyright: Trenz Electronic GmbH	Page 8 of 35
Filename: JM3.SchDoc			

1

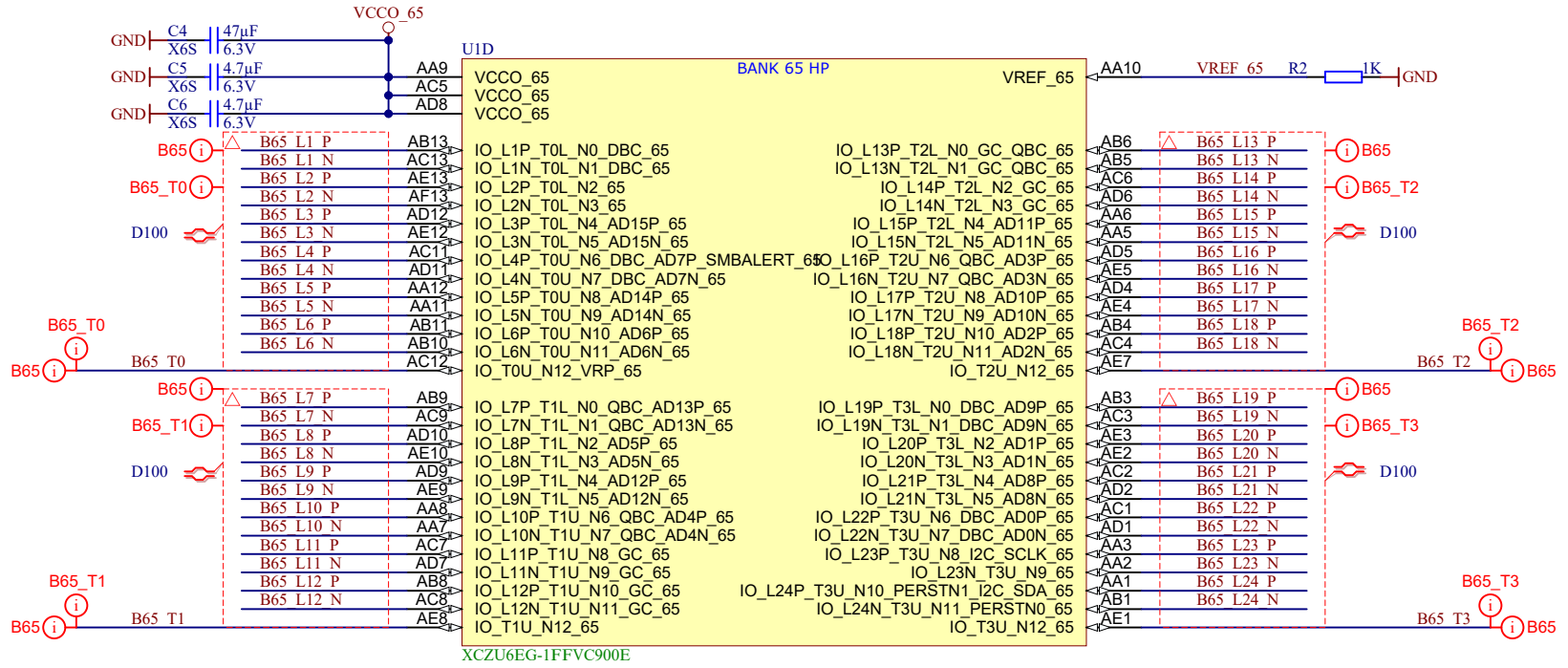
2

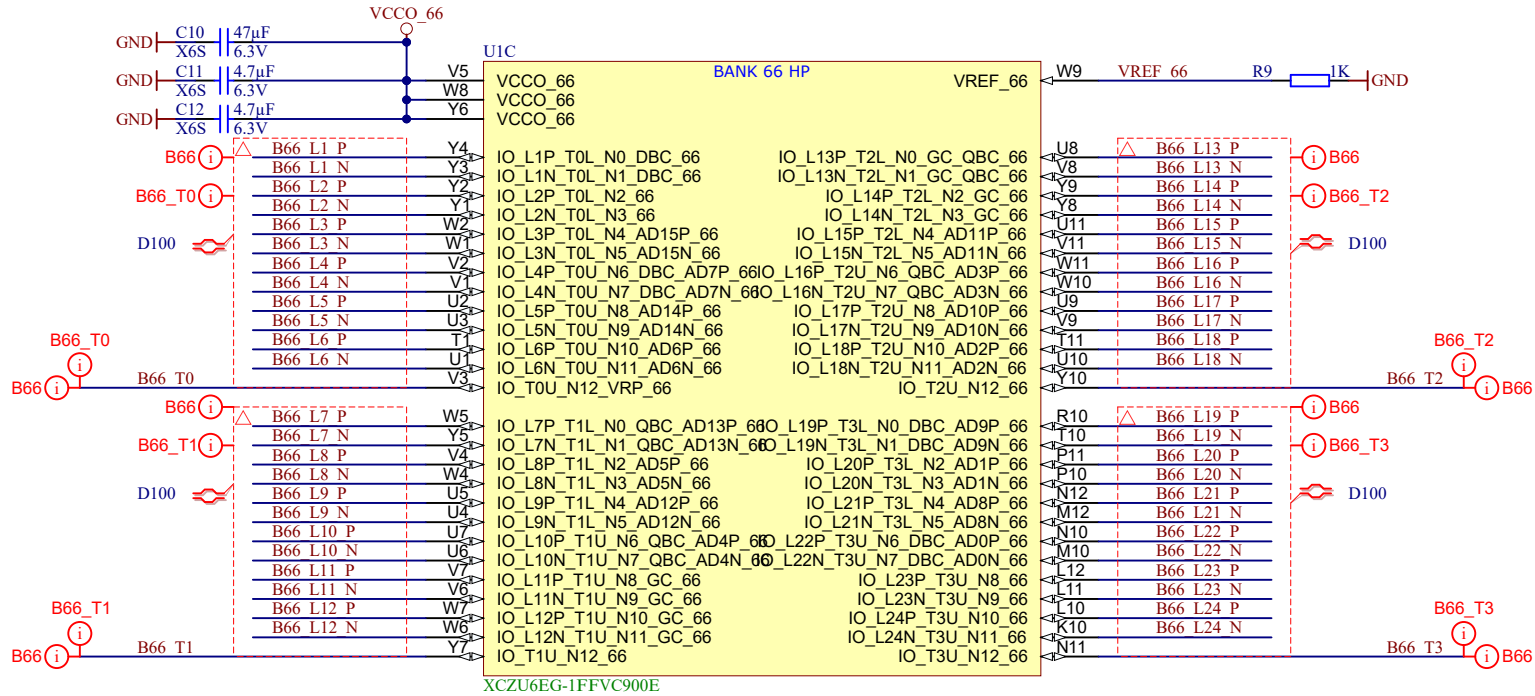
3

4

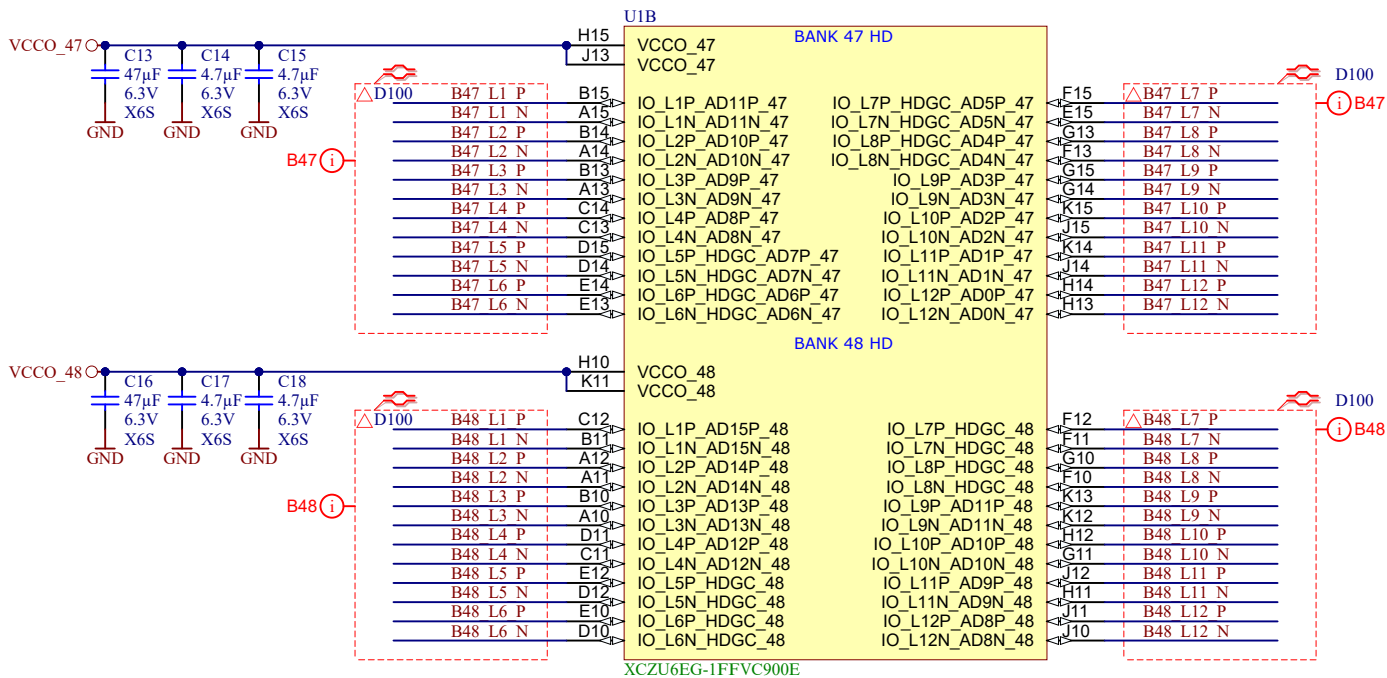


Title: TE0861 – B64		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 9 of 35
Filename: B64.SchDoc		





Title: TE0861 – B66			
A4	Number: TE0861 6BE59QA		Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH		Page 11 of 35
Filename: B66.SchDoc			



1

2

3

4

A

A

B

B

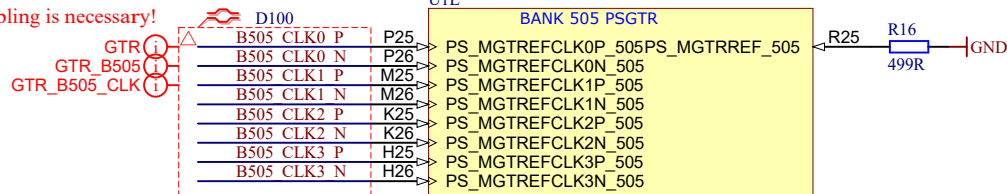
C

C

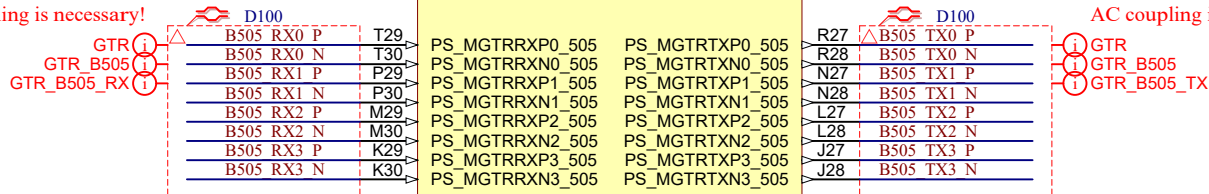
D

D

AC coupling is necessary!



AC coupling is necessary!



AC coupling is necessary!

XCZU6EG-1FFVC900E



Title: TE0861 – B_PS_GT		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 16 of 35
Filename: B_PS_GT.SchDoc		

1

2

3

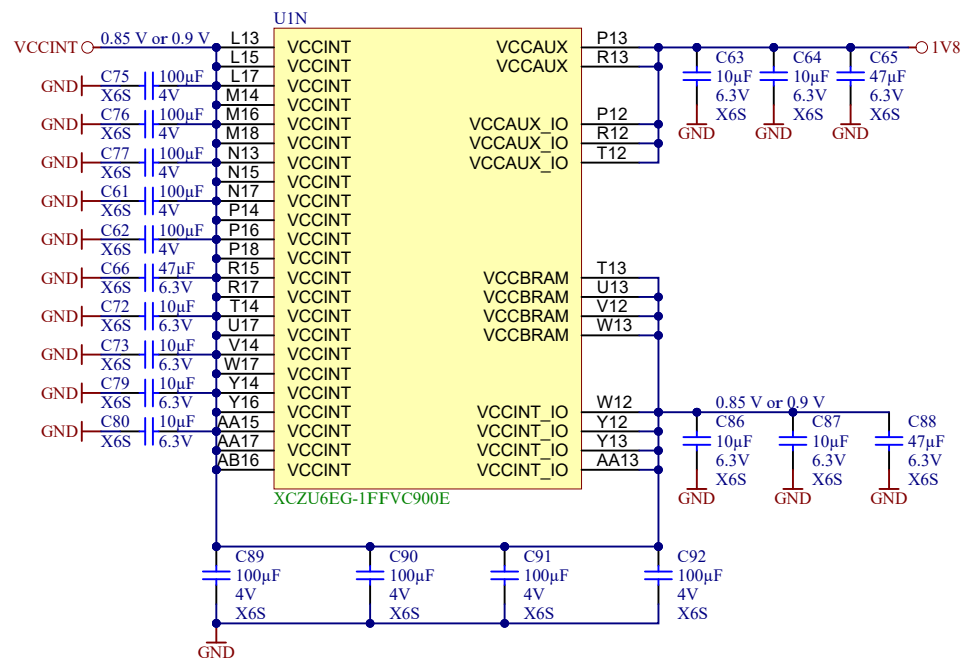
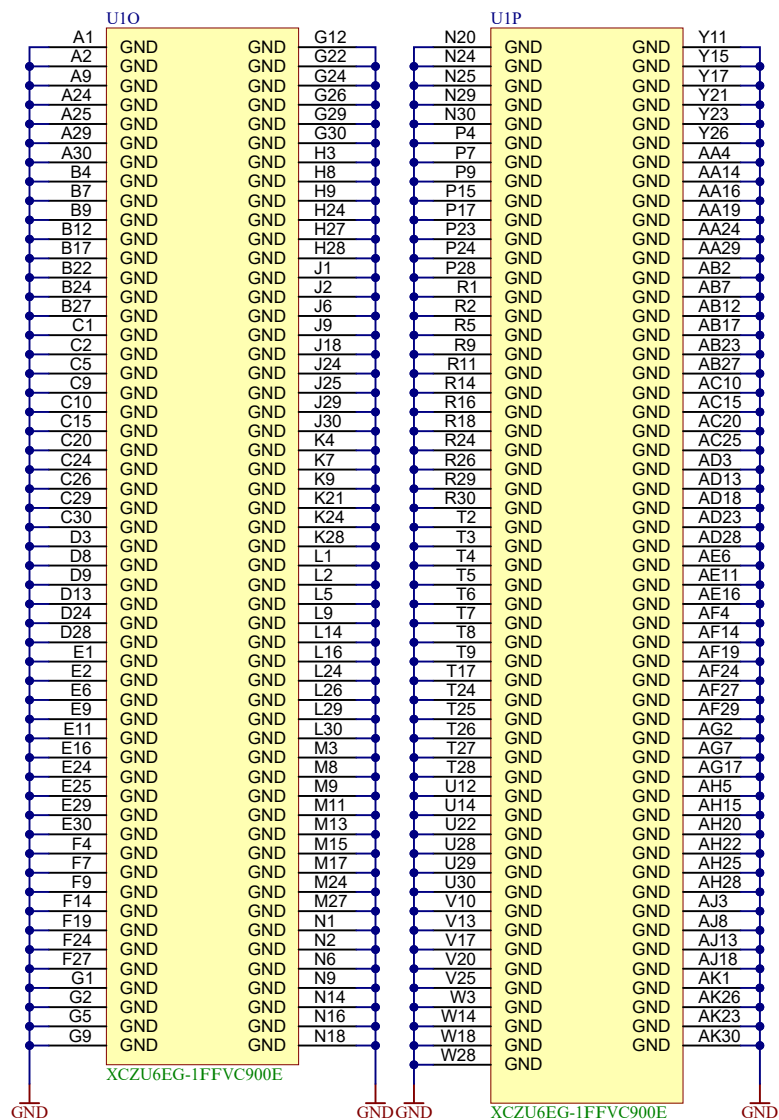
4

1

2

3

4



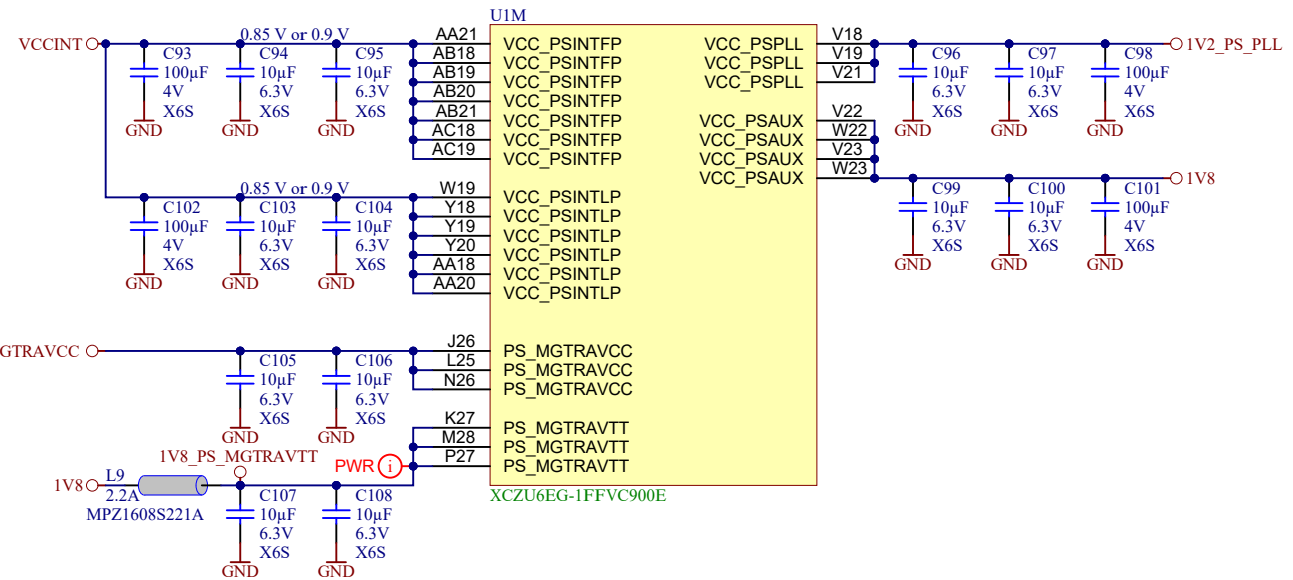
Title: TE0861 – ZU_POWER		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 19 of 35
Filename: ZU_POWER.SchDoc		

1

2

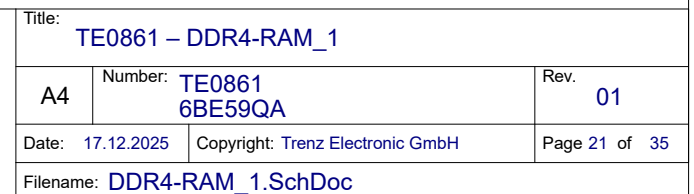
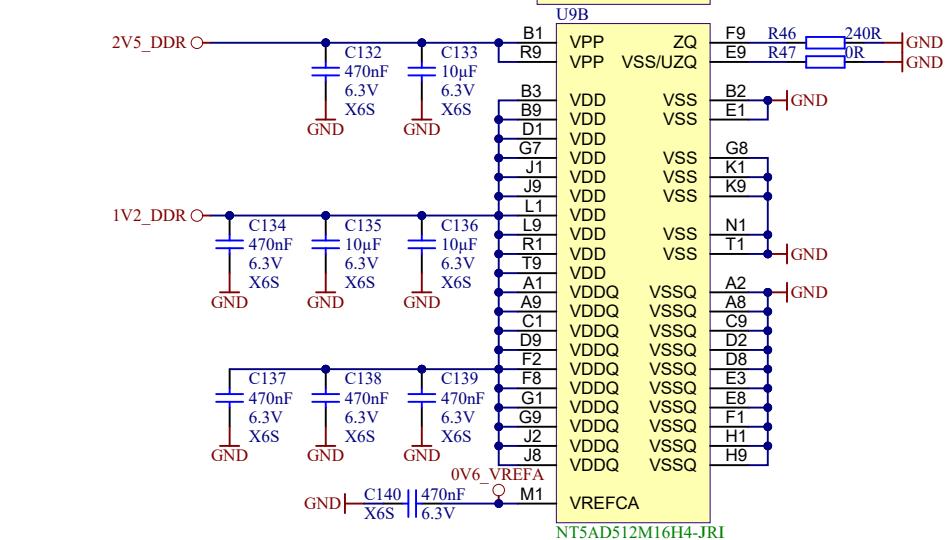
3

4



		Title: TE0861 - ZU_PS_POWER	
		A4	Number: TE0861 6BE59QA
Date: 20.11.2025		Copyright: Trenz Electronic GmbH	
Filename: ZU_PS_POWER.SchDoc		Page 20 of 35	

Rev. 01



1

2

3

4

A

A

B

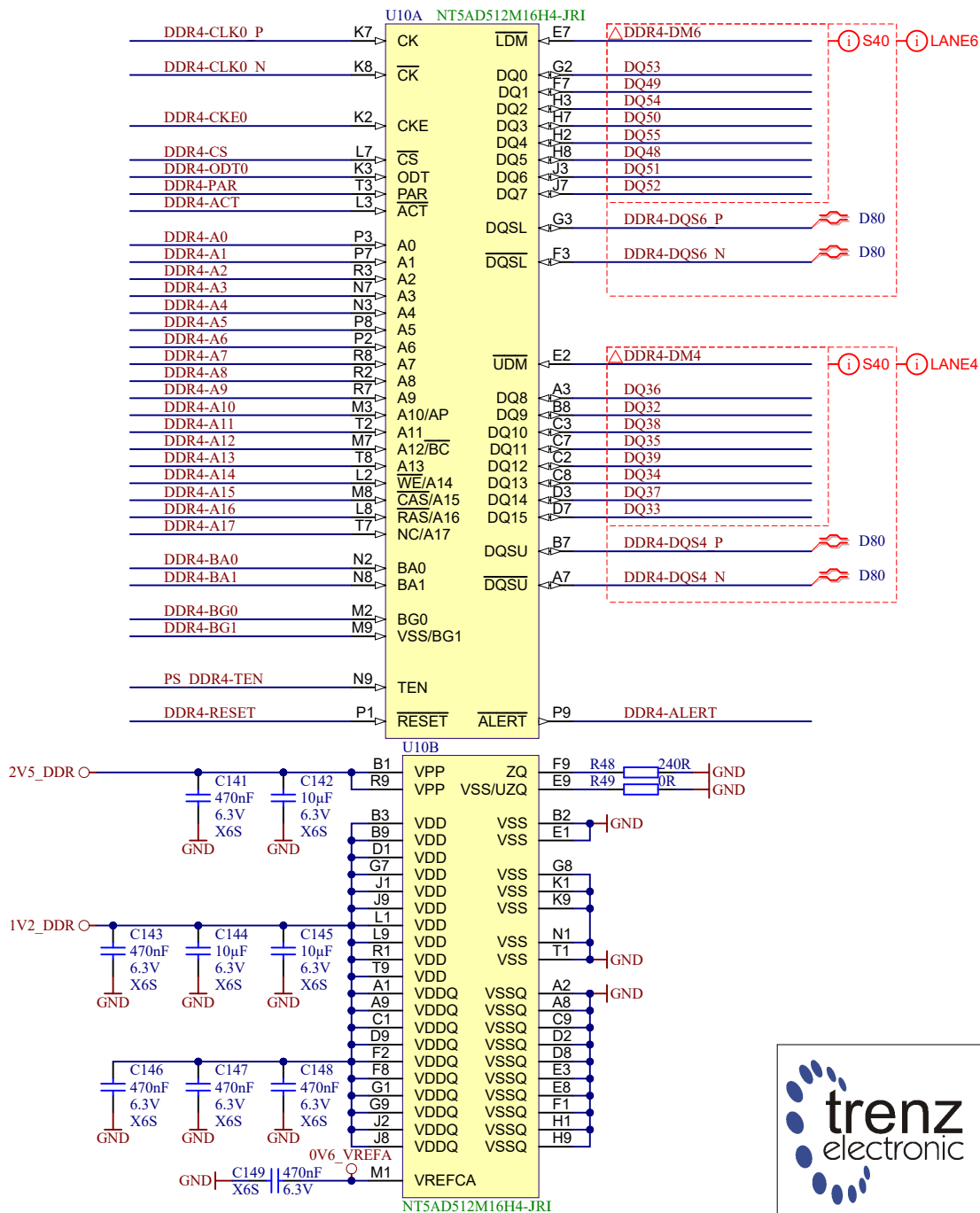
B

C

C

D

D



Title: TE0861 – DDR4-RAM_2		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 17.12.2025	Copyright: Trenz Electronic GmbH	Page 22 of 35
Filename: DDR4-RAM_2.SchDoc		

1

2

3

4

1

2

3

4

A

A

B

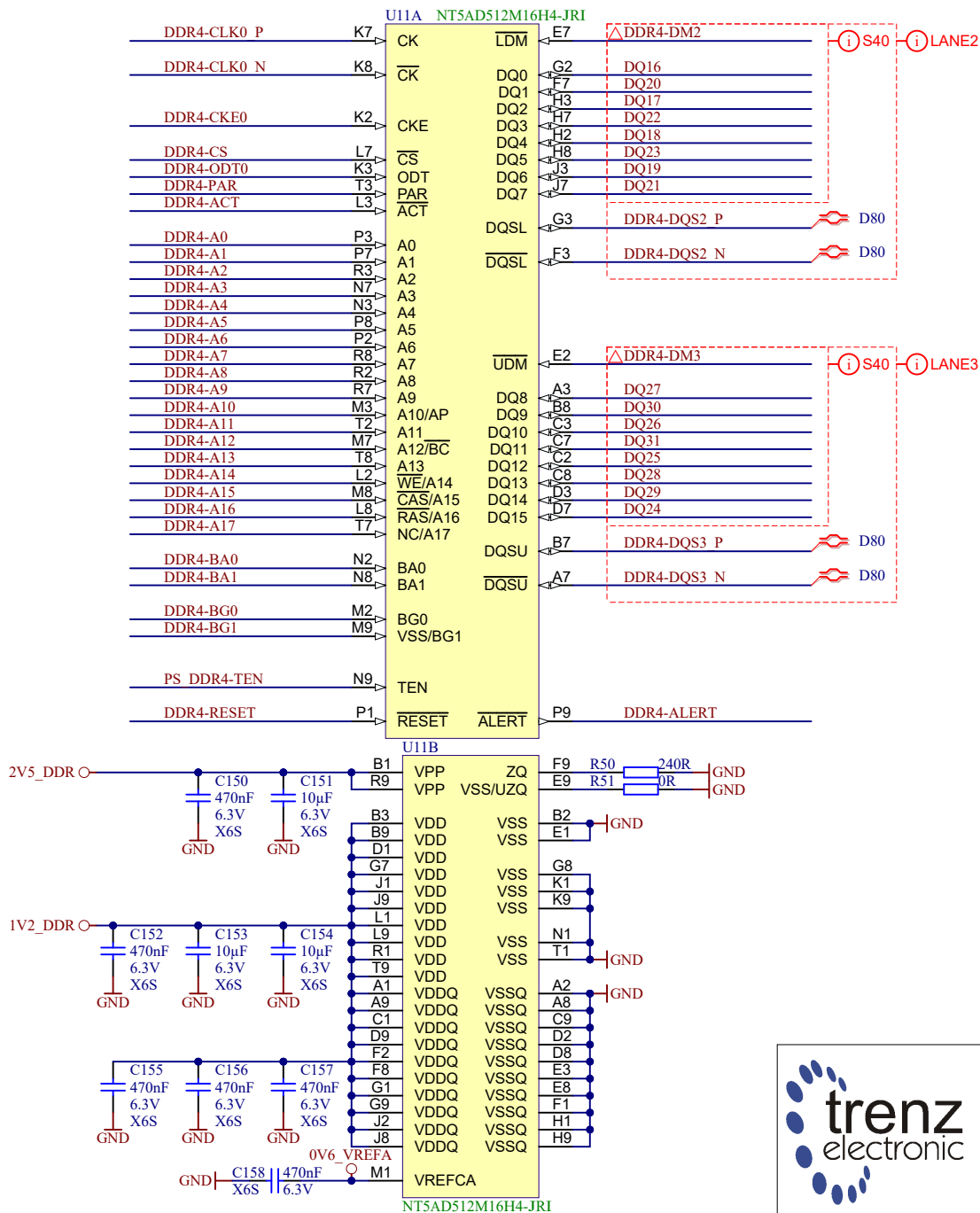
B

C

C

D

D



Title: TE0861 – DDR4-RAM_3		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 17.12.2025	Copyright: Trenz Electronic GmbH	Page 23 of 35
Filename: DDR4-RAM_3.SchDoc		

1

2

3

4

1

2

3

4

A

A

B

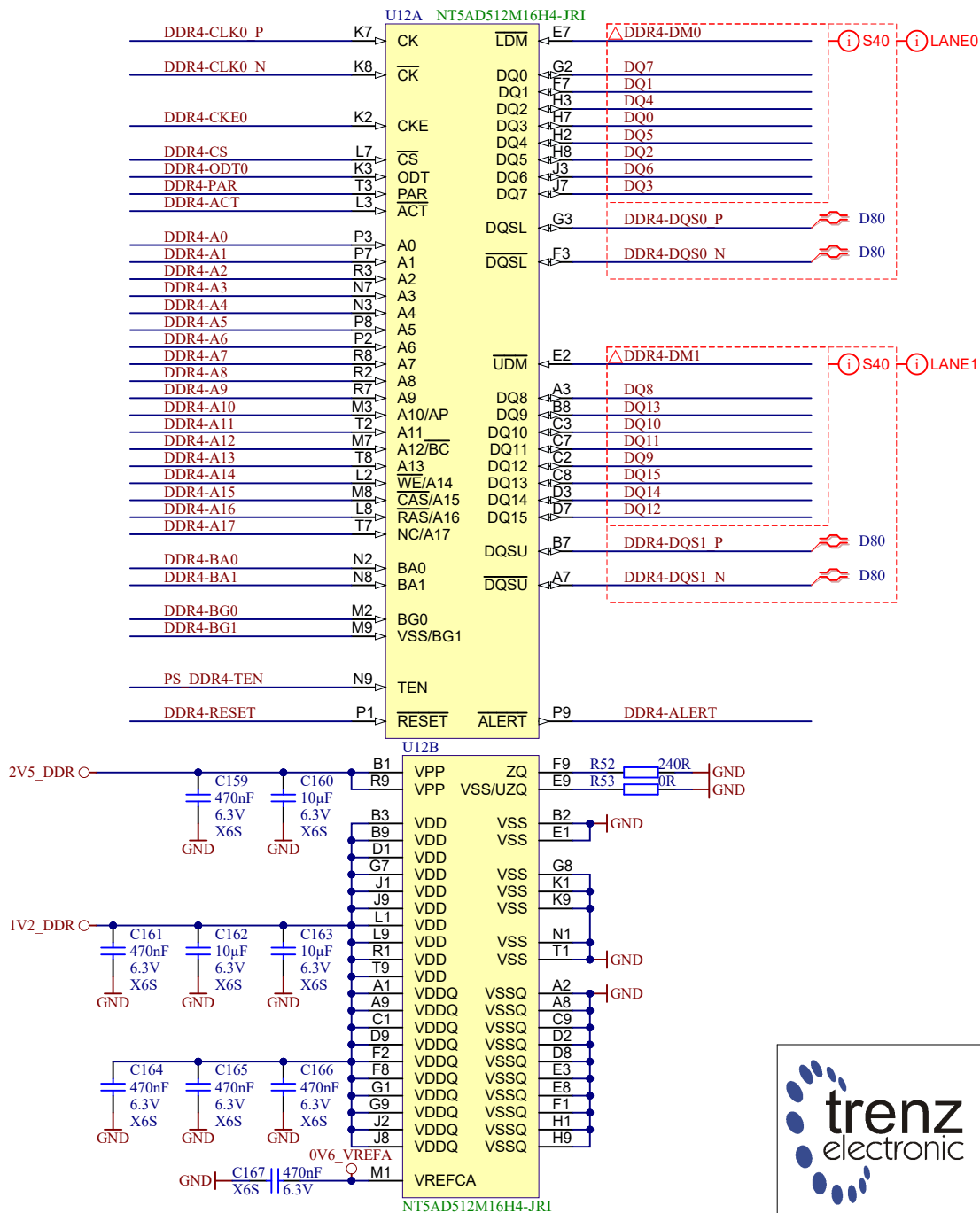
B

C

C

D

D



Title: TE0861 – DDR4-RAM_4		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 17.12.2025	Copyright: Trenz Electronic GmbH	Page 24 of 35
Filename: DDR4-RAM_4.SchDoc		

1

2

3

4

1

2

3

4

A

A

B

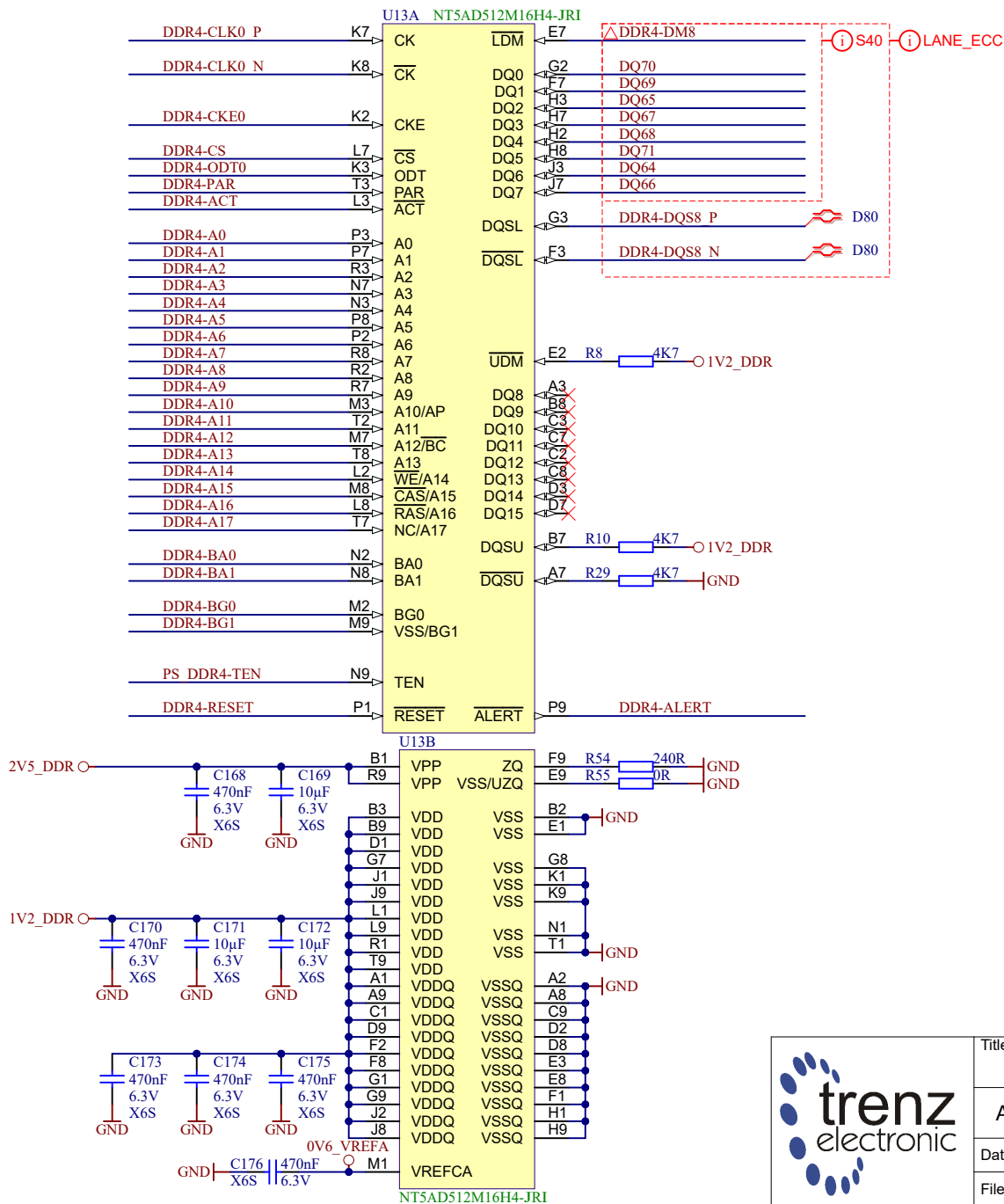
B

C

C

D

D



Title: TE0861 – DDR4-RAM_5		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 17.12.2025	Copyright: Trenz Electronic GmbH	Page 25 of 35
Filename: DDR4-RAM_5.SchDoc		

1

2

3

4

1

2

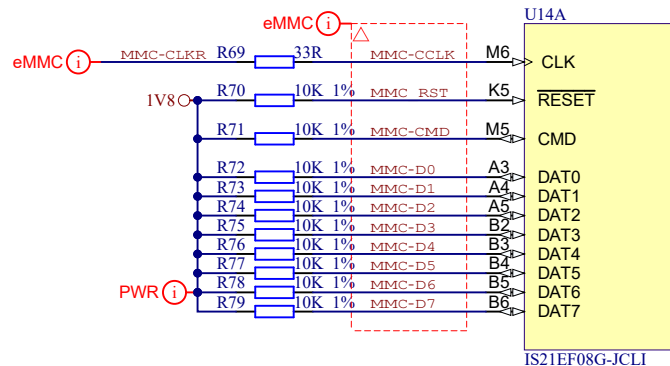
3

4

U14D

A1	NC	NC	H2
A2	NC	NC	H3
A8	NC	NC	H12
A9	NC	NC	H13
A10	NC	NC	H14
A11	NC	NC	J1
A12	NC	NC	J2
A13	NC	NC	J3
A14	NC	NC	J12
B1	NC	NC	J13
B7	NC	NC	J14
B8	NC	NC	K1
B9	NC	NC	K2
B10	NC	NC	K3
B11	NC	NC	K12
B12	NC	NC	K13
B13	NC	NC	K14
B14	NC	NC	L1
C1	NC	NC	L2
C3	NC	NC	L3
C7	NC	NC	L12
C8	NC	NC	L13
C9	NC	NC	L14
C10	NC	NC	M1
C11	NC	NC	M2
C12	NC	NC	M3
C13	NC	NC	M7
C14	NC	NC	M8
D1	NC	NC	M9
D2	NC	NC	M10
D3	NC	NC	M11
D4	NC	NC	M12
D12	NC	NC	M13
D13	NC	NC	M14
D14	NC	NC	N1
E1	NC	NC	N3
E2	NC	NC	N6
E3	NC	NC	N7
E12	NC	NC	N8
E13	NC	NC	N9
E14	NC	NC	N10
F1	NC	NC	N11
F2	NC	NC	N12
F3	NC	NC	N13
F12	NC	NC	N14
F13	NC	NC	P1
F14	NC	NC	P2
G1	NC	NC	P8
G2	NC	NC	P9
G12	NC	NC	P11
G13	NC	NC	P12
G14	NC	NC	P13
H1	NC	NC	P14

IS21EF08G-JCLI



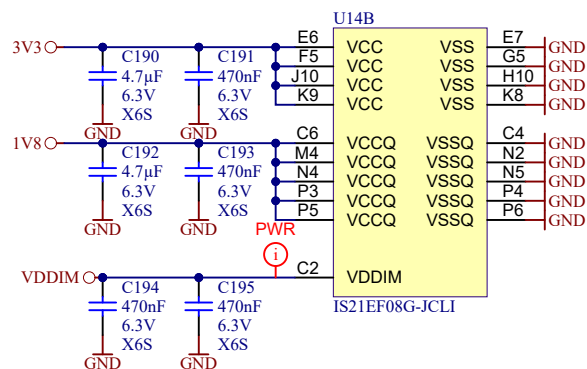
U14A

IS21EF08G-JCLI

U14C

A6	RFU/VSS
A7	RFU
C5	RFU/NC
E5	RFU
E8	RFU
E9	RFU
E10	RFU
F10	RFU
G3	RFU/NC
G10	RFU
H5	RFU/DS
J5	RFU/VSS
K6	RFU
K7	RFU
K10	RFU
P7	RFU/NC
P10	RFU

IS21EF08G-JCLI



U14B

IS21EF08G-JCLI



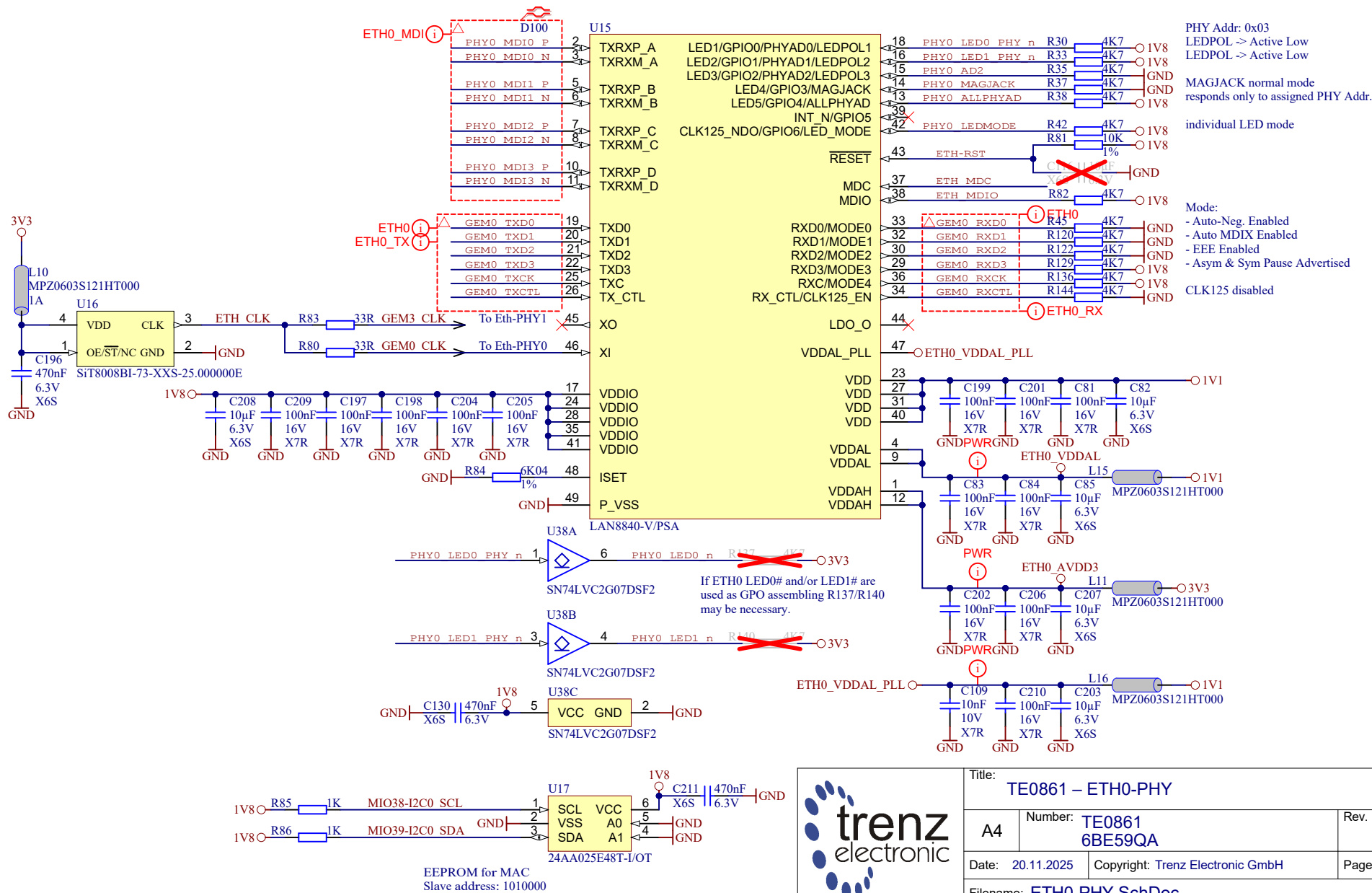
Title: TE0861 – eMMC		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 27 of 35
Filename: eMMC.SchDoc		

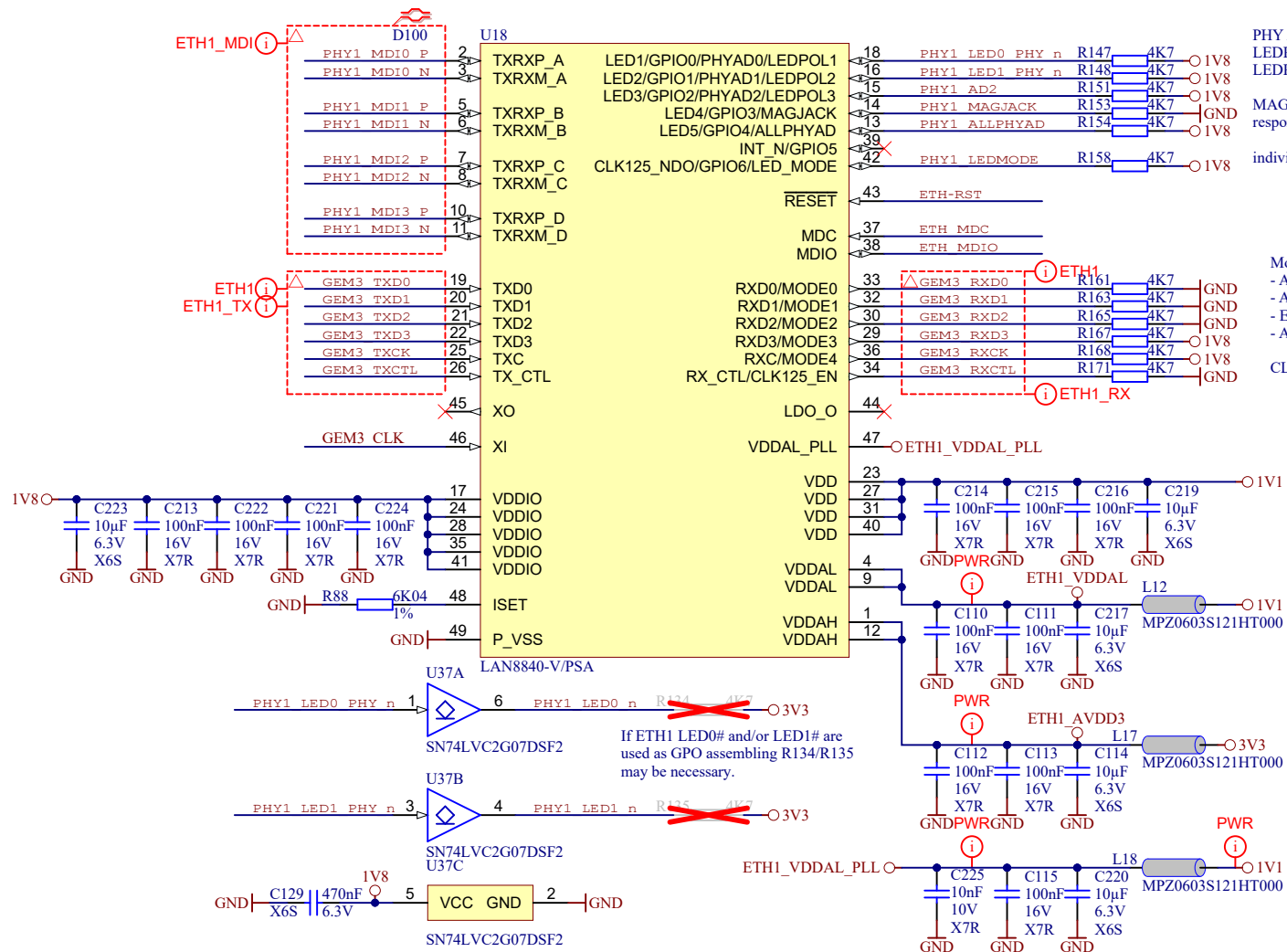
1

2

3

4





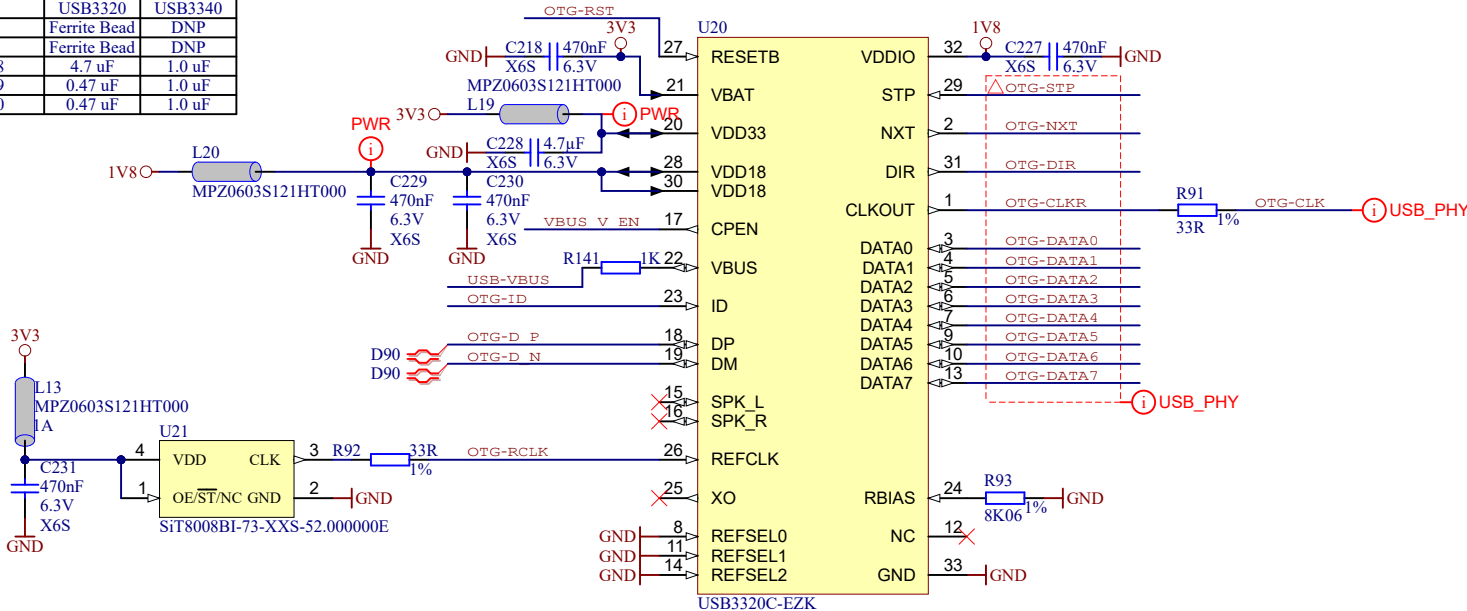
PHY Addr: 0x07
 LEDPOL -> Active Low
 LEDPOL -> Active Low
 MAGJACK normal mode
 responds only to assigned PHY Addr.
 individual LED mode

Mode:
 - Auto-Neg. Enabled
 - Auto MDIX Enabled
 - EEE Enabled
 - Asym & Sym Pause Advertised
 CLK125 disabled



Title: TE0861 – ETH1-PHY		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 29 of 35
Filename: ETH1-PHY.SchDoc		

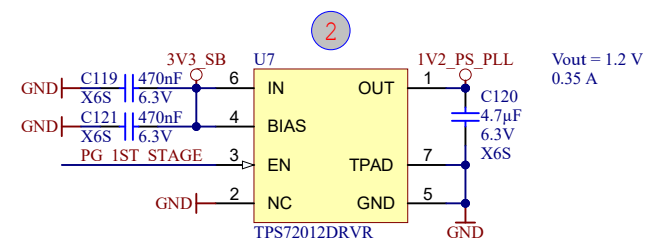
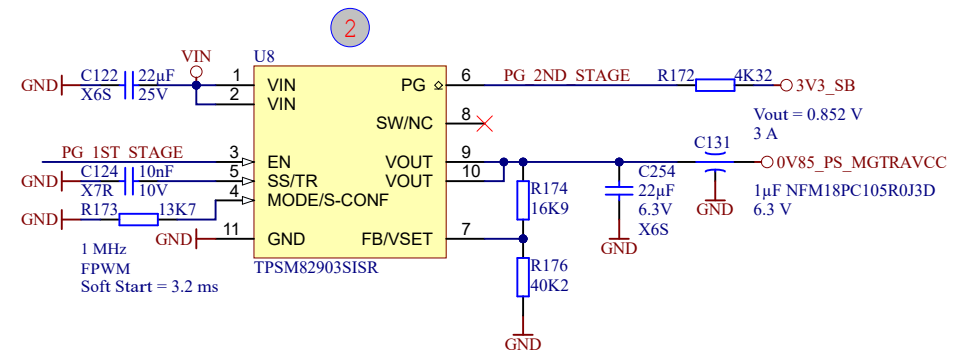
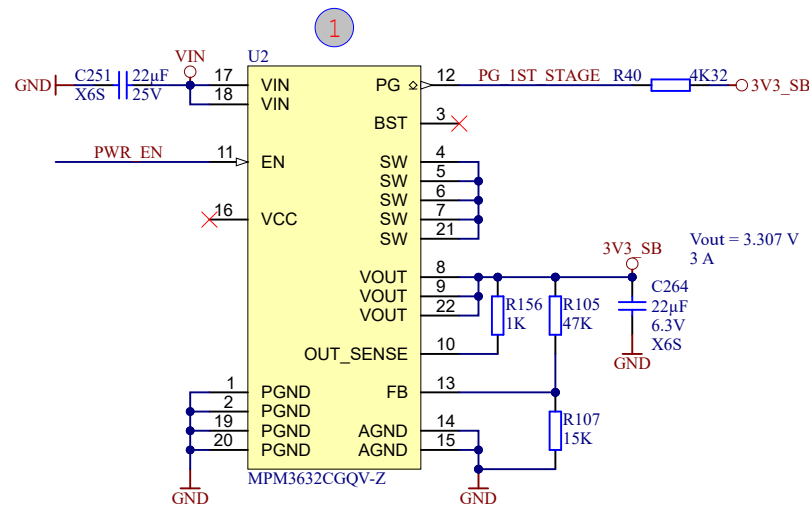
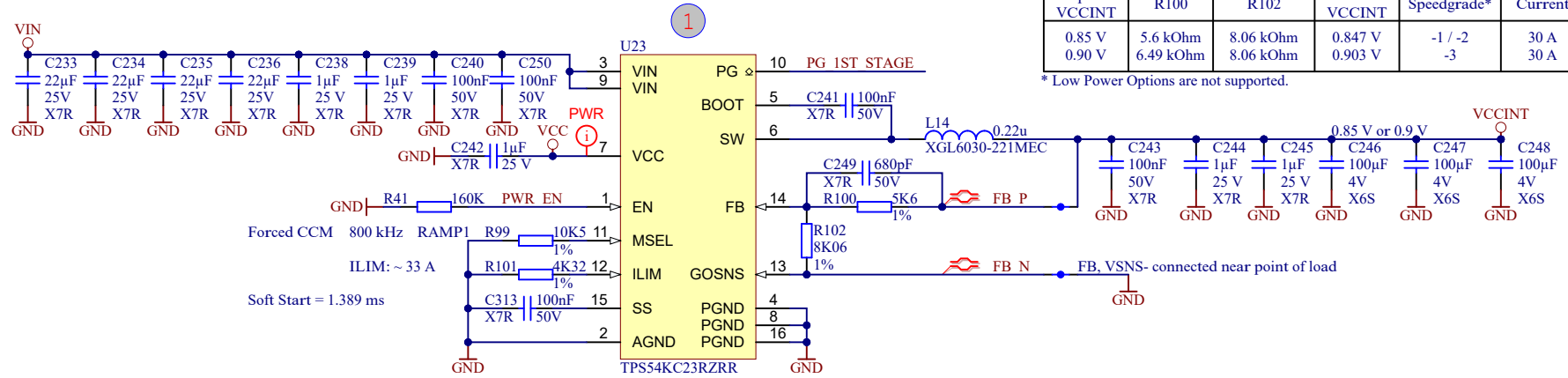
	USB3320	USB3340
L19	Ferrite Bead	DNP
L20	Ferrite Bead	DNP
C228	4.7 uF	1.0 uF
C229	0.47 uF	1.0 uF
C230	0.47 uF	1.0 uF



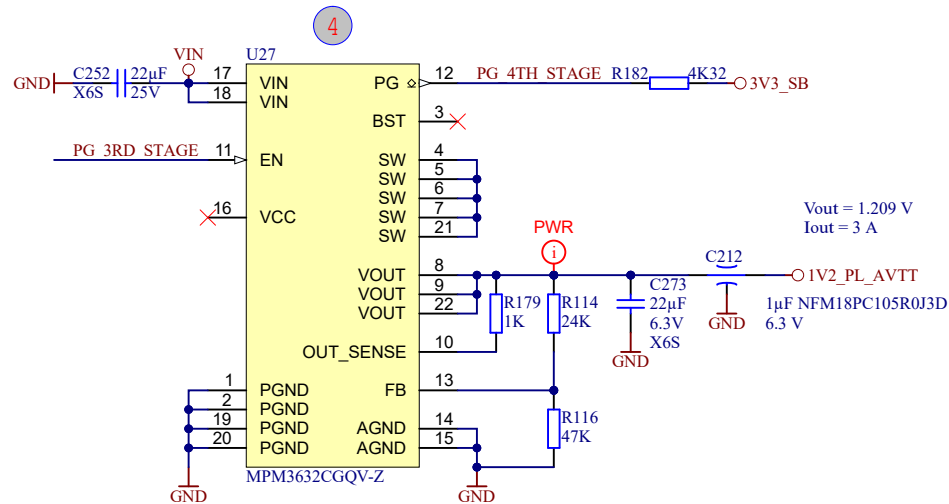
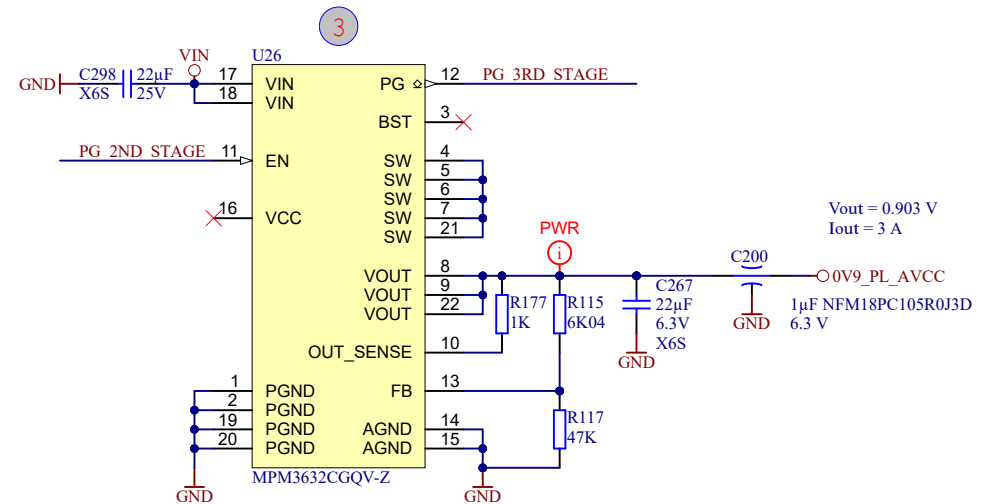
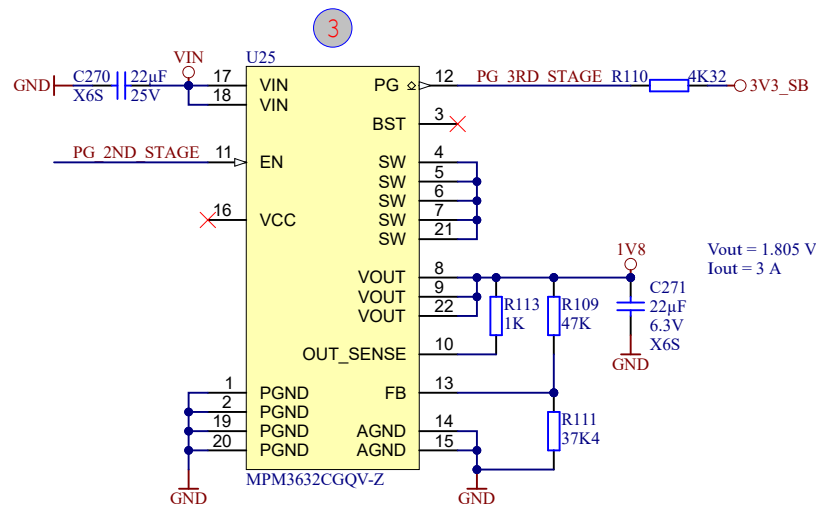
Title: TE0861 – USB-PHY		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 30 of 35
Filename: USB-PHY_SchDoc		

Required VCCINT	R100	R102	Calculated VCCINT	Speedgrade*	Current
0.85 V	5.6 kOhm	8.06 kOhm	0.847 V	-1 / -2	30 A
0.90 V	6.49 kOhm	8.06 kOhm	0.903 V	-3	30 A

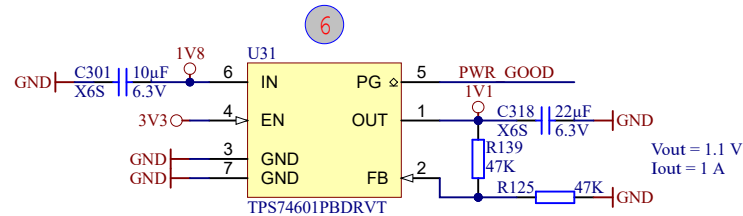
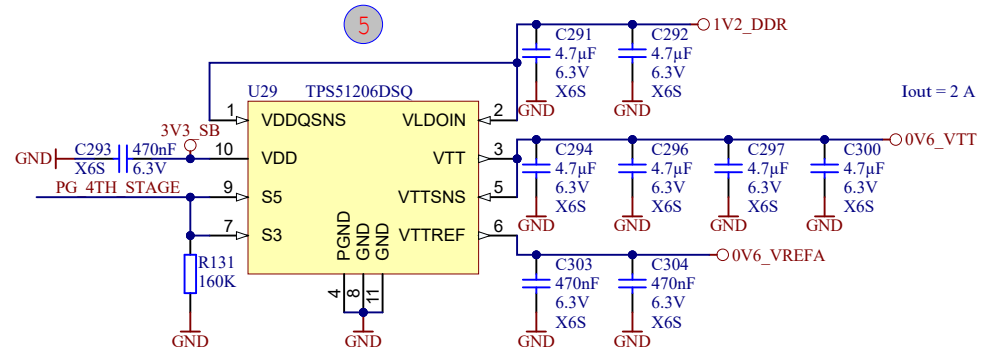
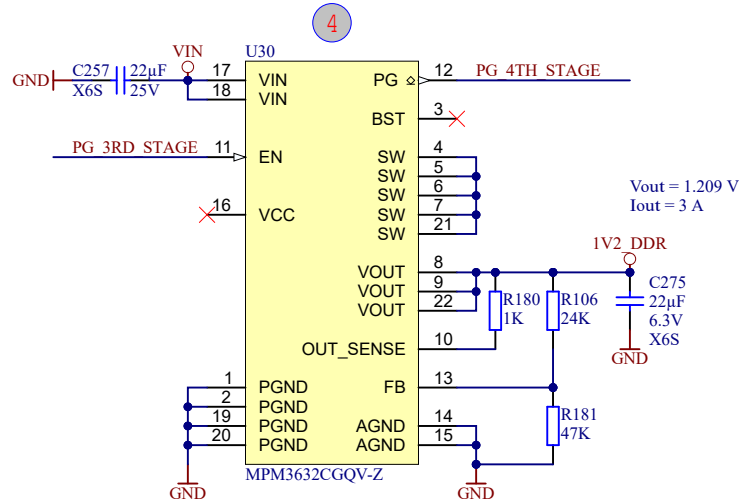
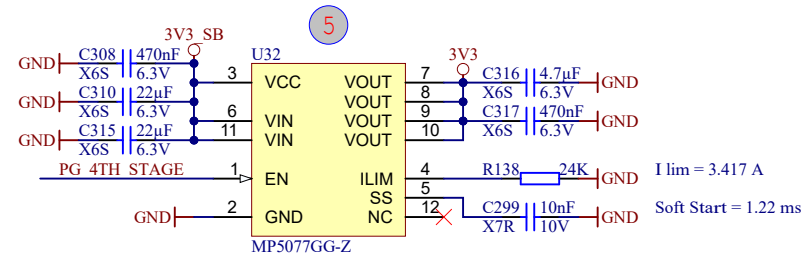
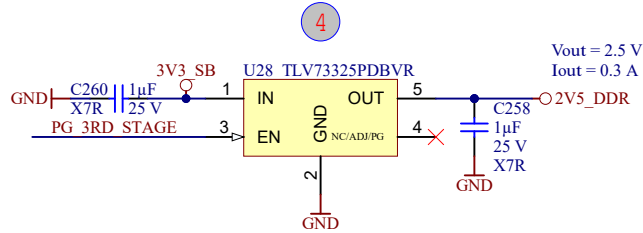
* Low Power Options are not supported.



Title: TE0861 – POWER 1		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 32 of 35
Filename: POWER_1.SchDoc		



Title: TE0861 – POWER 2		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 33 of 35
Filename: POWER_2.SchDoc		



Title: TE0861 – POWER 3		
A4	Number: TE0861 6BE59QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 34 of 35
Filename: POWER_3.SchDoc		

