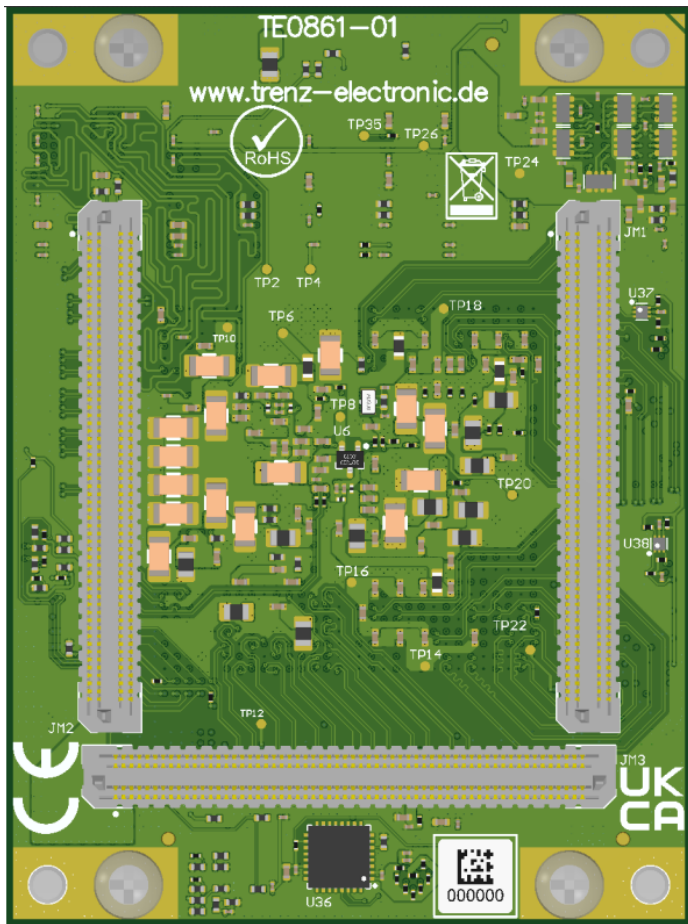
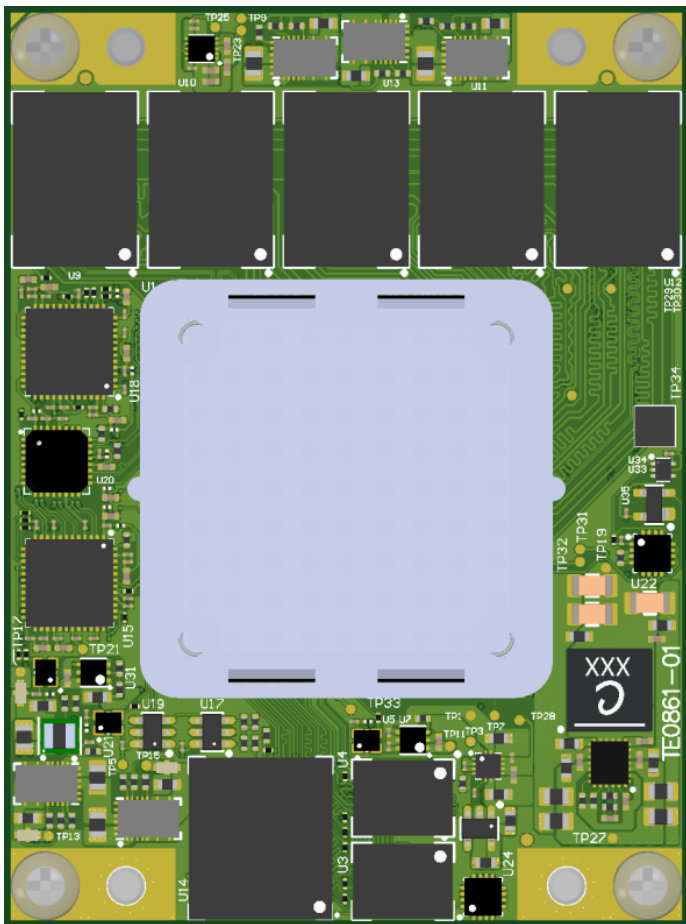




Regarding the usage of our schematics and alike documentation for Trenz module TE0861.

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 6BE69QA	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	Rev. 01
		Date: 20.11.2025	Page 2 of 35
		Filename: Revision_Changes.SchDoc	

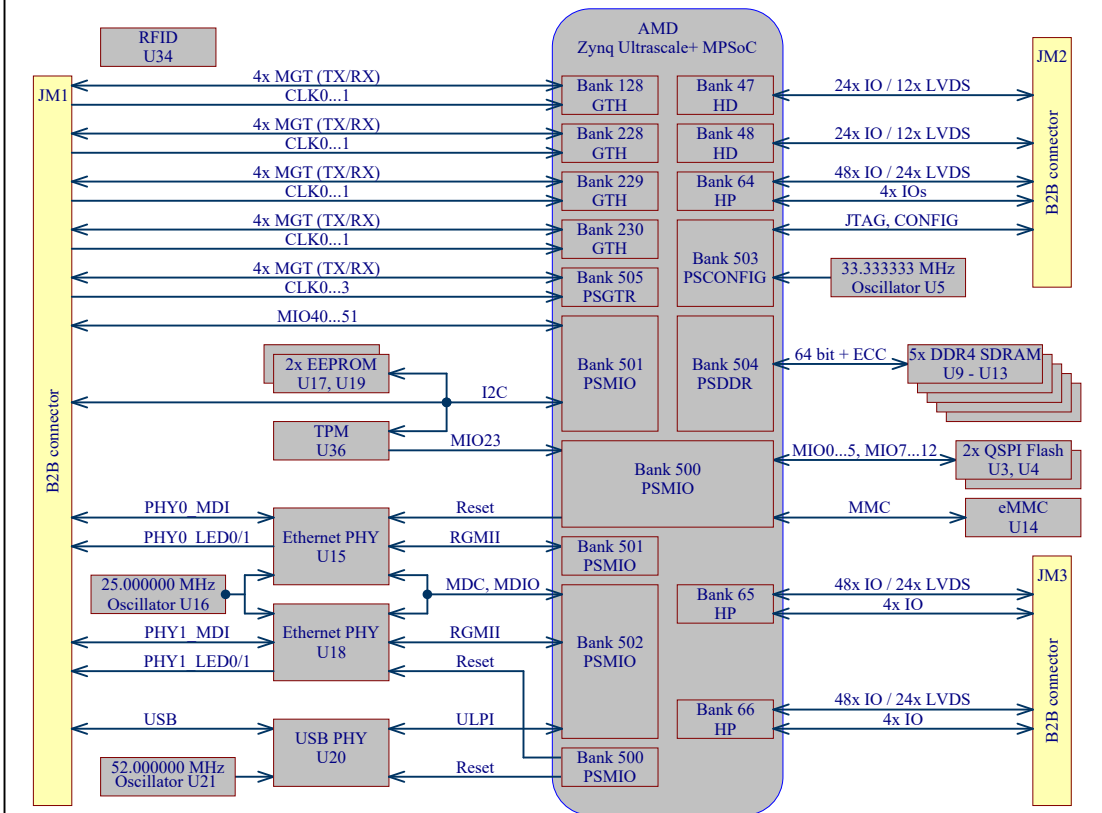
1

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
6BE69QA**

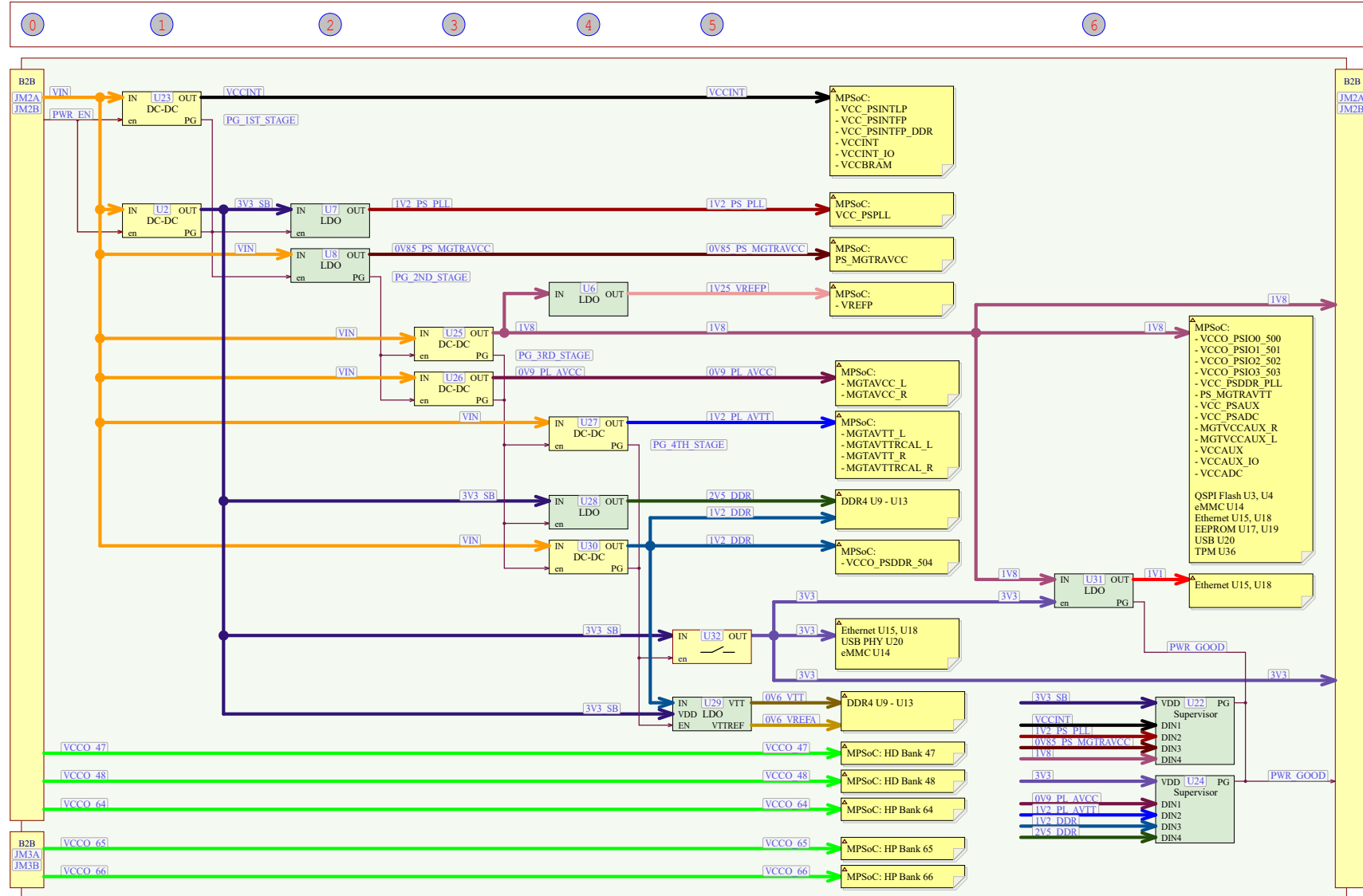
Rev. **01**

Date: **20.11.2025** Copyright: **Trenz Electronic GmbH**

Page **3** of **35**

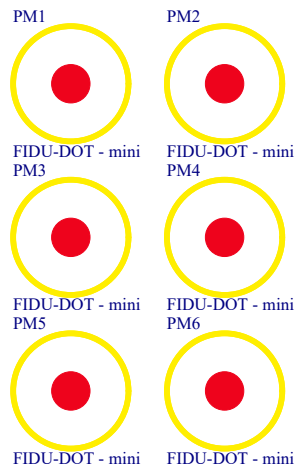
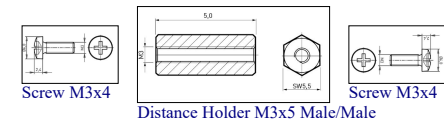
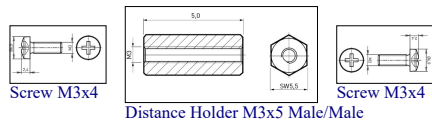
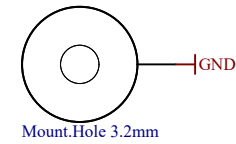
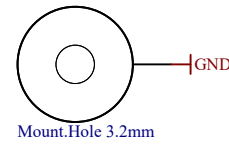
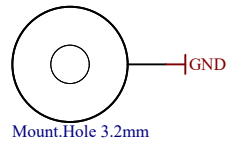
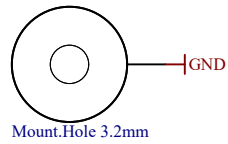
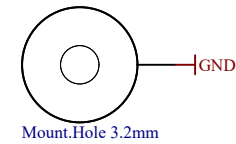
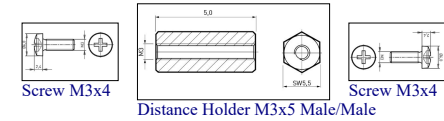
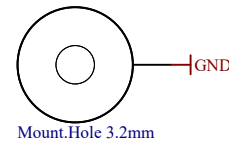
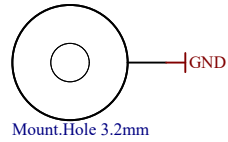
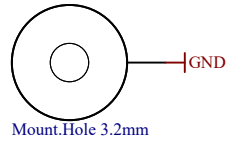
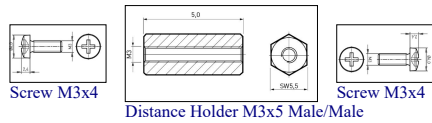
Filename: **TE0861-Overview.SchDoc**

Power Supply and Power Sequencing



Title: TE0861 – POWER Overview		
A3	Number: TE0861 6BE69QA	Rev. 01
Datum: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 4 of 35
Filename: POWER_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: 6BE69QA
Created by: ED
Modified by: ED
Modified at: 2026-04-29



Title: TE0861

A4

Number: TE0861
6BE69QA

Rev. 01

Date: 20.11.2025

Copyright: Trenz Electronic GmbH

Page 5 of 35

Filename: TE0861.SchDoc

A

B

C

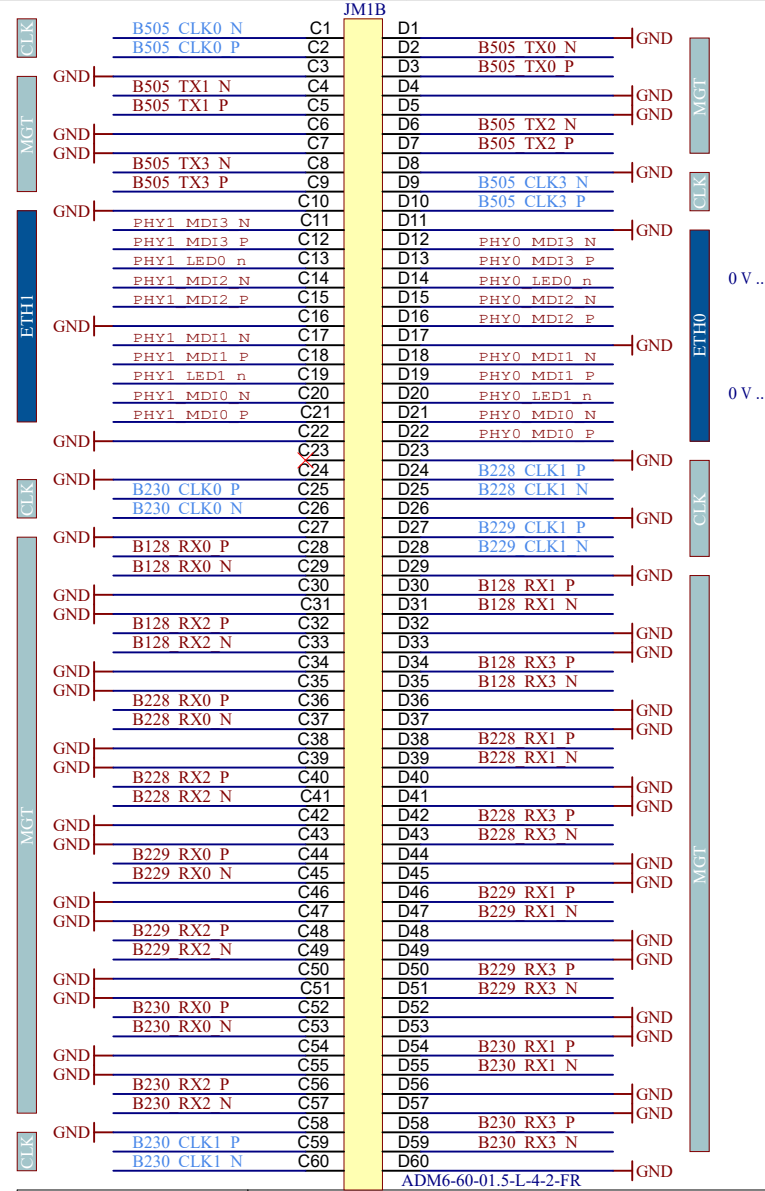
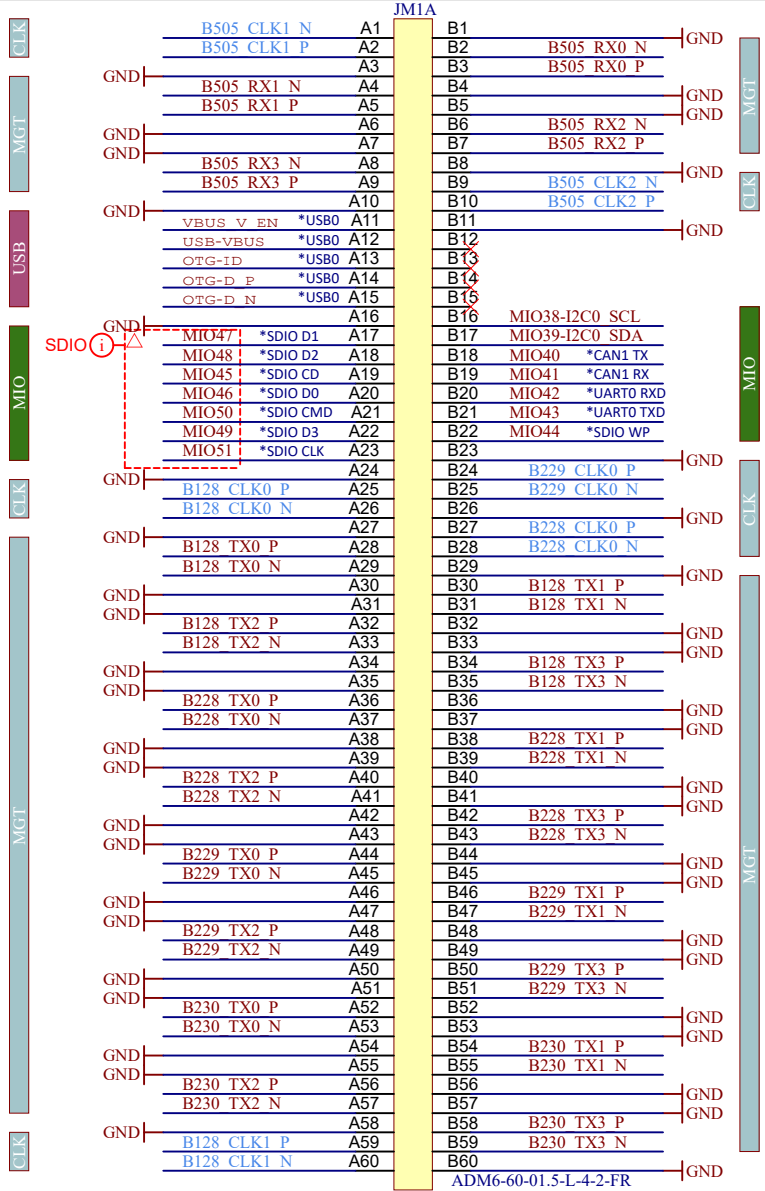
D

1

2

3

4



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 JM1**

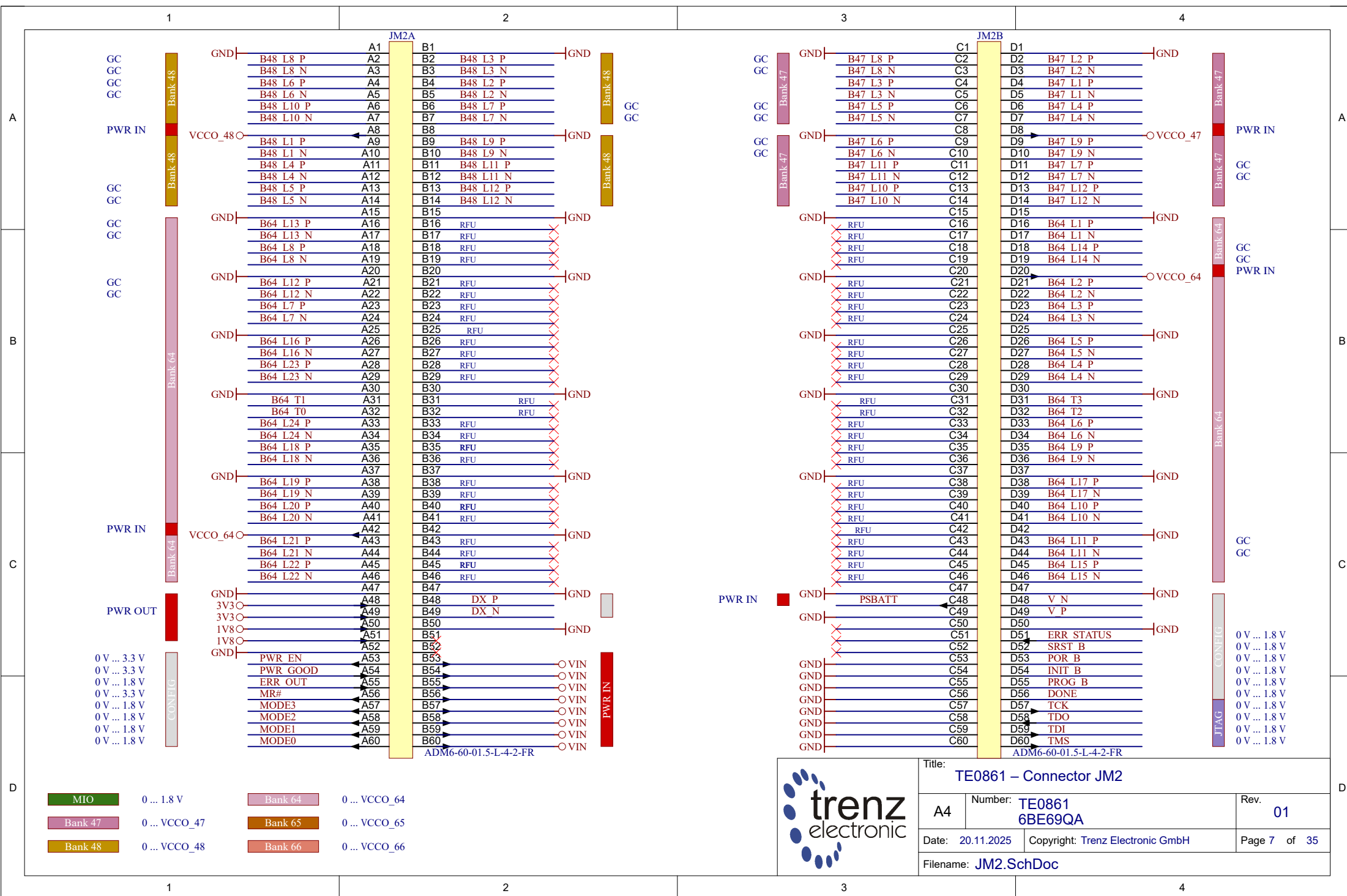
A4	Number: TE0861 6BE69QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 6 of 35
Filename: JM1.SchDoc		

1

2

3

4



1

2

3

4

A

A

B

B

C

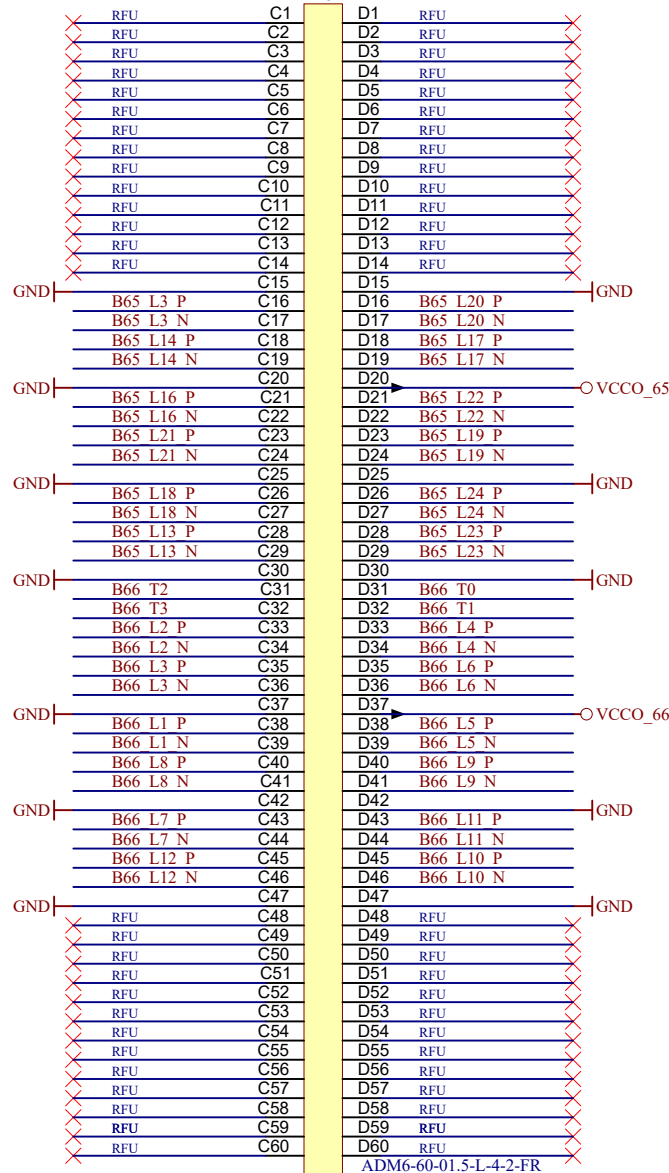
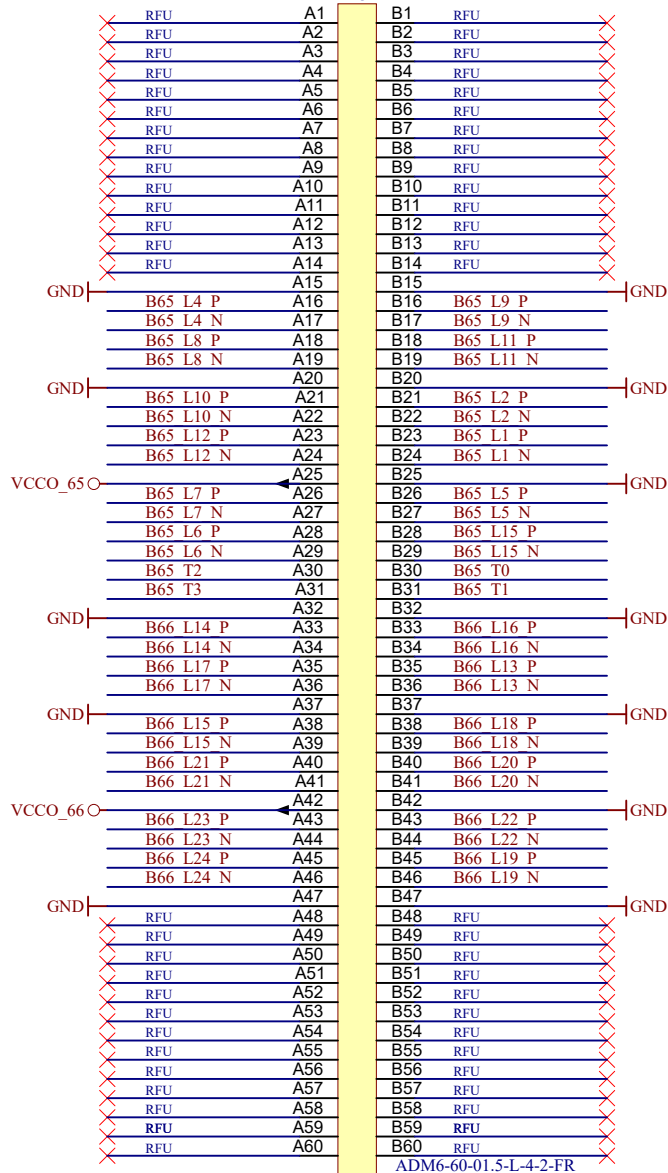
C

D

D

JM3A

JM3B



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

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 6BE69QA	Rev. 01	
Date: 20.11.2025	Copyright: Trenz Electronic GmbH		Page 8 of 35
Filename: JM3.SchDoc			

1

2

3

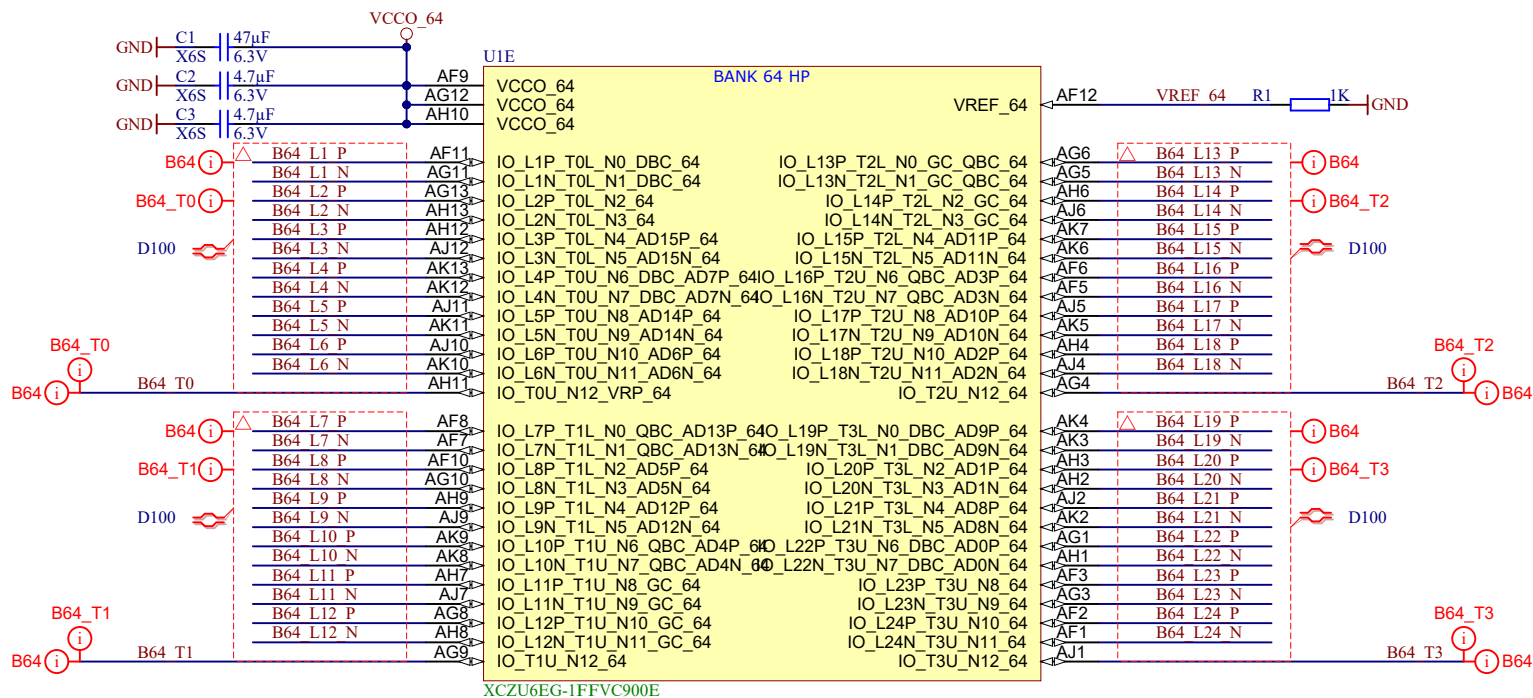
4

1

2

3

4



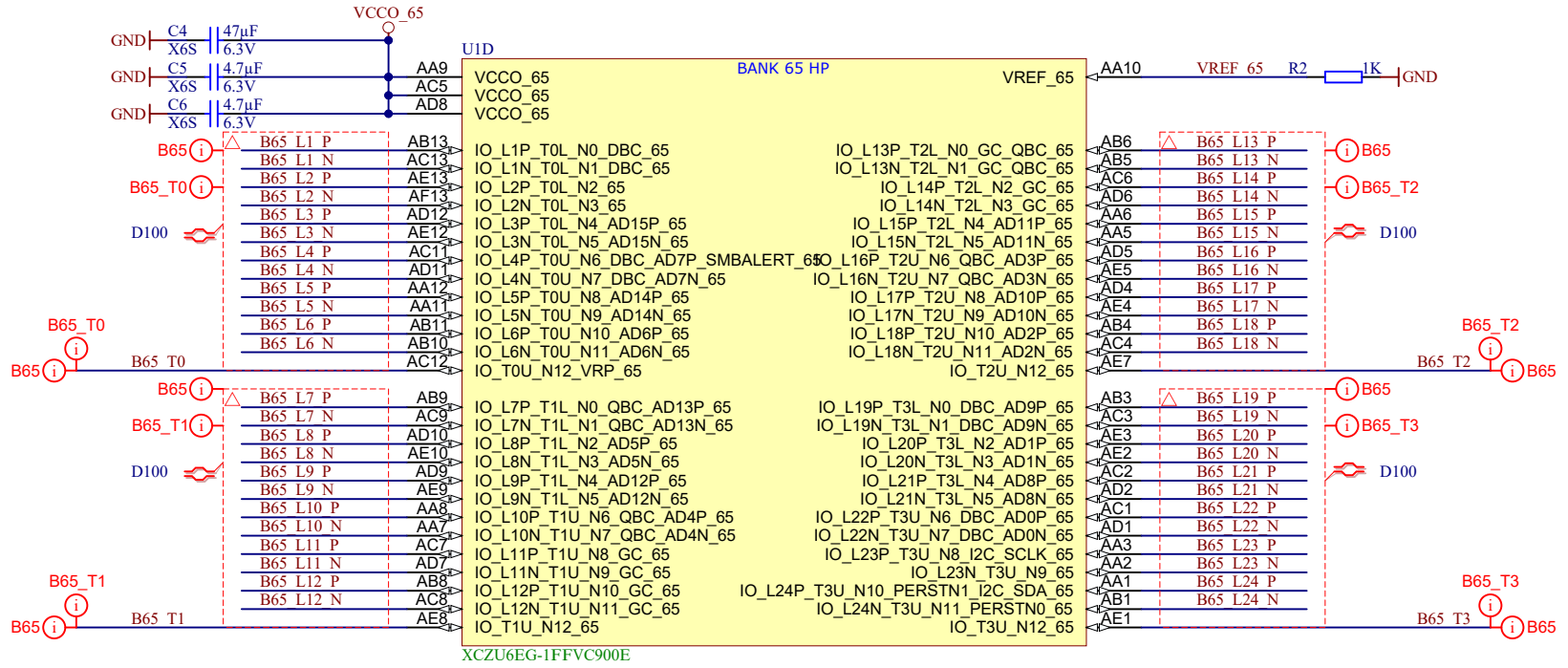
Title: TE0861 – B64		
A4	Number: TE0861 6BE69QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 9 of 35
Filename: B64.SchDoc		

1

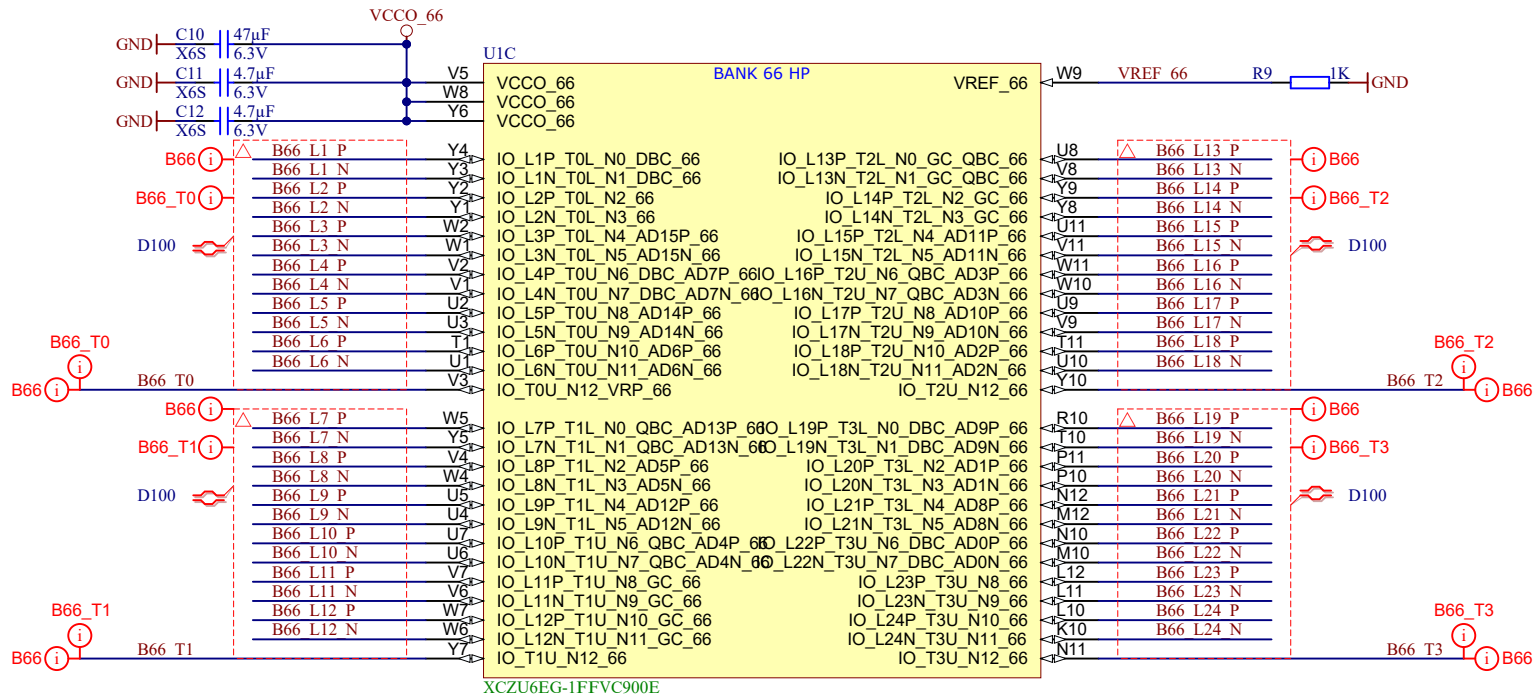
2

3

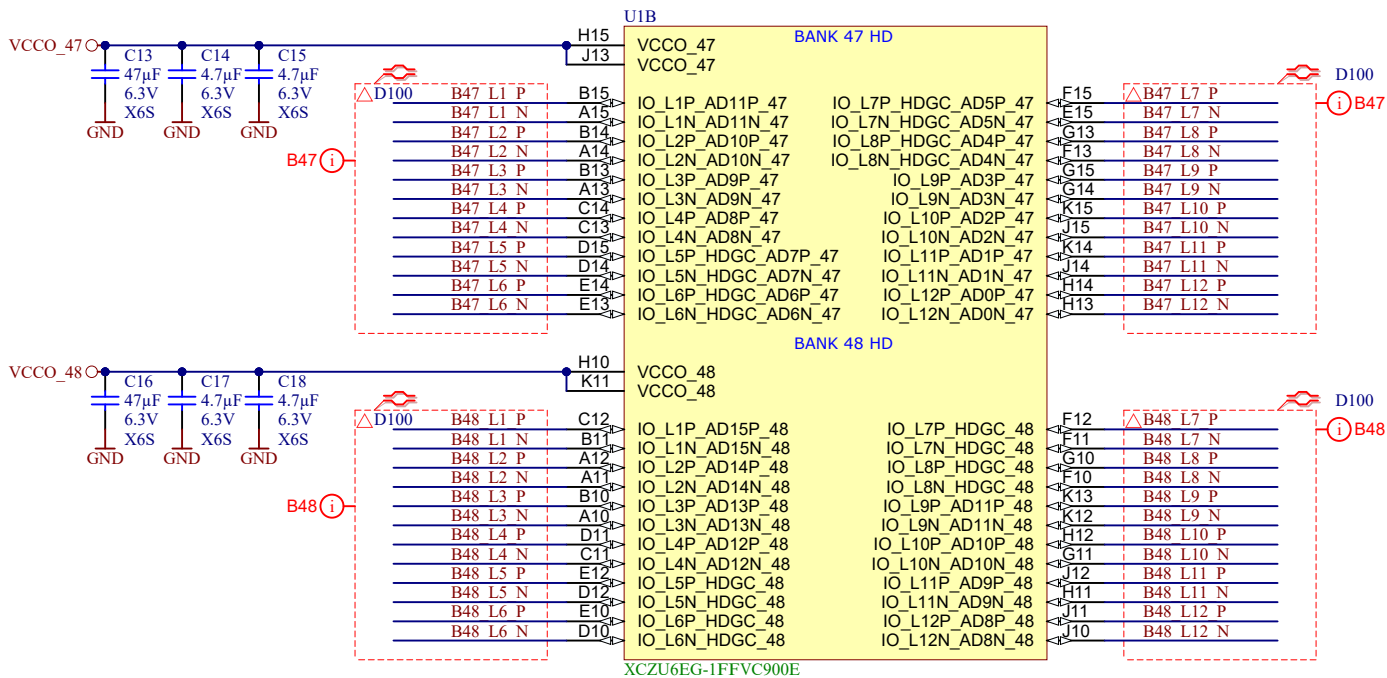
4



Title: TE0861 – B65		
A4	Number: TE0861 6BE69QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 10 of 35
Filename: B65.SchDoc		



		Title: TE0861 – B66	
		A4 Number: TE0861 6BE69QA	Rev. 01
Date: 20.11.2025		Copyright: Trenz Electronic GmbH	
Filename: B66.SchDoc		Page 11 of 35	



1

2

3

4

A

A

B

B

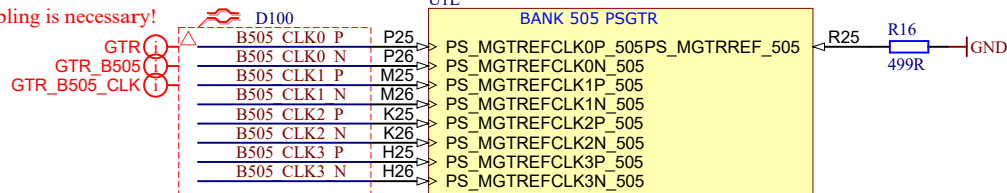
C

C

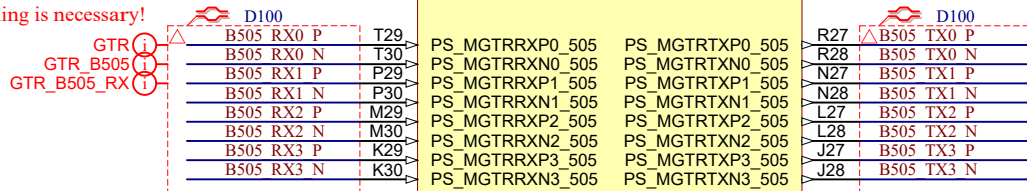
D

D

AC coupling is necessary!



AC coupling is necessary!



AC coupling is necessary!



UIL

BANK 505 PSGTR

R25 R16
499R GND

XCZU6EG-1FFVC900E



Title:

TE0861 – B_PS_GT

A4

Number:

TE0861
6BE69QA

Rev.

01

Date: 20.11.2025

Copyright: Trenz Electronic GmbH

Page 16 of 35

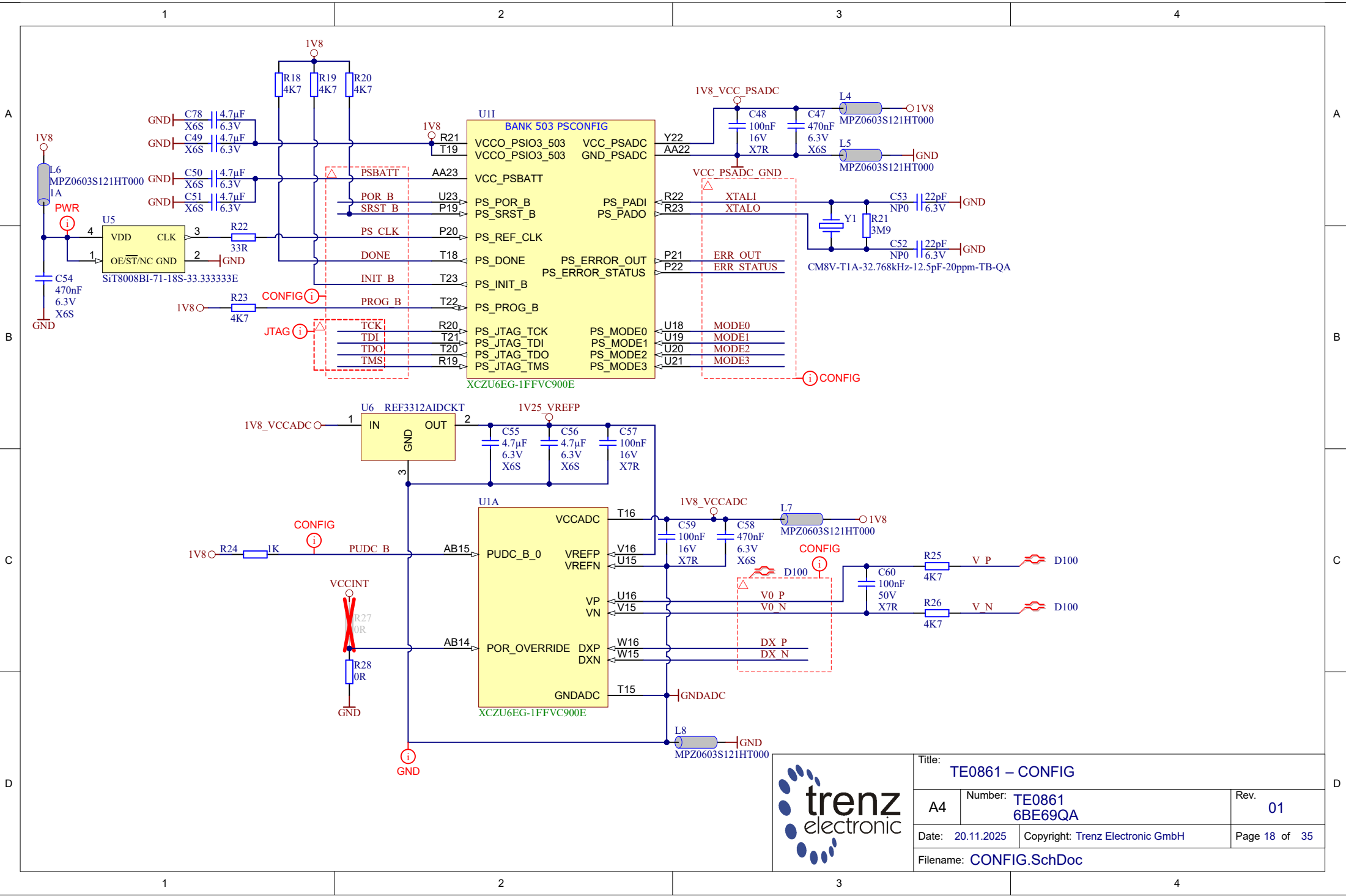
Filename: B_PS_GT.SchDoc

1

2

3

4



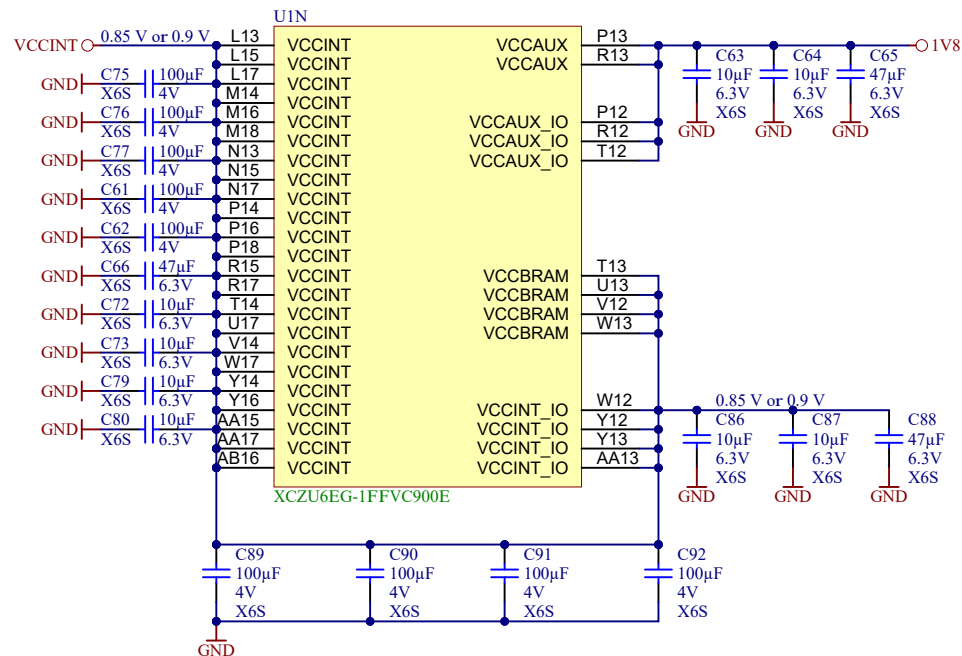
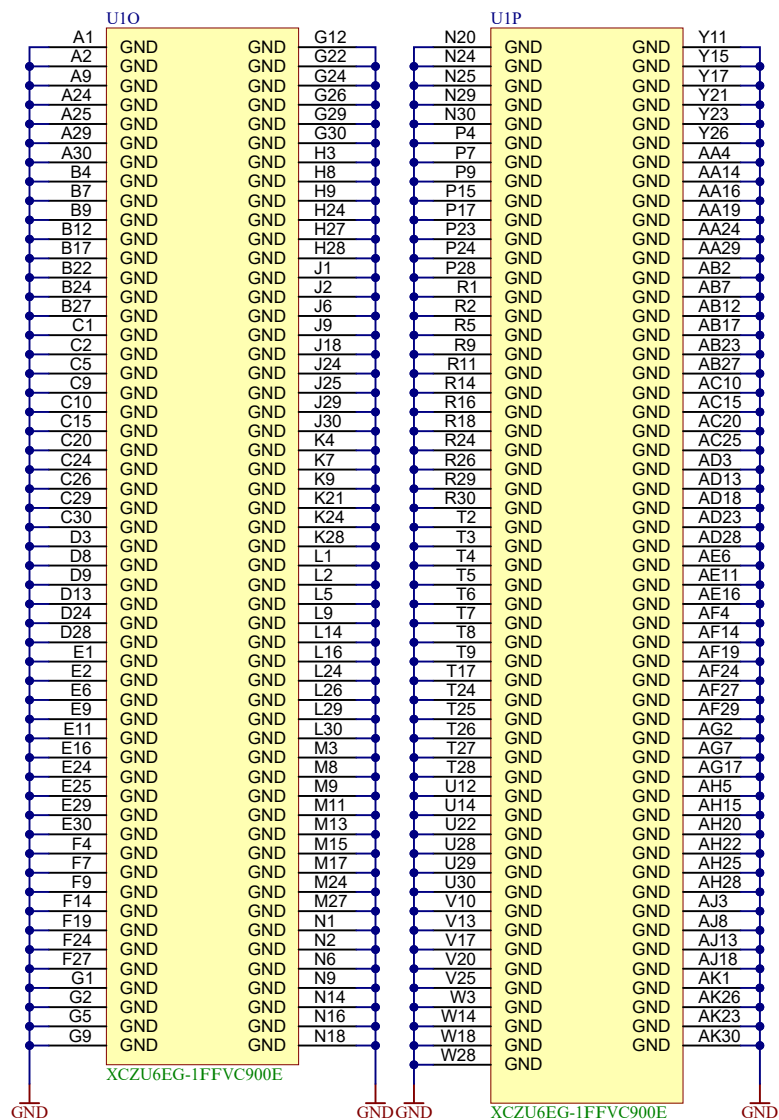
Title: TE0861 – CONFIG		
A4	Number: TE0861 6BE69QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 18 of 35
Filename: CONFIG.SchDoc		

1

2

3

4



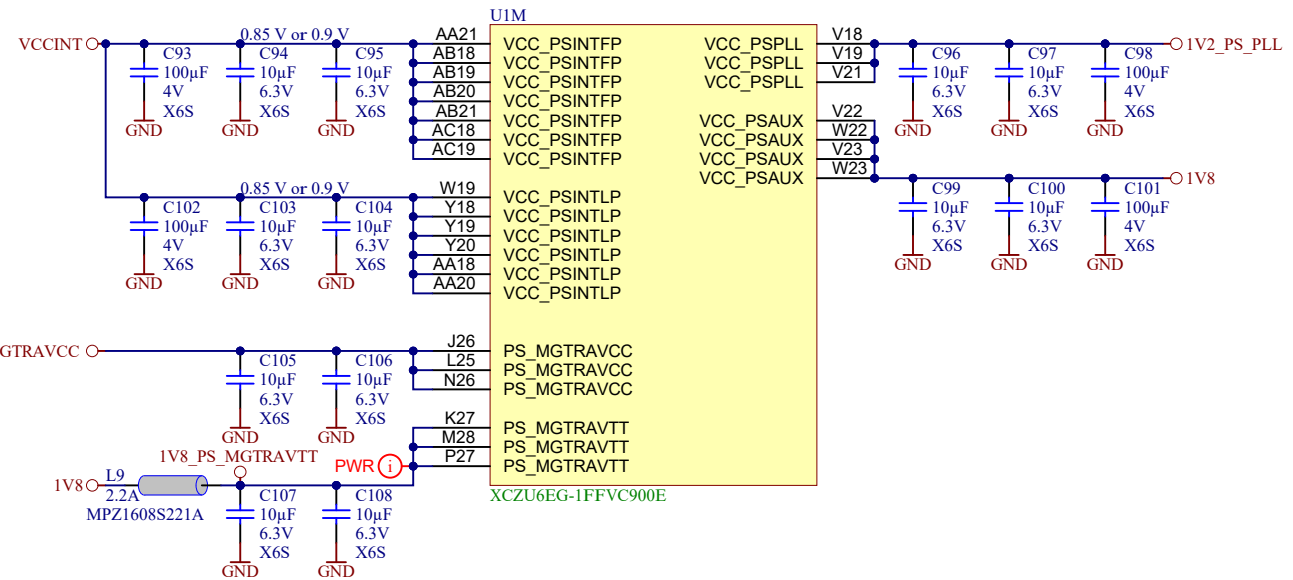
Title: TE0861 – ZU_POWER		
A4	Number: TE0861 6BE69QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 19 of 35
Filename: ZU_POWER.SchDoc		

1

2

3

4



		Title: TE0861 - ZU_PS_POWER	
		A4	Number: TE0861 6BE69QA
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

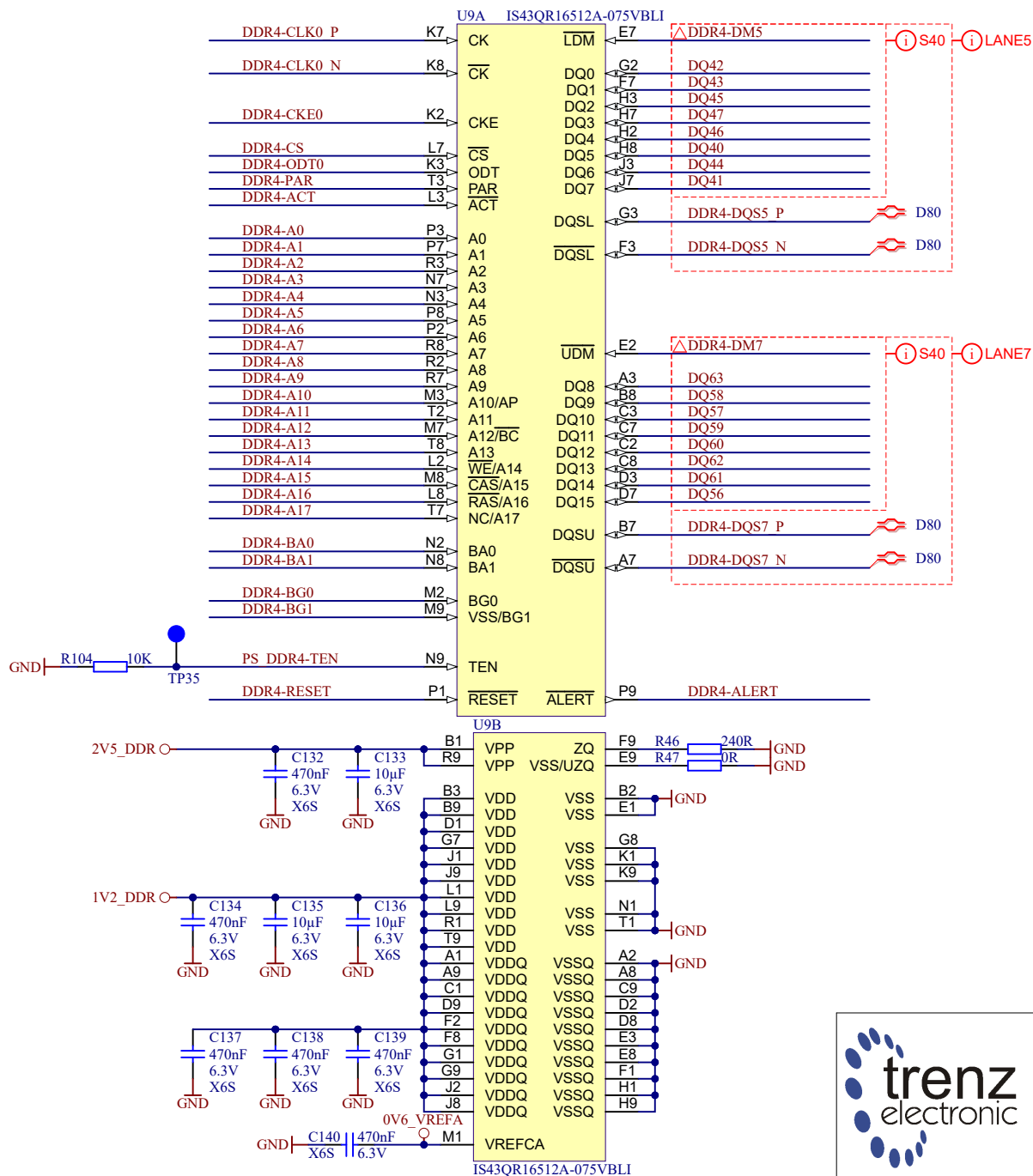
B

C

C

D

D



Title: TE0861 – DDR4-RAM_1		
A4	Number: TE0861 6BE69QA	Rev. 01
Date: 17.12.2025	Copyright: Trenz Electronic GmbH	Page 21 of 35
Filename: DDR4-RAM_1.SchDoc		

1

2

3

4

1

2

3

4

A

A

B

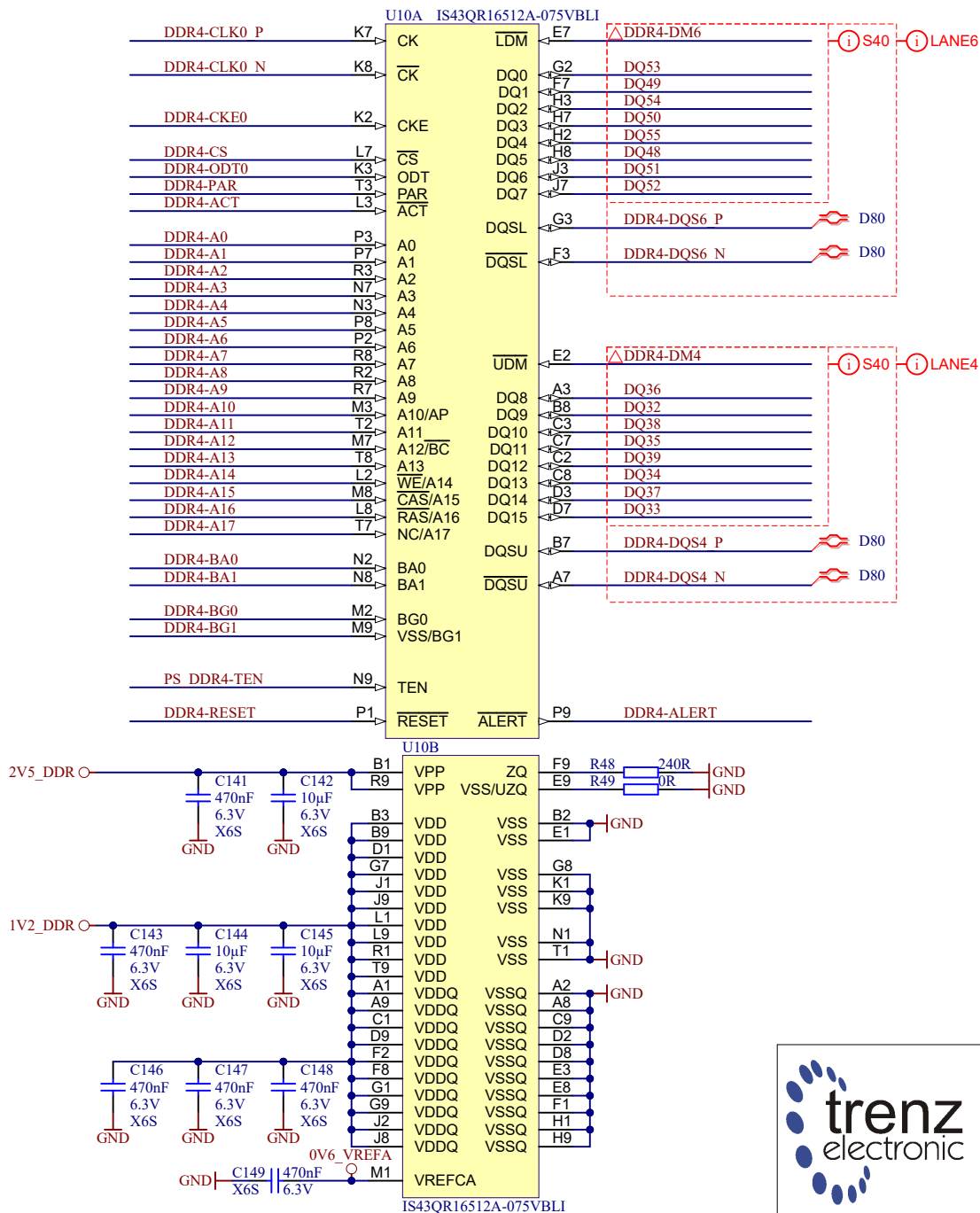
B

C

C

D

D



Title: TE0861 – DDR4-RAM_2		
A4	Number: TE0861 6BE69QA	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

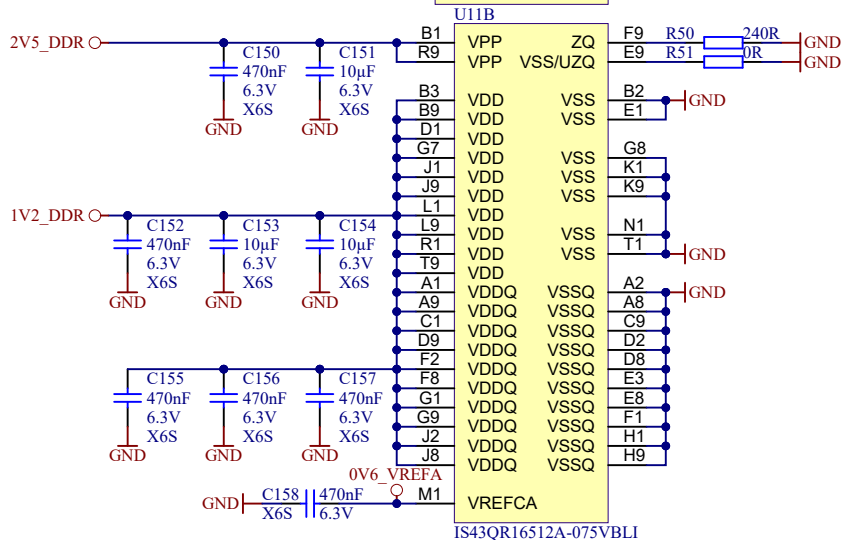
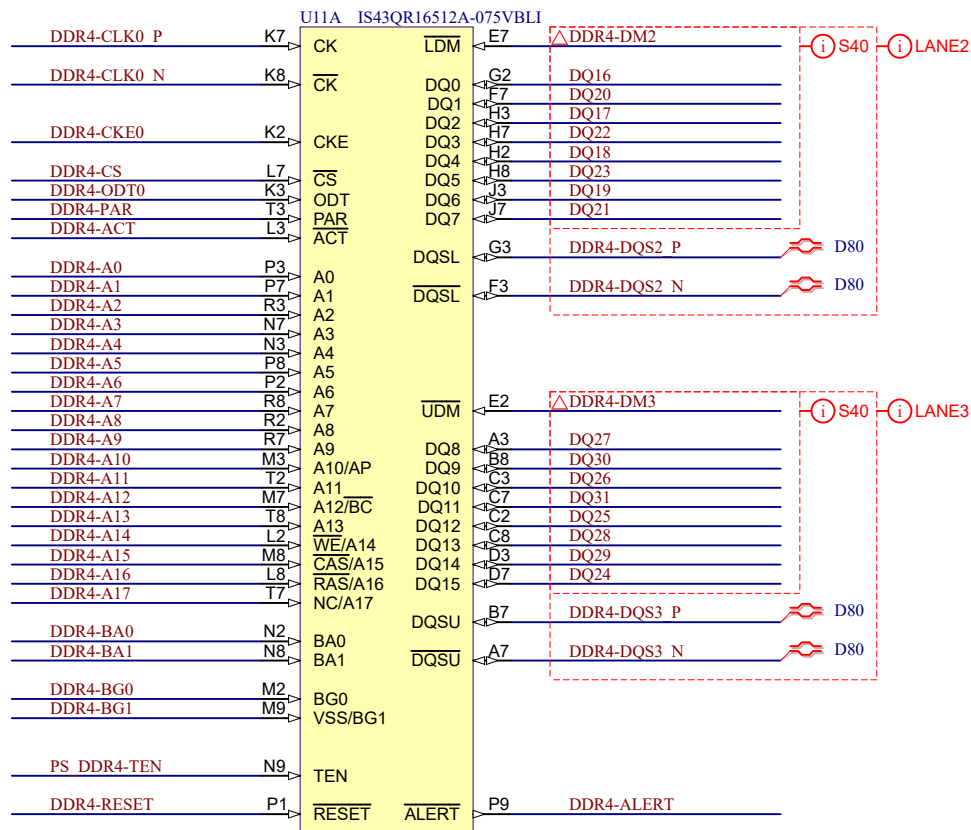
B

C

C

D

D



Title: TE0861 – DDR4-RAM_3		
A4	Number: TE0861 6BE69QA	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

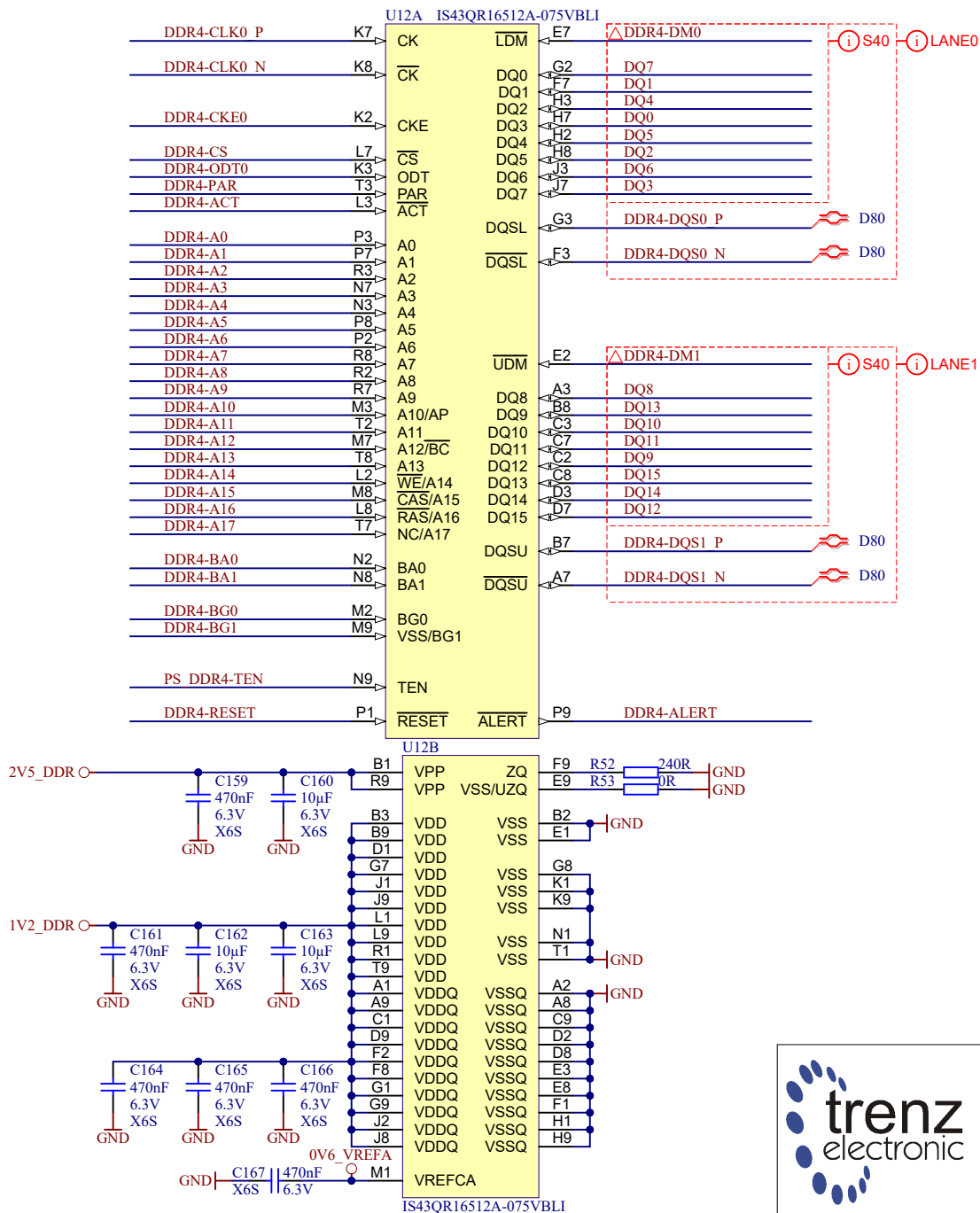
B

C

C

D

D



Title: TE0861 – DDR4-RAM_4		
A4	Number: TE0861 6BE69QA	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

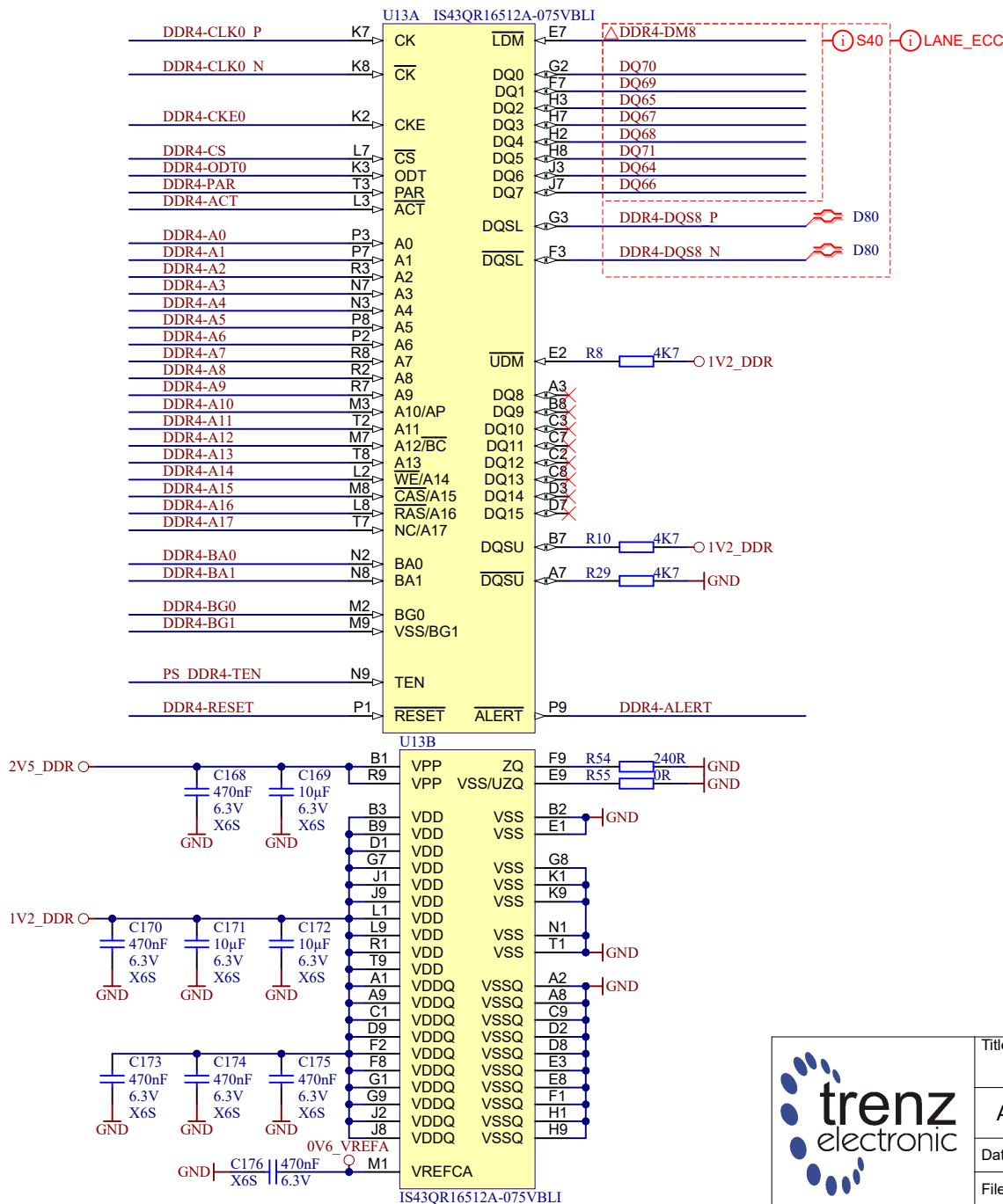
B

C

C

D

D



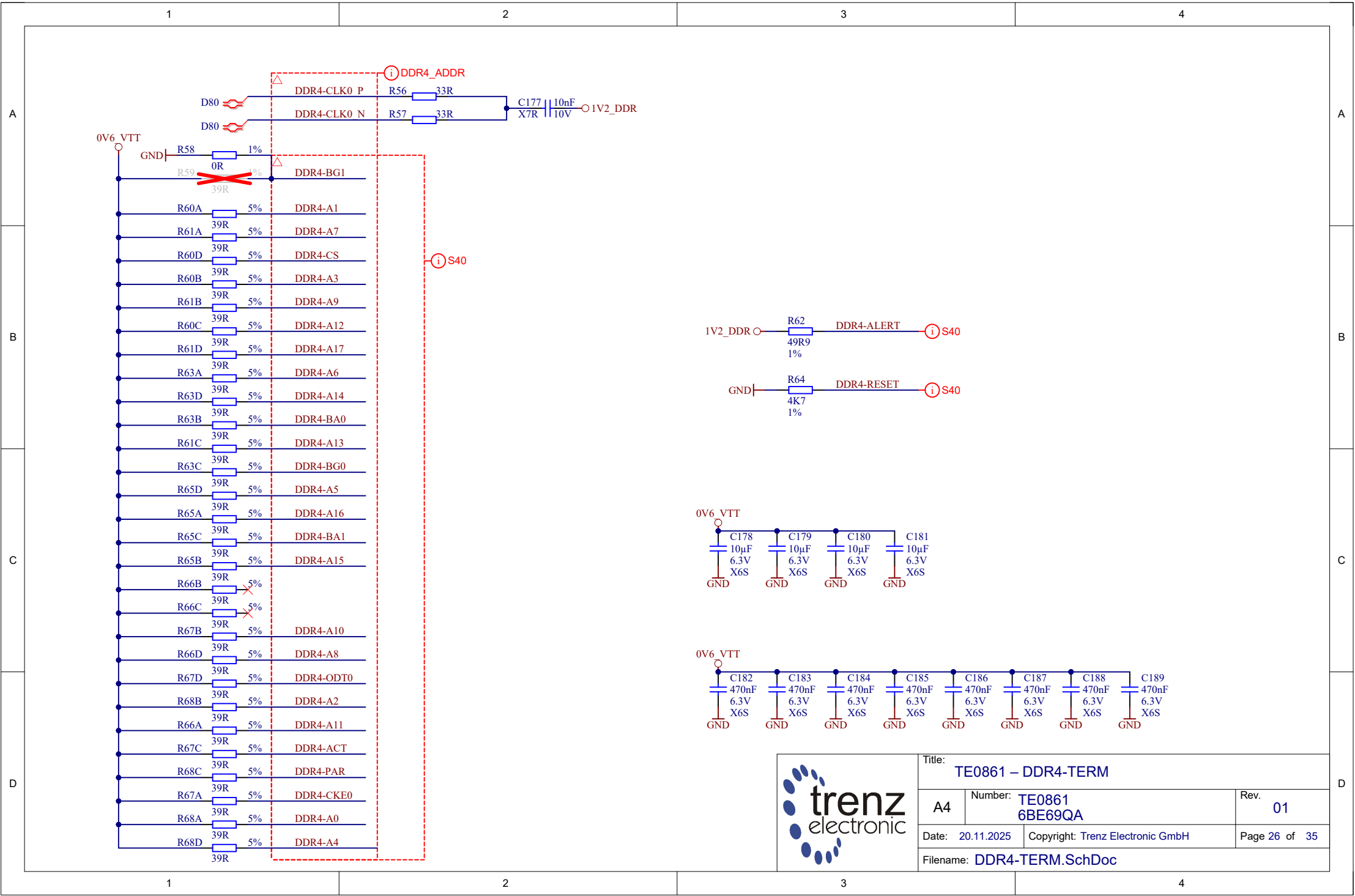
Title: TE0861 – DDR4-RAM_5		
A4	Number: TE0861 6BE69QA	Rev. 01
Date: 17.12.2025	Copyright: Trenz Electronic GmbH	Page 25 of 35
Filename: DDR4-RAM_5.SchDoc		

1

2

3

4



1

2

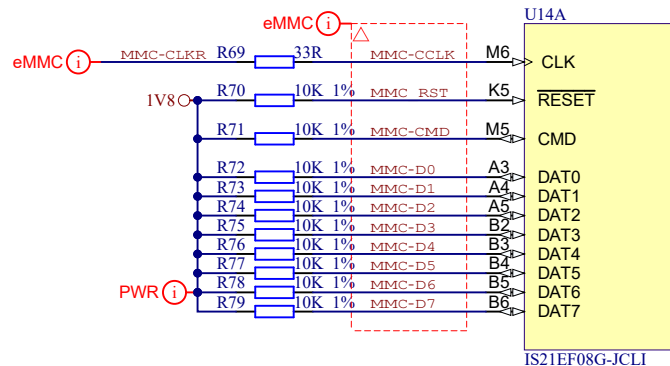
3

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



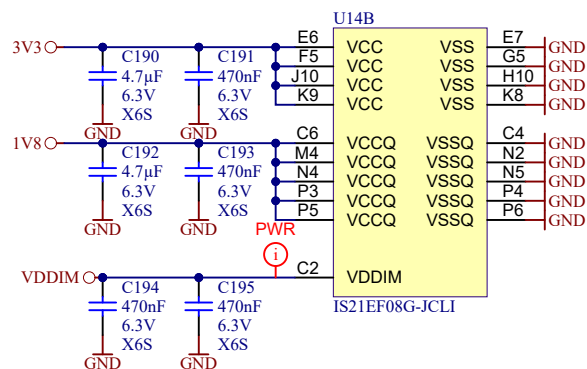
U14A

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
6BE69QA

Rev.

01

Date: 20.11.2025

Copyright: Trenz Electronic GmbH

Page 27 of 35

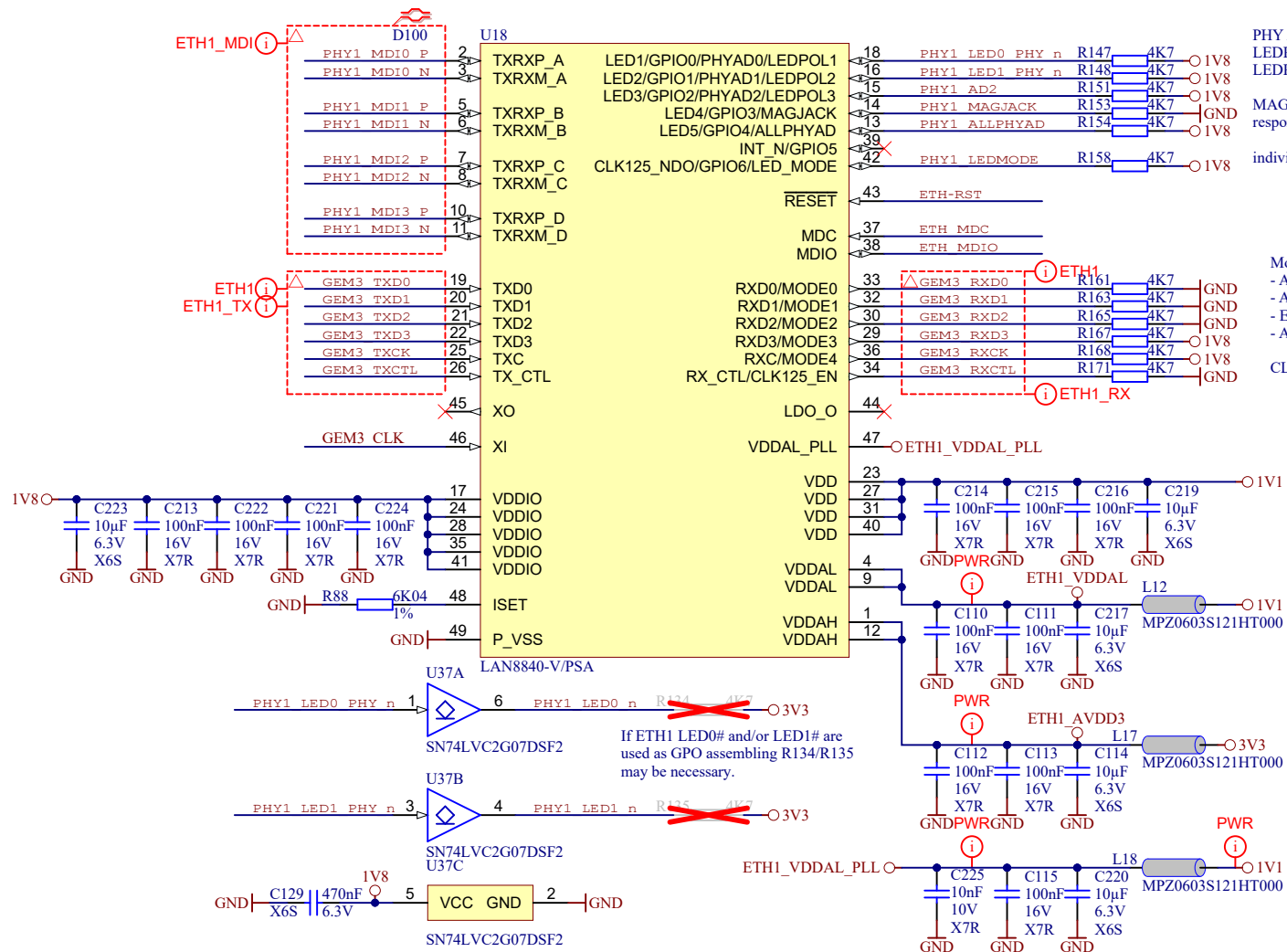
Filename: eMMC.SchDoc

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

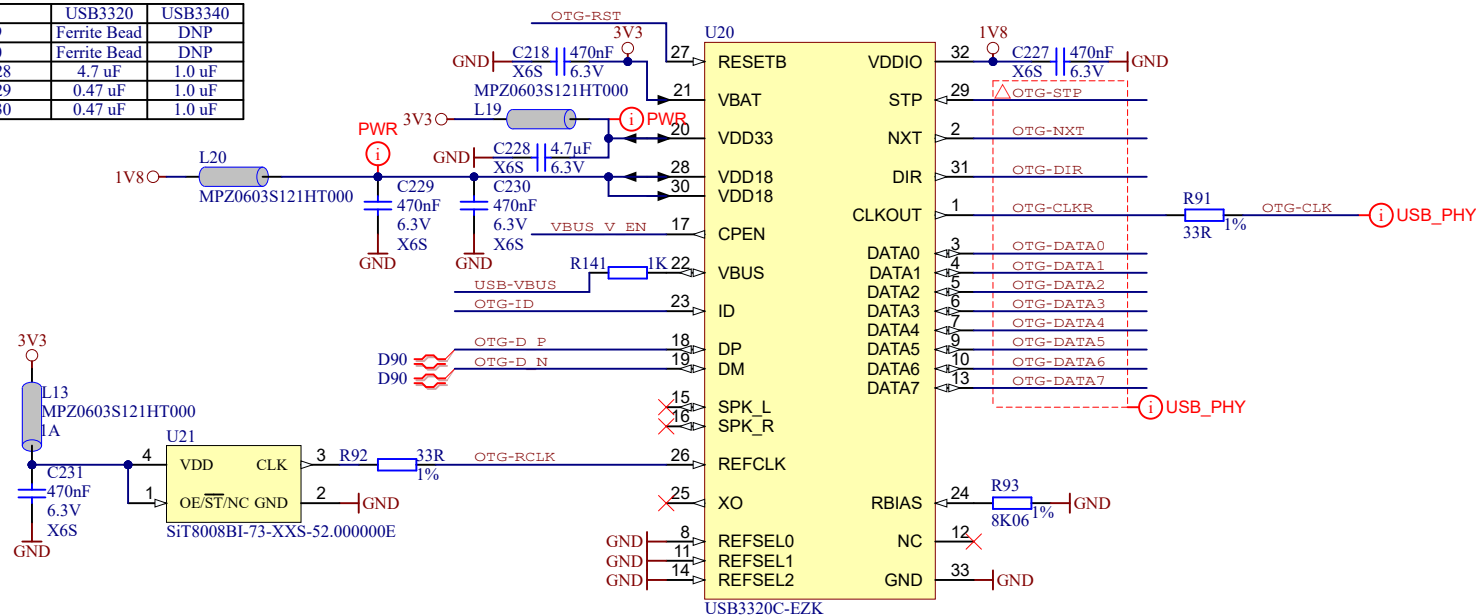
If ETH1 LED0# and/or LED1# are
used as GPO assembling R134/R135
may be necessary.



Title: TE0861 – ETH1-PHY		
A4	Number: TE0861 6BE69QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 29 of 35
Filename: ETH1-PHY.SchDoc		

EEPROM for MAC
Slave address: 1010001

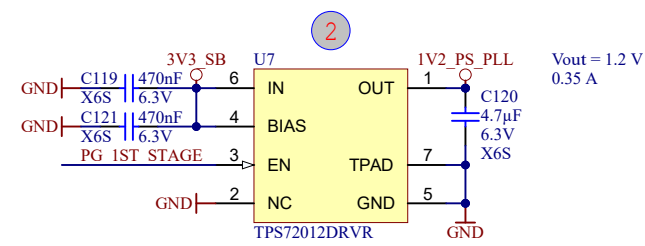
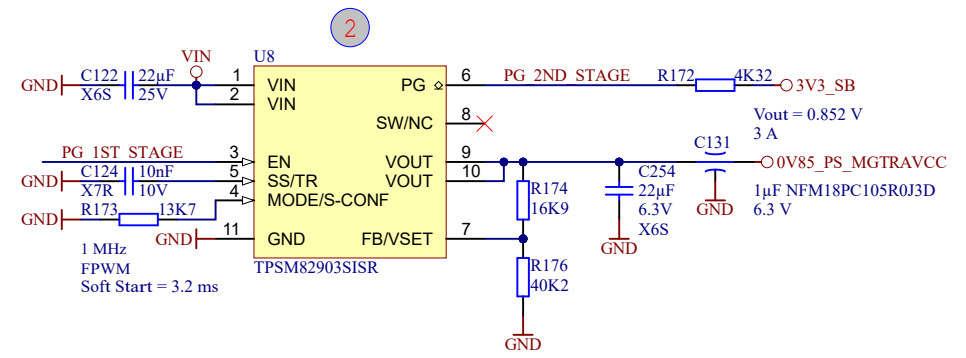
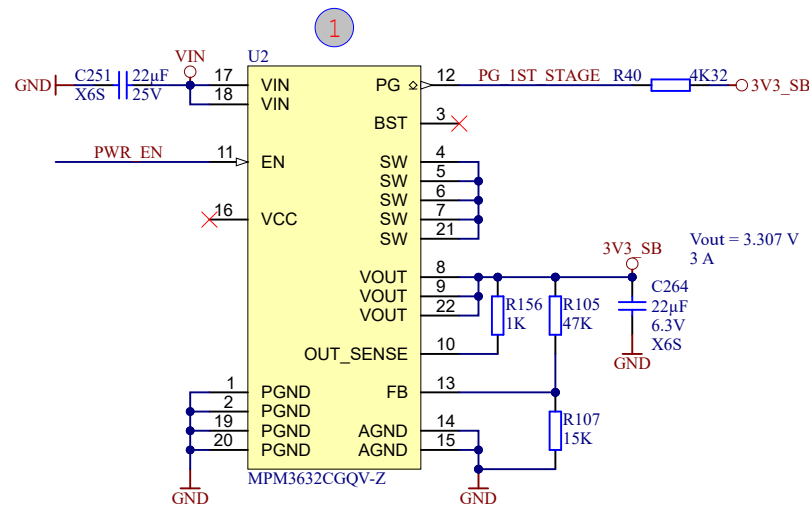
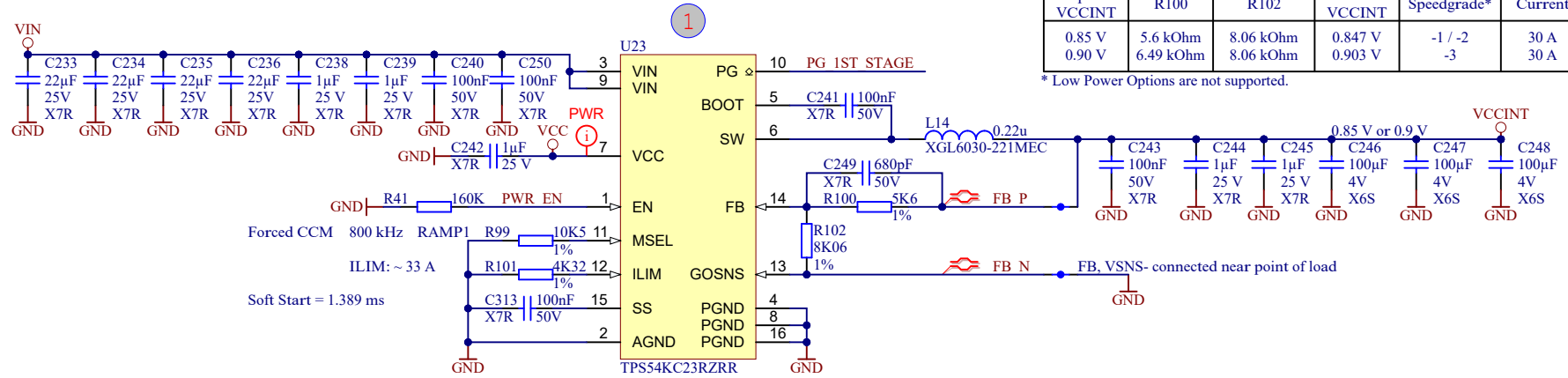
	USB3320	USB3340
L19	Ferrite Bead	DNP
L20	Ferrite Bead	DNP
C228	4.7 uF	1.0 uF
C229	0.47 uF	1.0 uF
C230	0.47 uF	1.0 uF



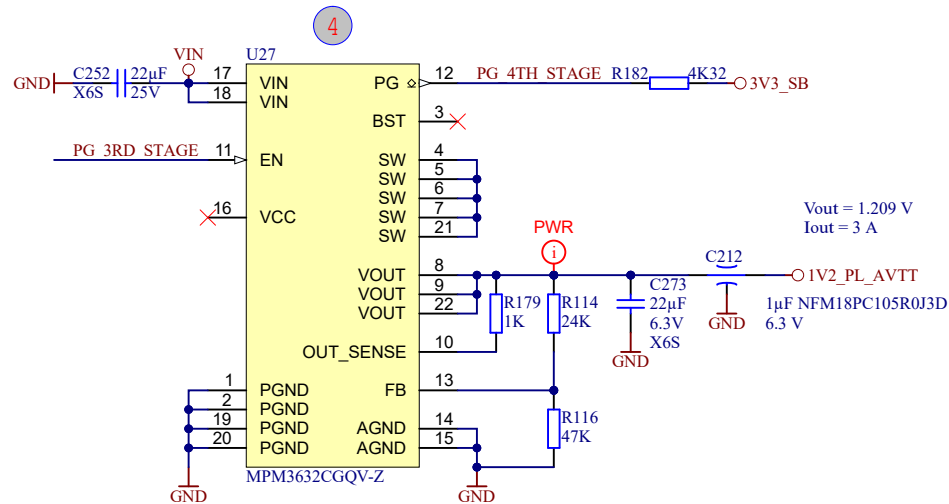
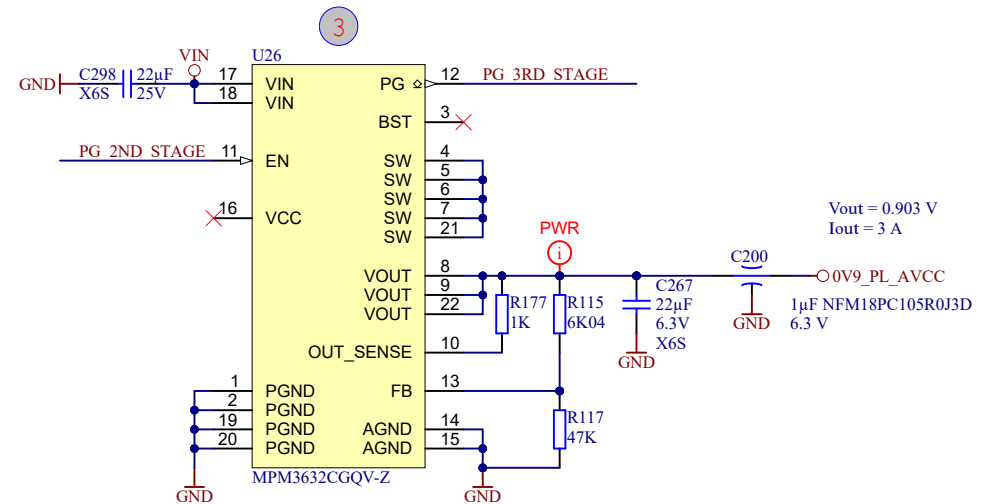
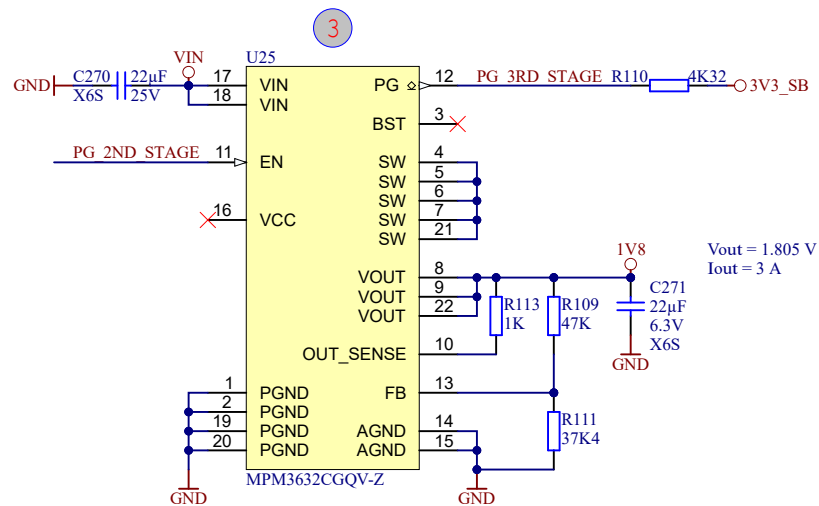
		Title: TE0861 – USB-PHY	
		A4 Number: TE0861 6BE69QA	Rev. 01
Date: 20.11.2025		Copyright: Trenz Electronic GmbH	
Filename: USB-PHY.SchDoc		Page 30 of 35	

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

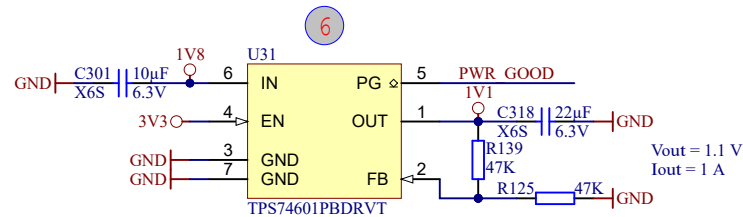
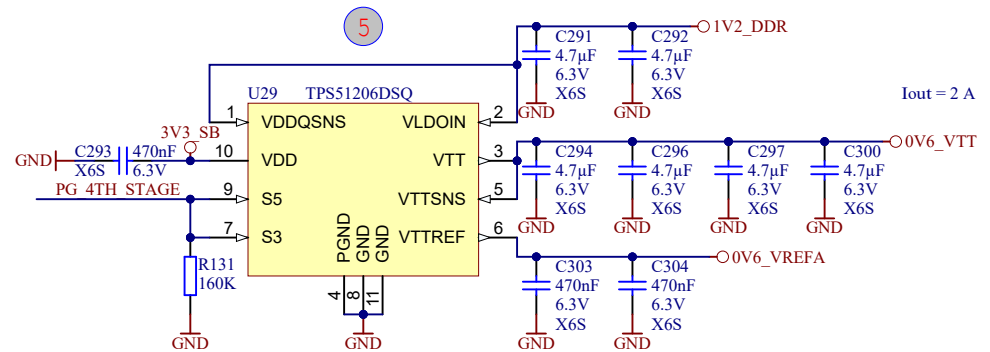
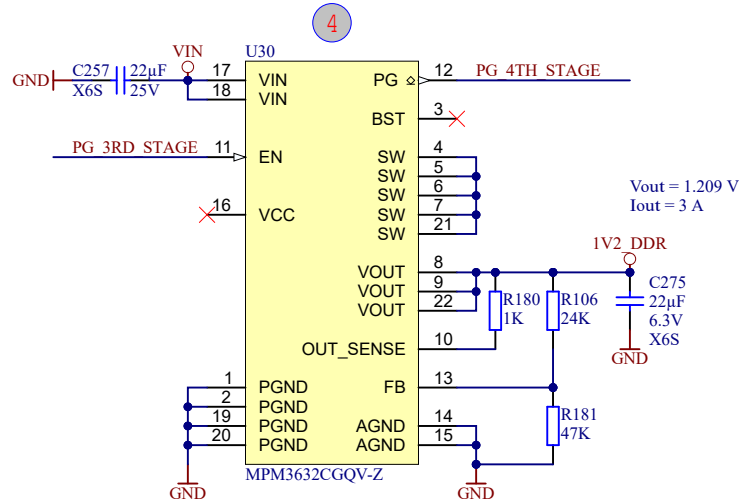
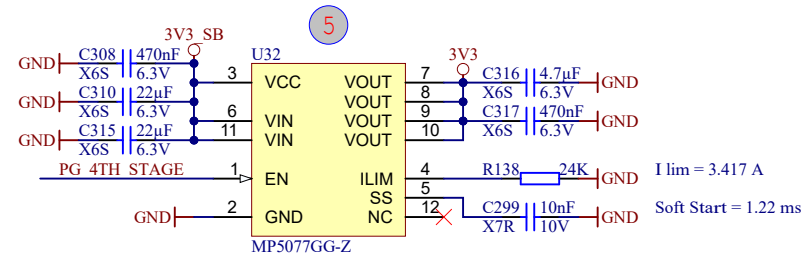
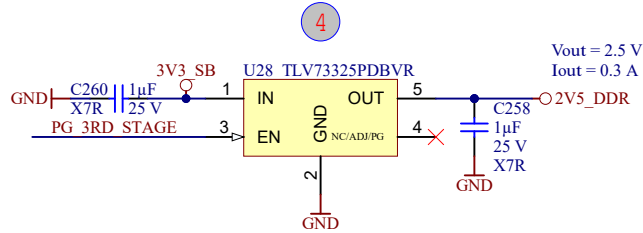
* Low Power Options are not supported.



Title: TE0861 – POWER 1		
A4	Number: TE0861 6BE69QA	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 6BE69QA	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 6BE69QA	Rev. 01
Date: 20.11.2025	Copyright: Trenz Electronic GmbH	Page 34 of 35
Filename: POWER_3.SchDoc		

