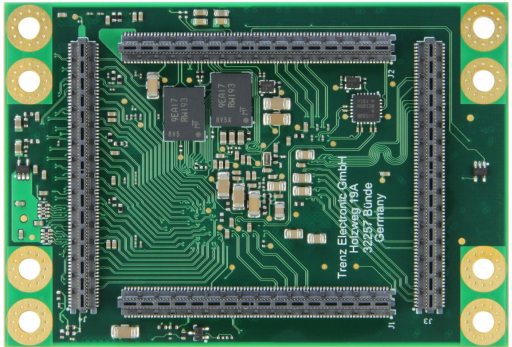
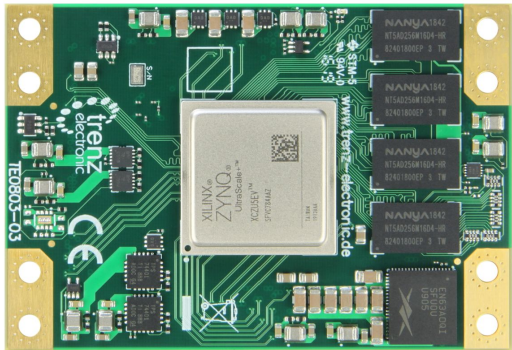
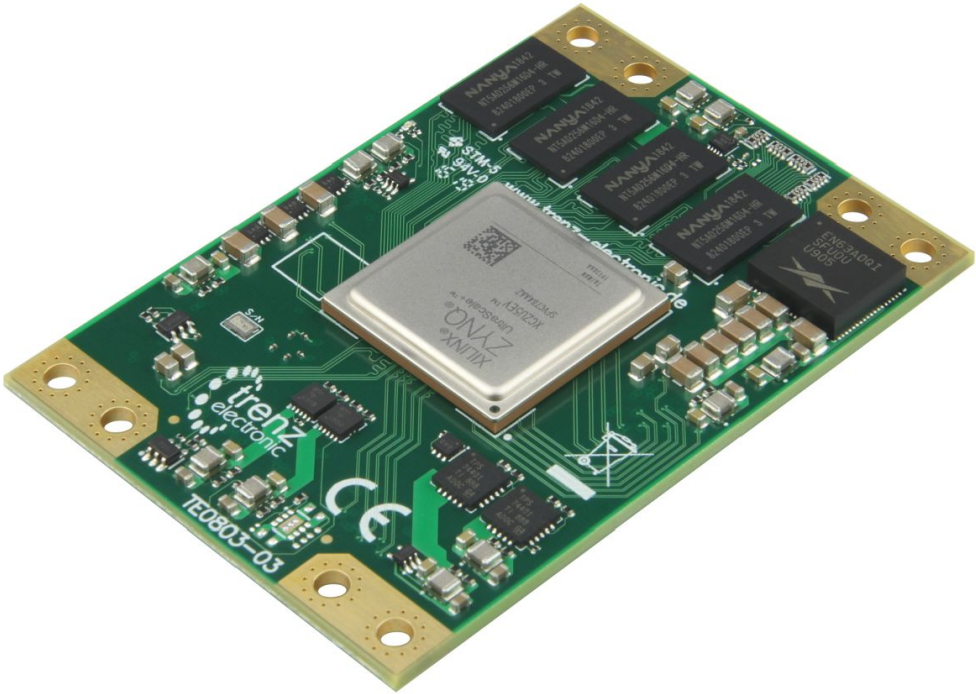




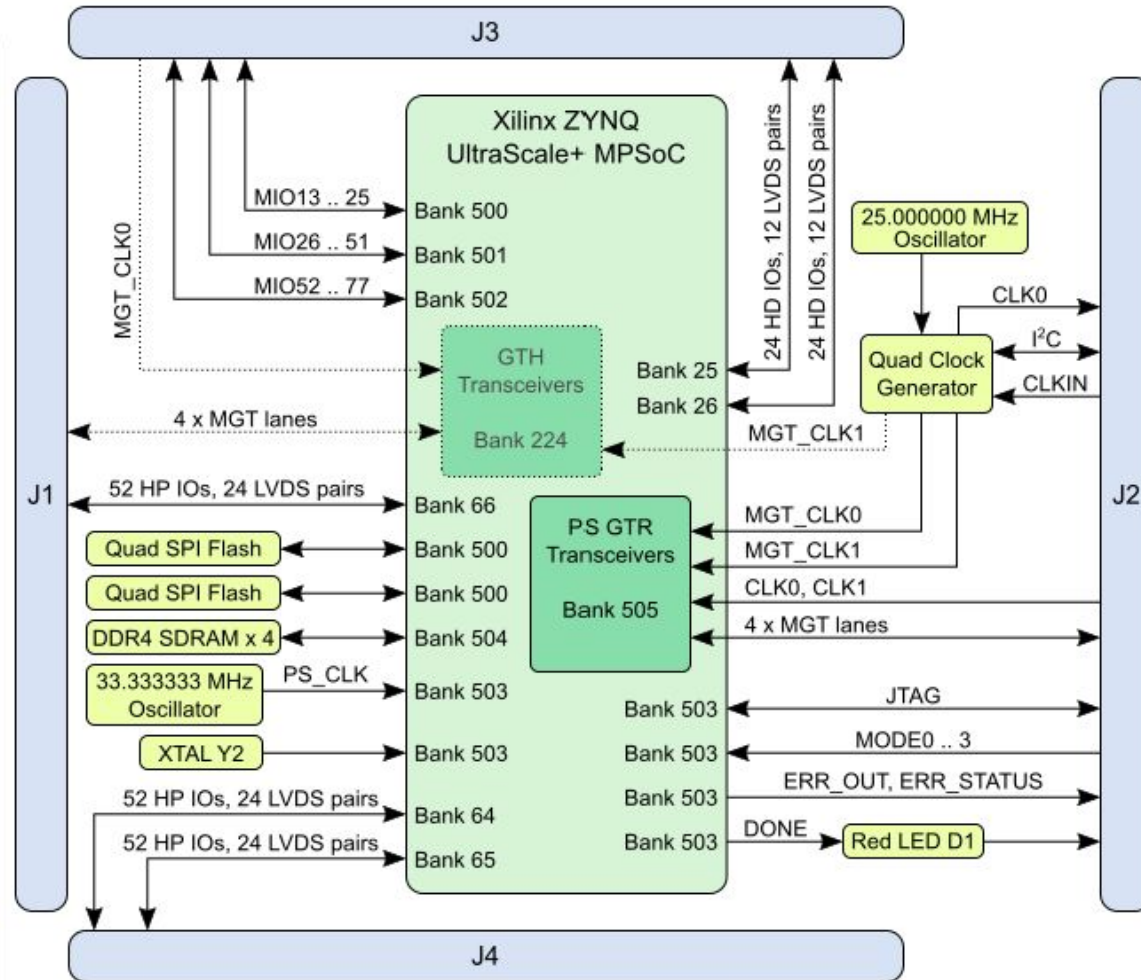
Regarding the usage of our schematics and alike documentation for Trenz module TE0813.

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. TE0813 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: TE0813		
	A4	Number: TE0813 3BE31-A	Rev. 01
	Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 1 of 30
	Filename: Legal Notices Modules.SchDoc		

TE0813-01



		Title: Module TE0813 - System Overview	
		A4 Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16		Copyright: 2015 Trenz Electronic GmbH	
Filename: TE0813-Overview.SchDoc		Page 2 of 30	



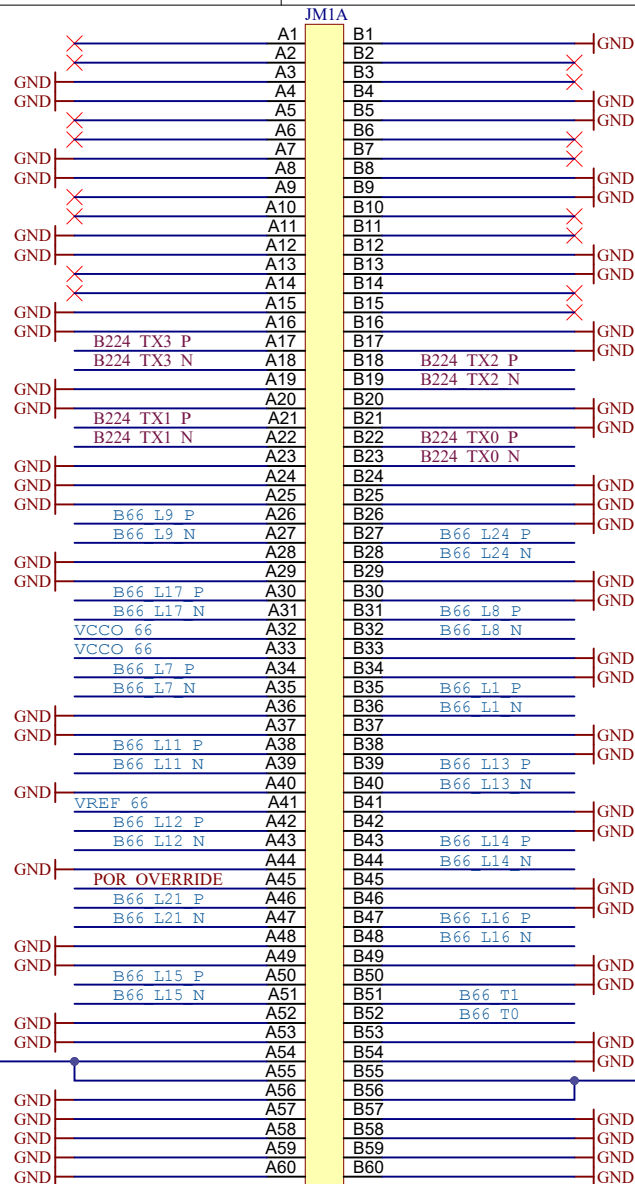
Title: TE0813 - Power Diagram		
A3	Number: TE0813 3BE31-A	Rev. 01
Datum: 2021-01-19 Copyright: Trenz Electronic GmbH / TT		Page 3 of 30
Filename: Power_Diagram.SchDoc		

1

2

3

4



ADM6-60-01.5-L-4-2

TP8
Testpoint 0.8mm

TP7
Testpoint 0.8mm



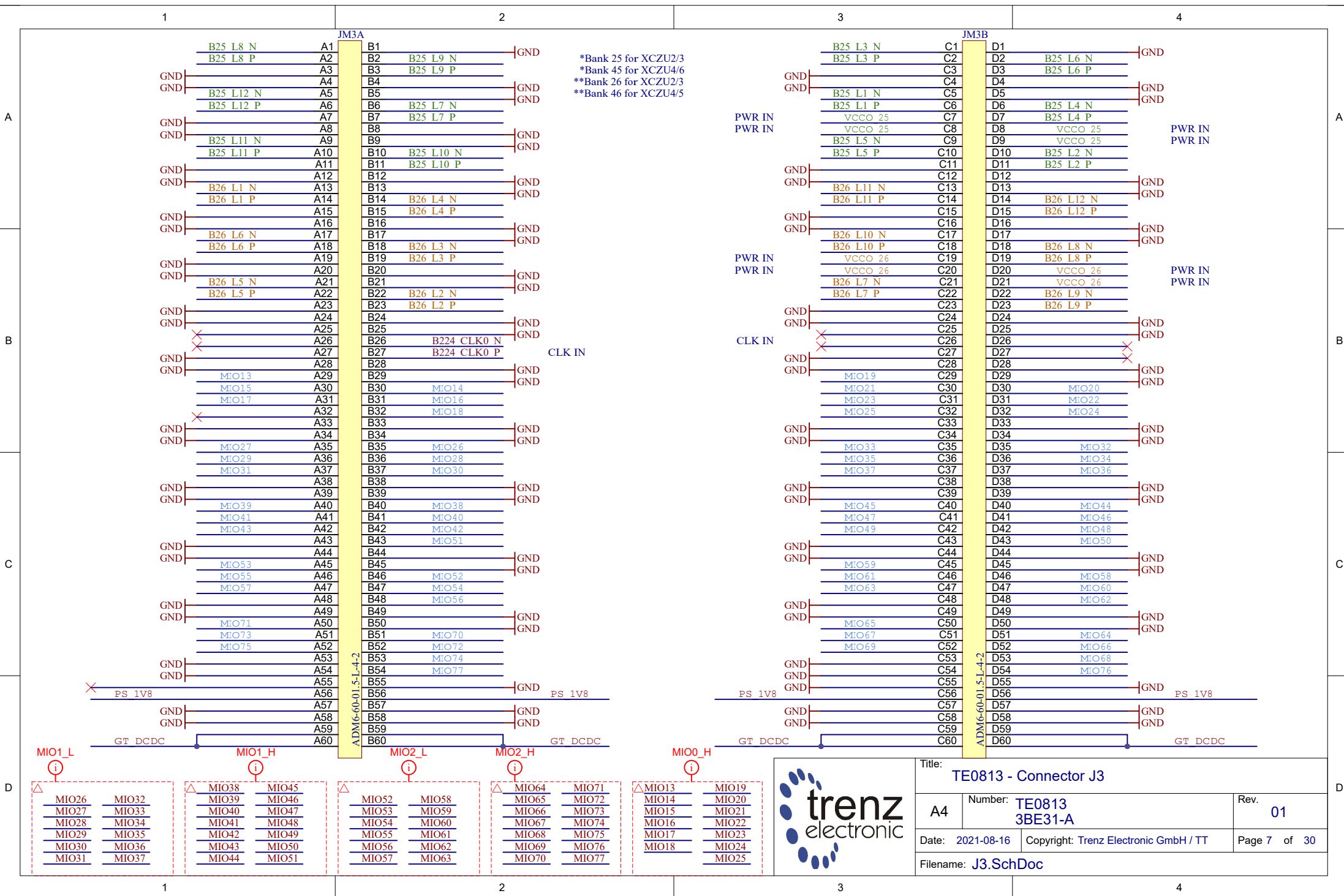
Title: TE0813 - Connector J1		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 5 of 30
Filename: J1.SchDoc		

1

2

3

4

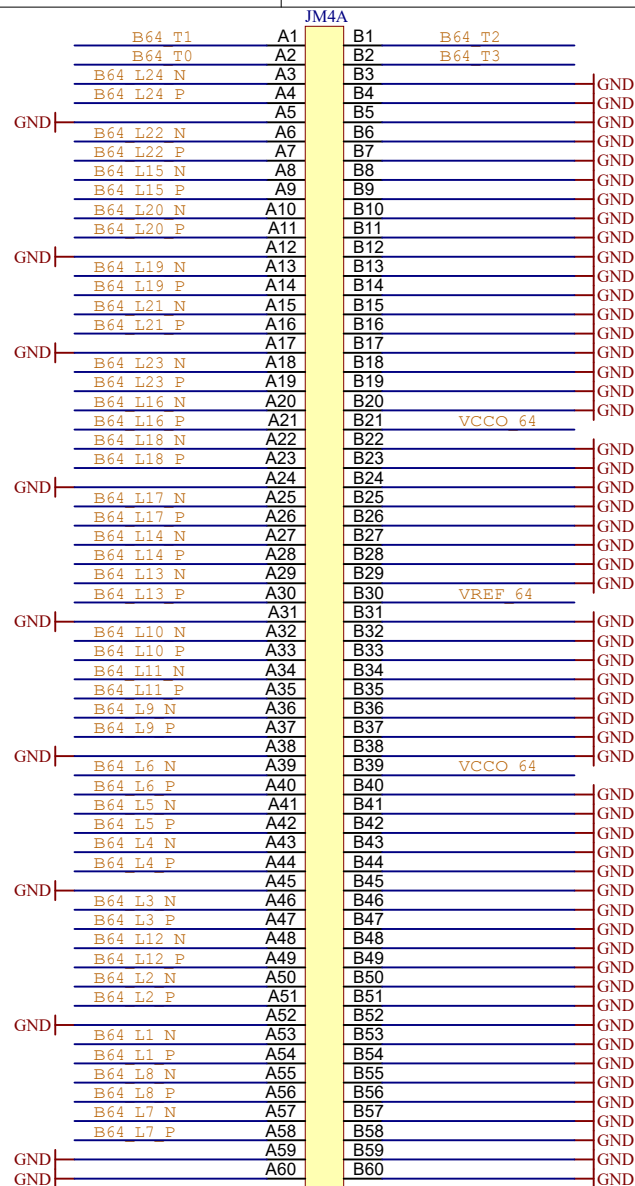


1

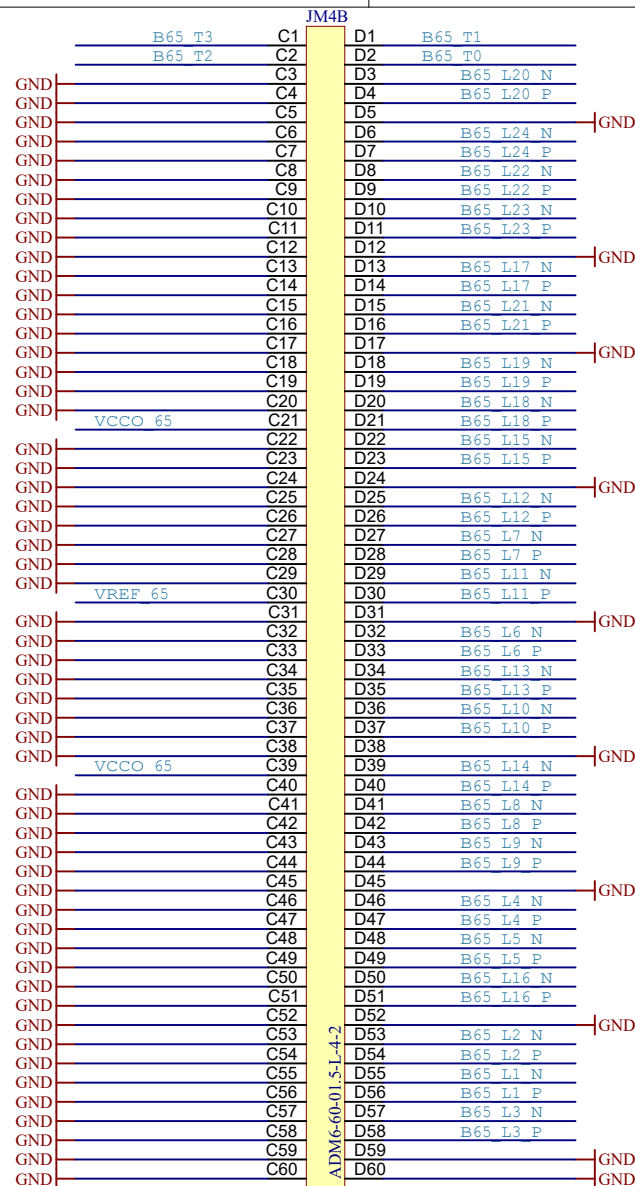
2

3

4



ADM6-60-01.5-L-4-2



ADM6-60-01.5-L-4-2



Title: TE0813 - Connector J4		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 8 of 30
Filename: J4.SchDoc		

1

2

3

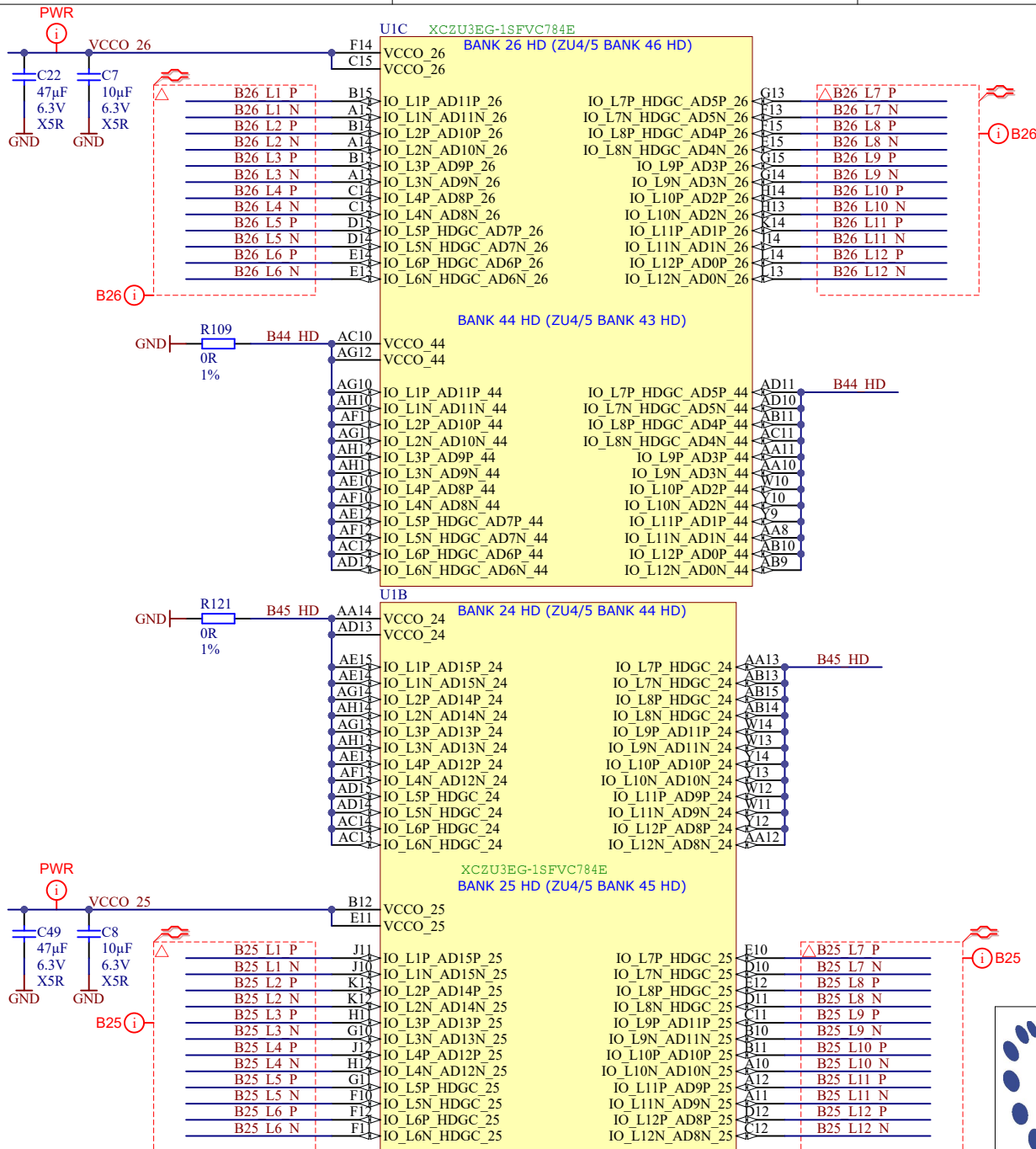
4

1

2

3

4



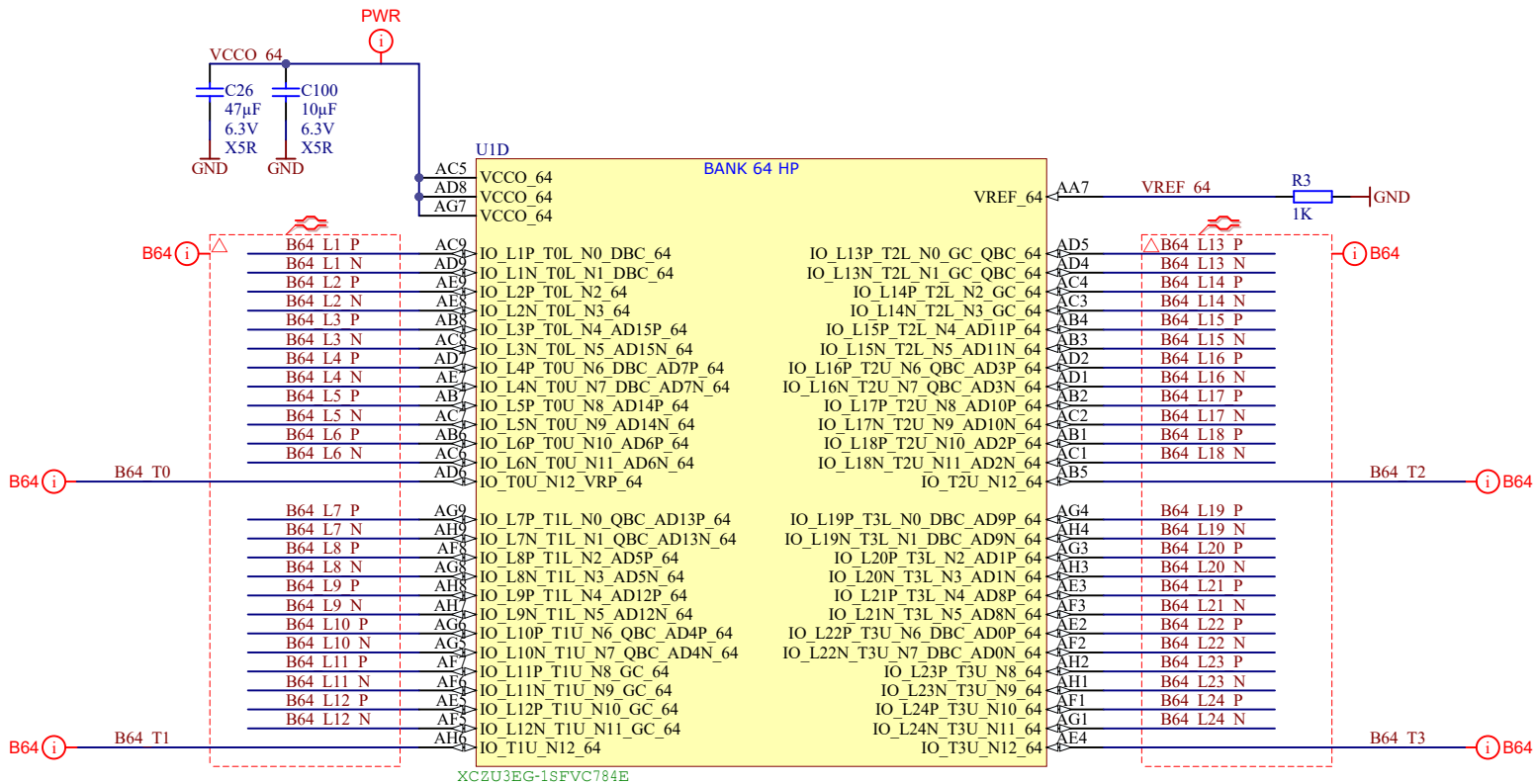
Title: TE0813 - HD Banks		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 9 of 30
Filename: B_HD.SchDoc		

1

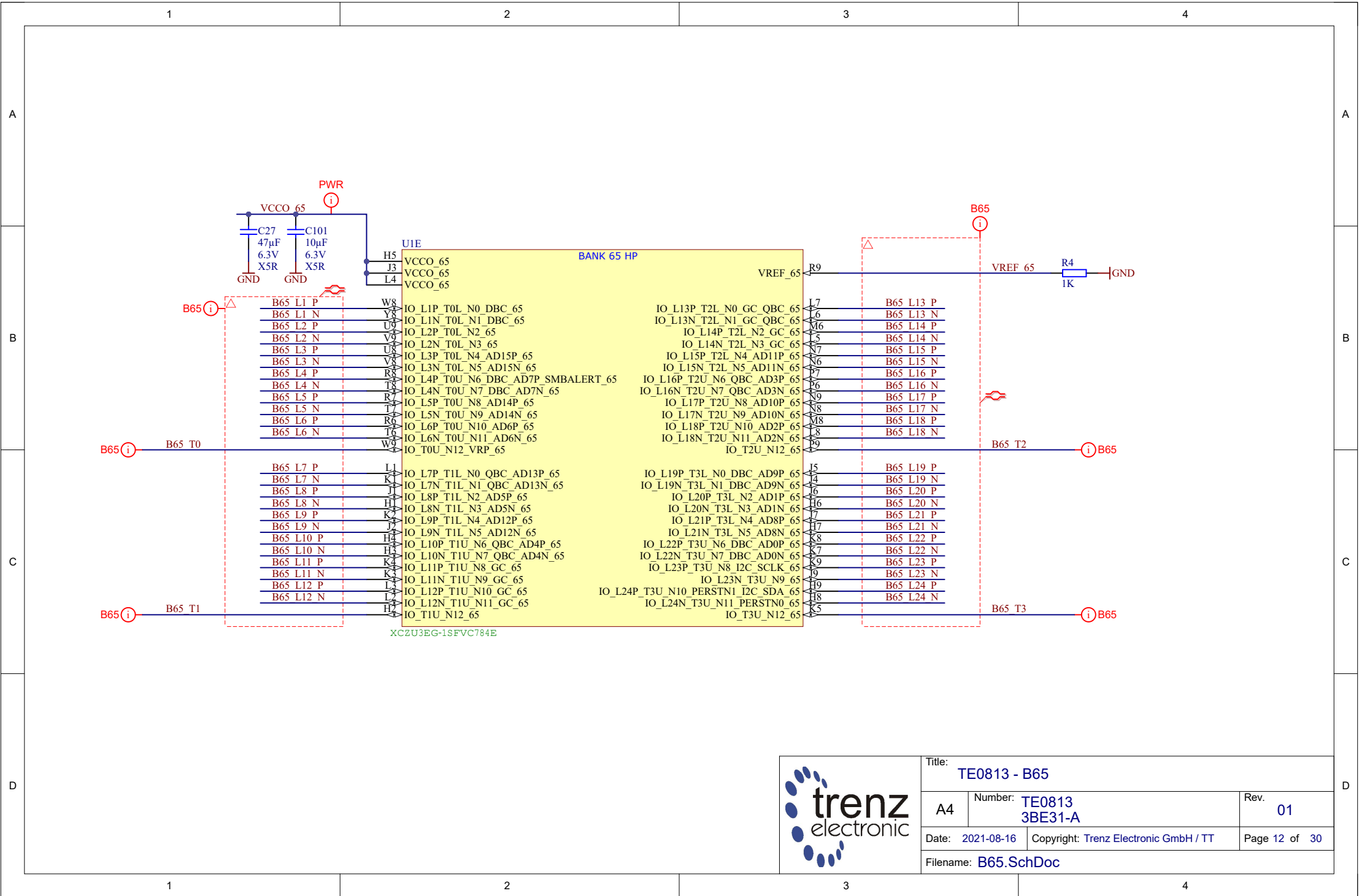
2

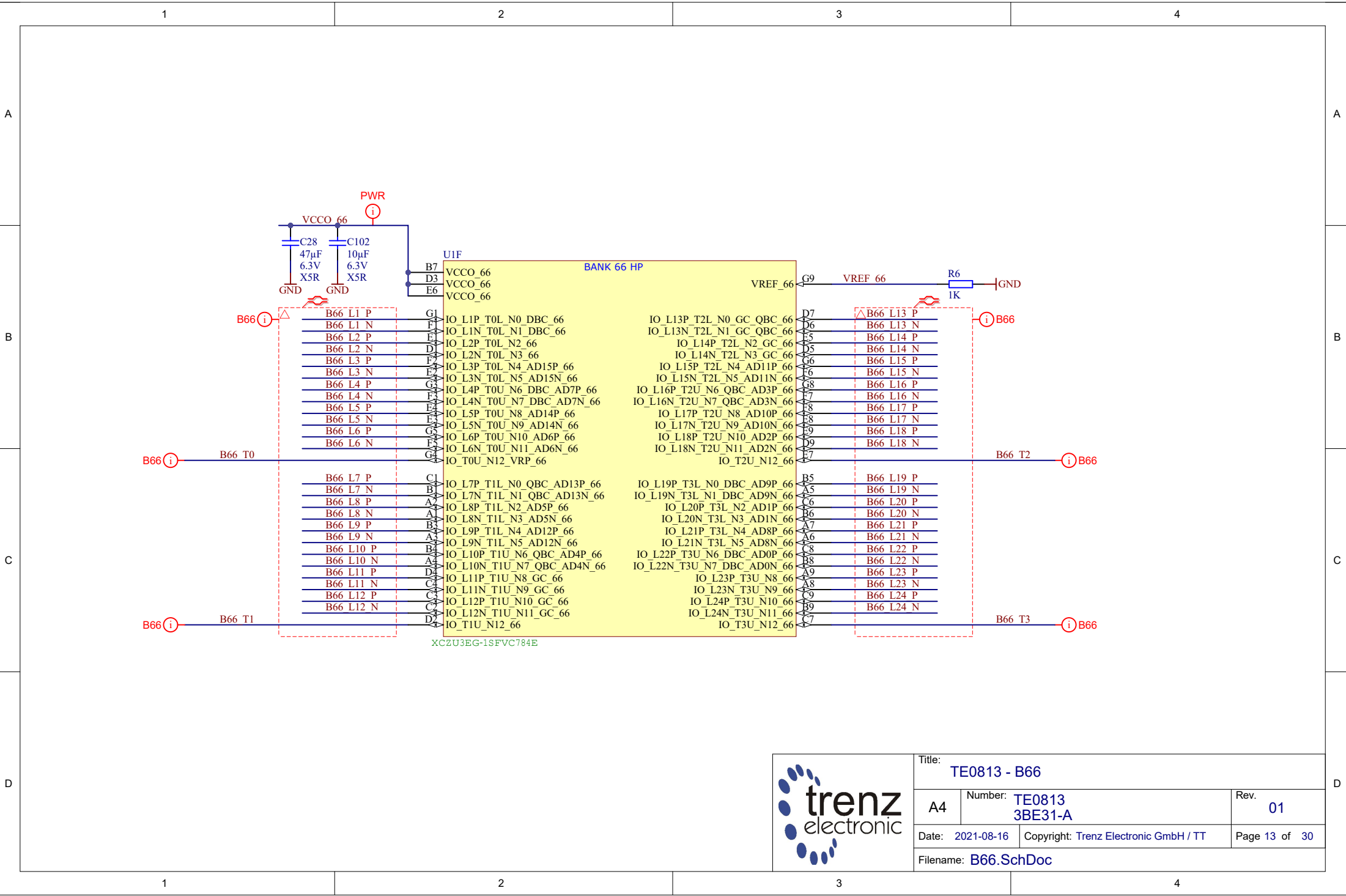
3

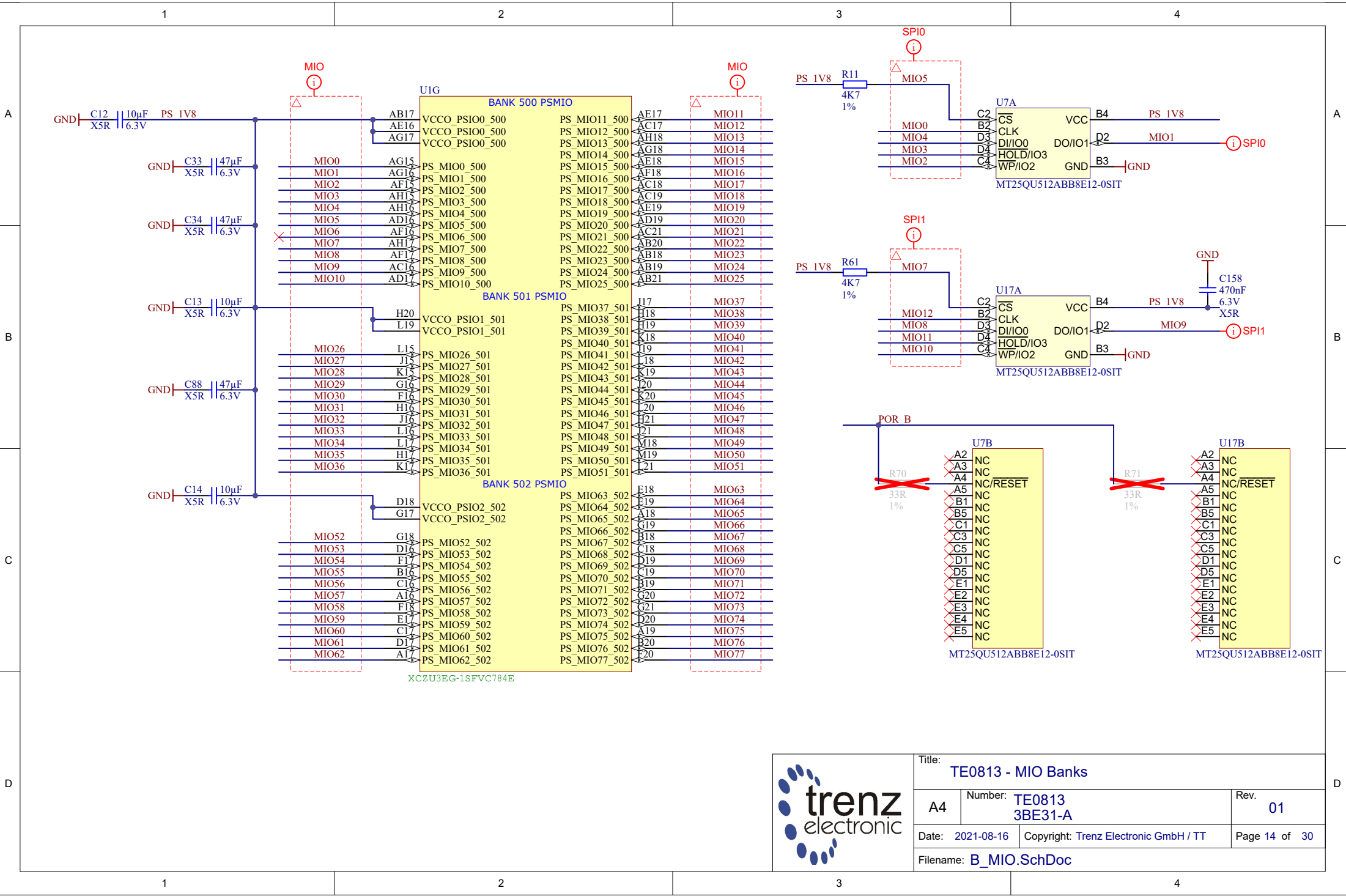
4



Title: TE0813 - B64			
A4	Number: TE0813 3BE31-A		Rev. 01
Date: 2021-08-16	Copyright: Trenc Electronic GmbH / TT		Page 11 of 30
Filename: B64.SchDoc			







1

2

3

4

A

A

B

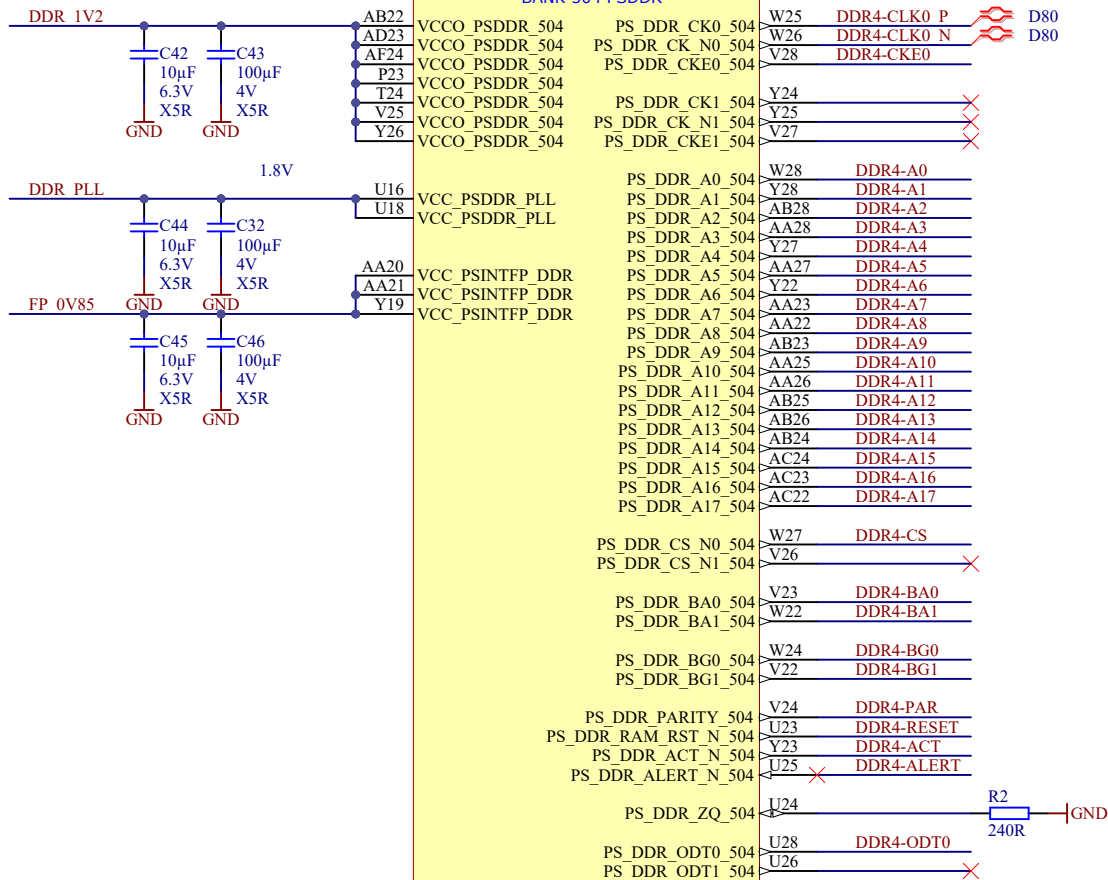
B

C

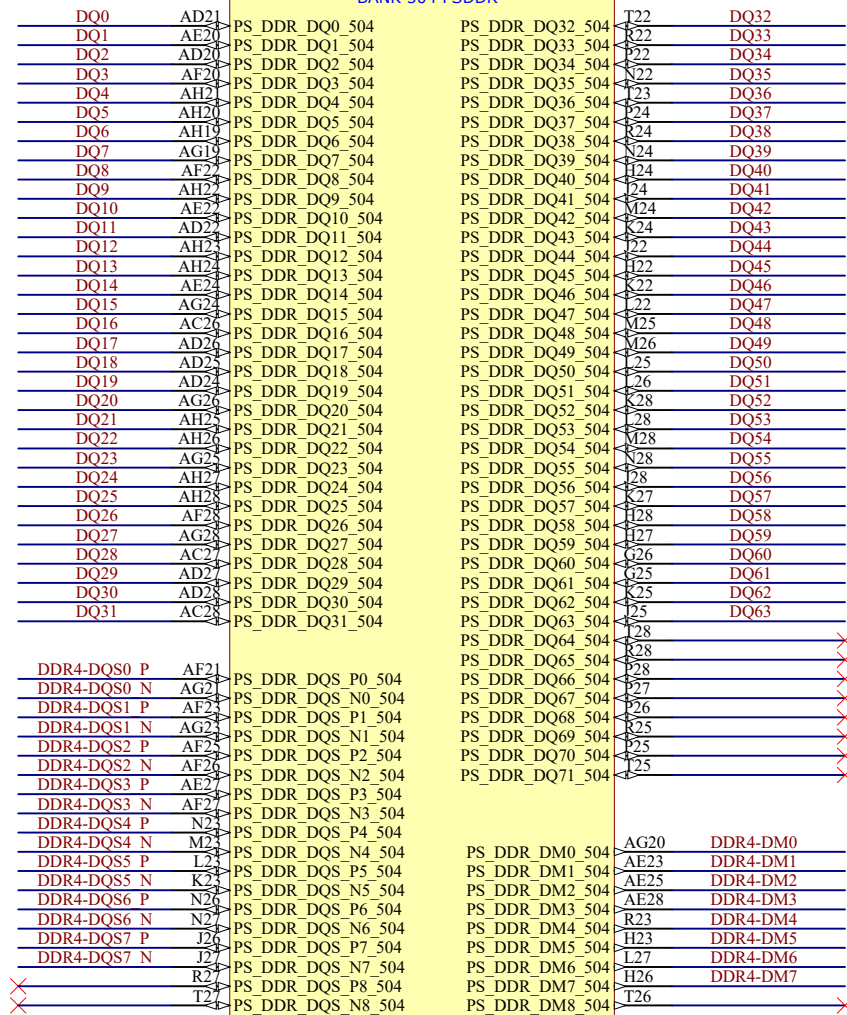
C

D

D



XC2U3EG-1SFVC784E



XC2U3EG-1SFVC784E



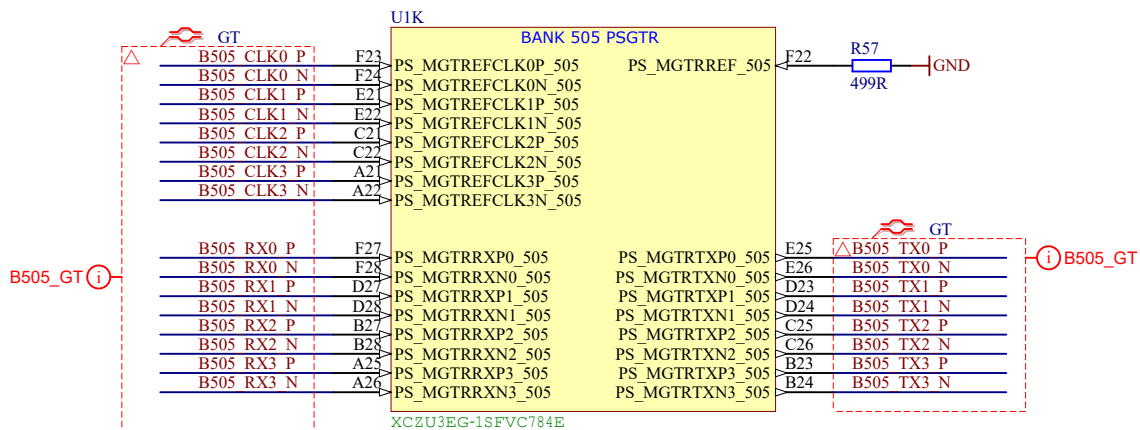
Title: TE0813 - PS_DDR		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 15 of 30
Filename: PS_DDR.SchDoc		

1

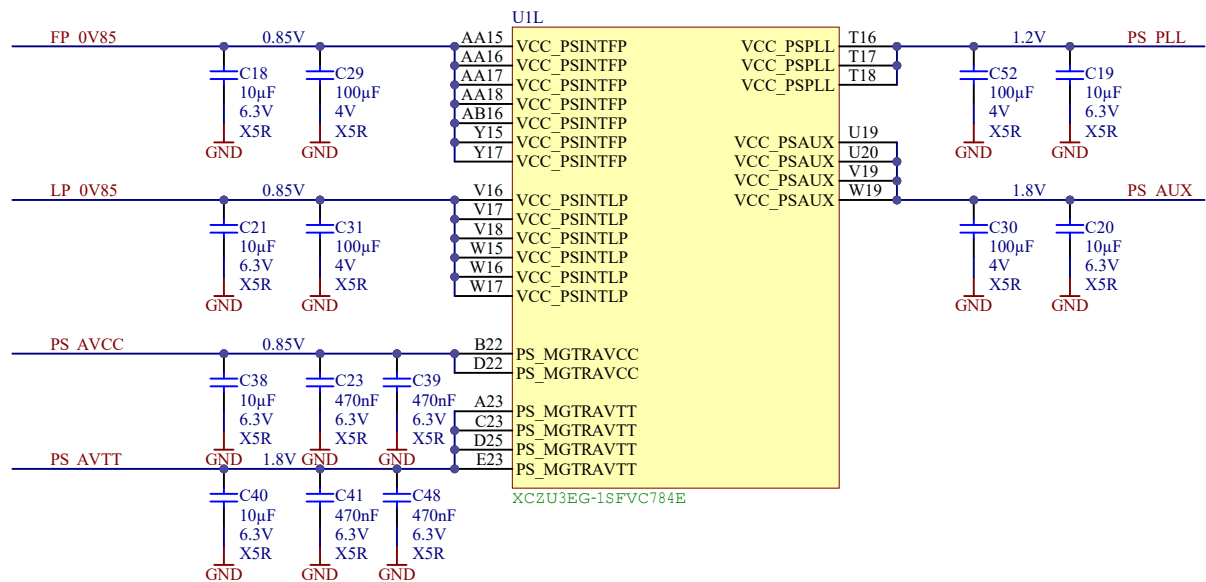
2

3

4



		Title: TE0813 - PS_GT	
		A4 Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT	
Filename: B_PS_GT.SchDoc		Page 16 of 30	



Title: TE0813 - ZU_PS_POWER			
A4	Number: TE0813 3BE31-A		Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT		Page 18 of 30
Filename: ZU_PS_POWER.SchDoc			

1

2

3

4

A

A

B

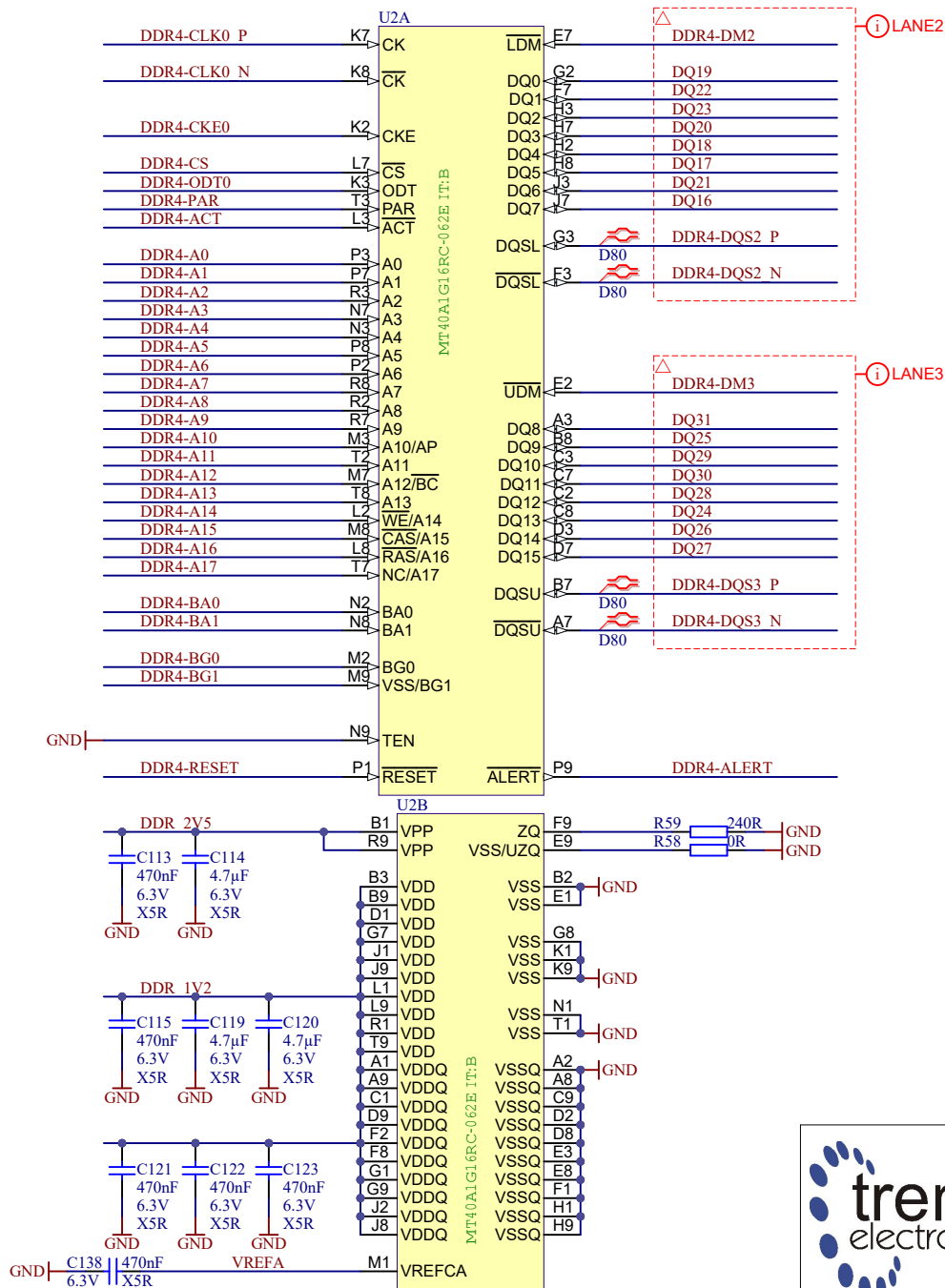
B

C

C

D

D



Title: TE0813 - DDR4_1_RAM		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 20 of 30
Filename: DDR4-RAM.SchDoc		

1

2

3

4

1

2

3

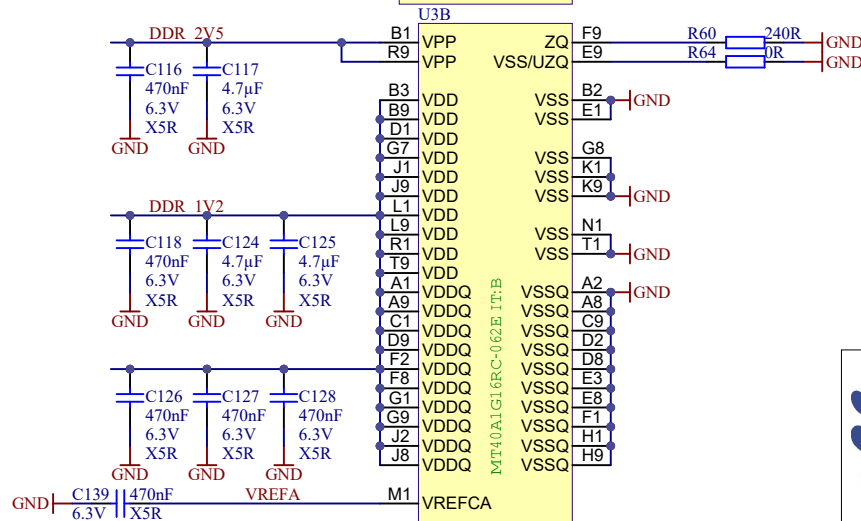
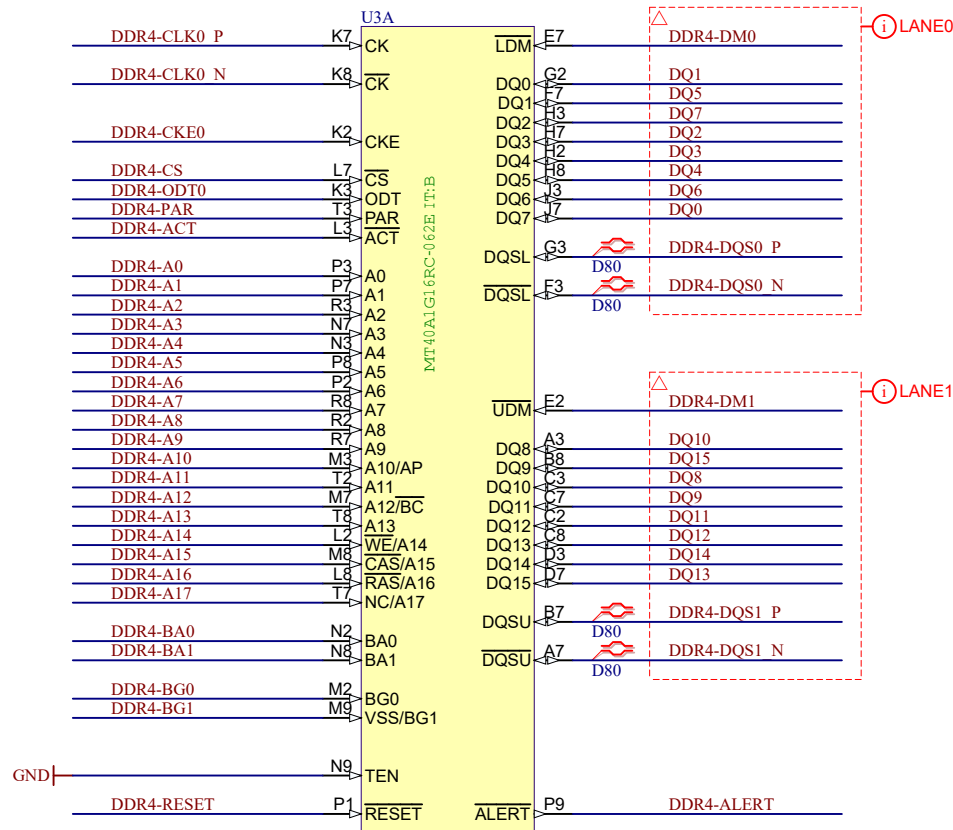
4

A

B

C

D



Title: TE0813 - DDR4_2_RAM		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 21 of 30
Filename: DDR4-RAM_2.SchDoc		

1

2

3

4

1

2

3

4

A

A

B

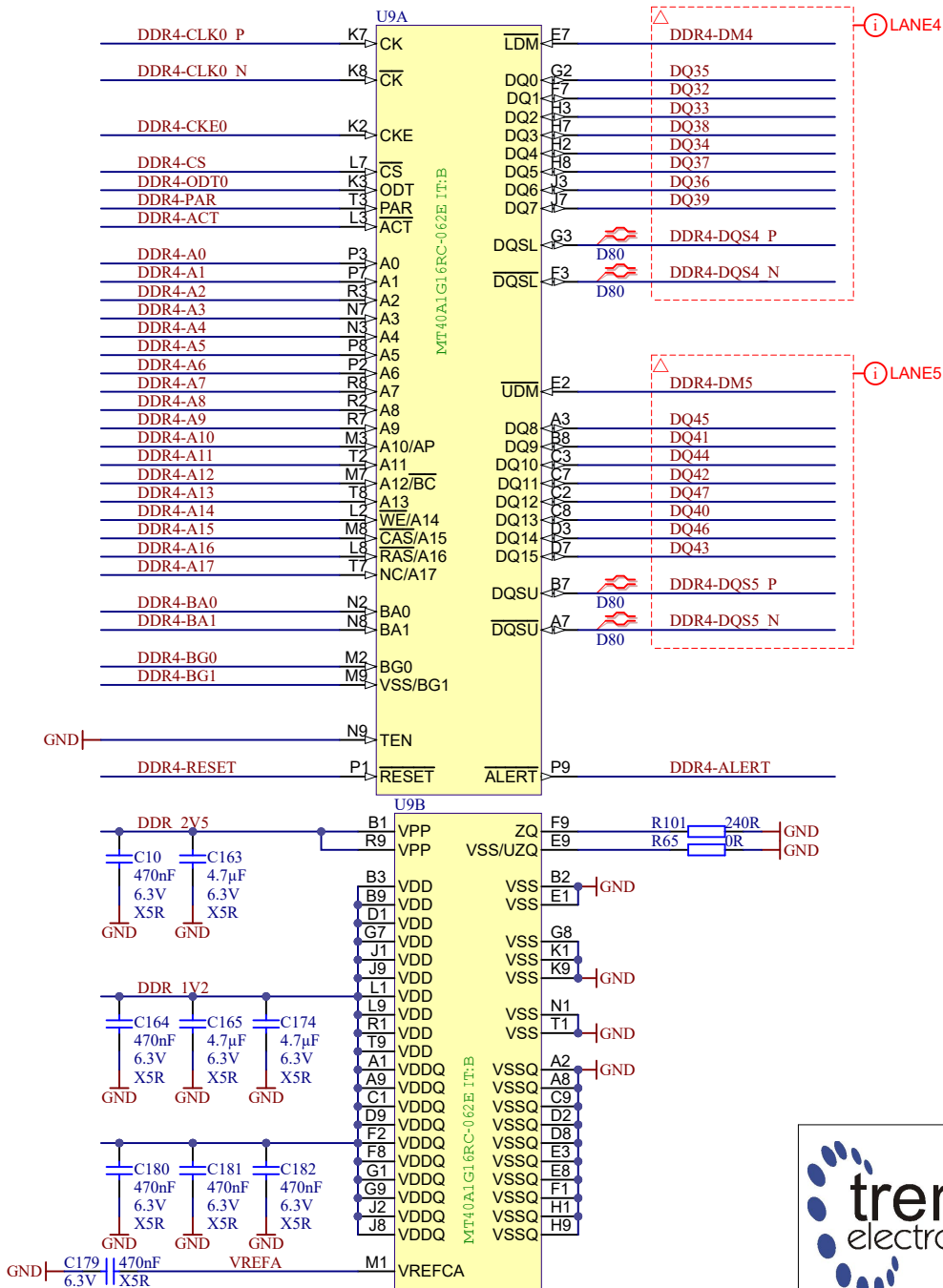
B

C

C

D

D



Title: TE0813 - DDR4_3_RAM		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 22 of 30
Filename: DDR4-RAM_3.SchDoc		

1

2

3

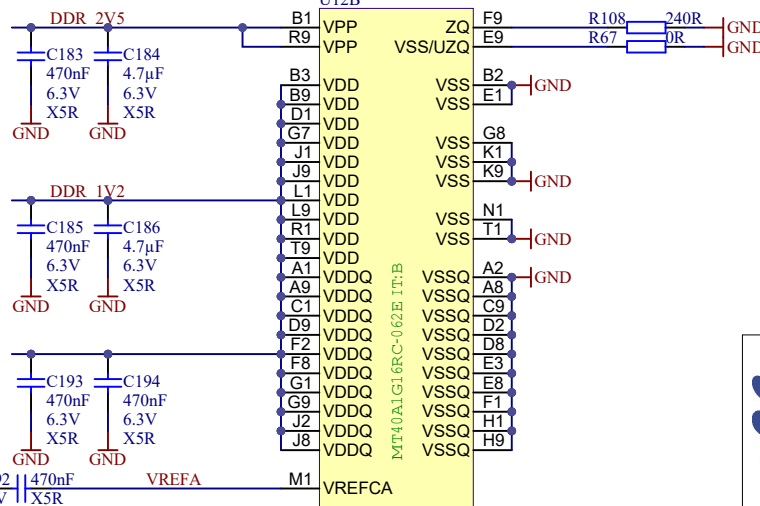
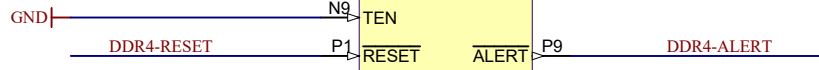
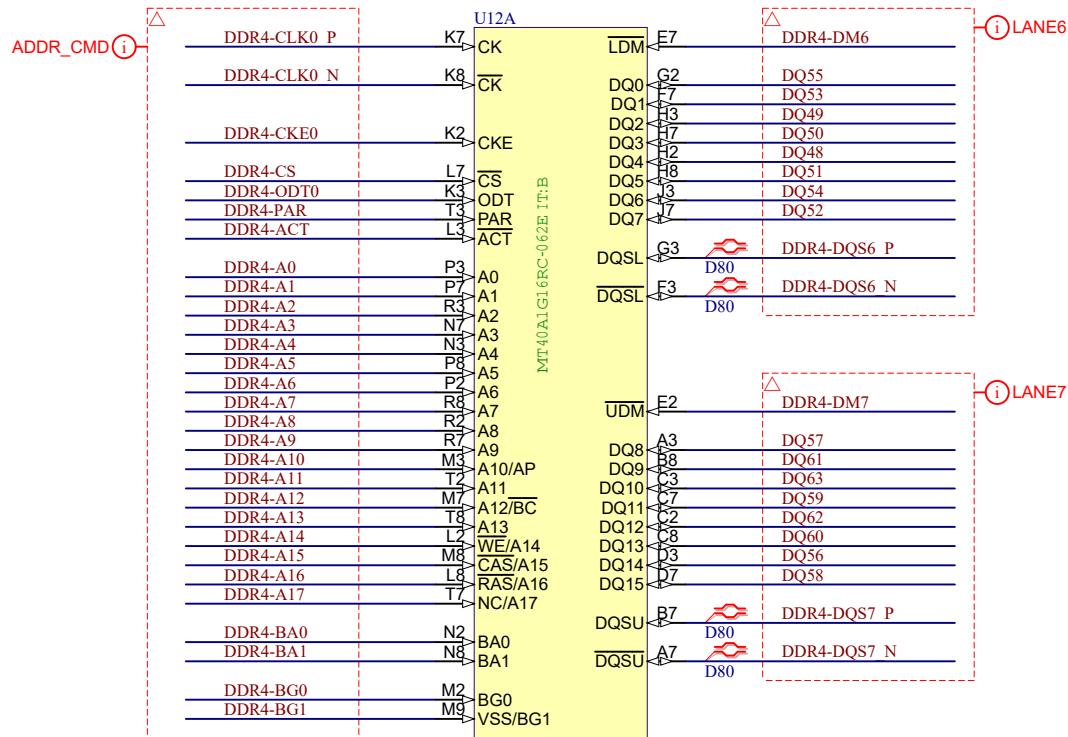
4

1

2

3

4



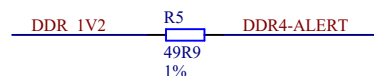
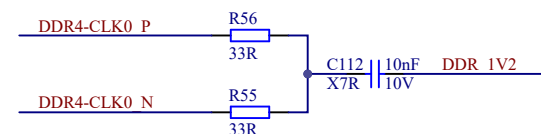
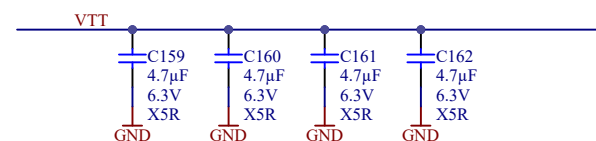
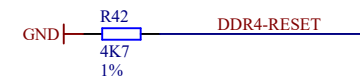
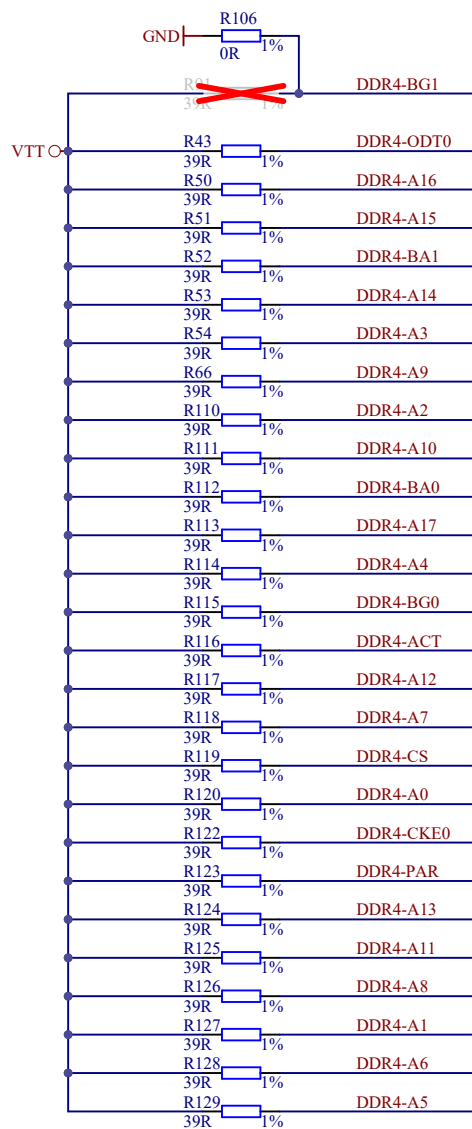
Title: TE0813 - DDR4_4_RAM		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 23 of 30
Filename: DDR4-RAM_4.SchDoc		

1

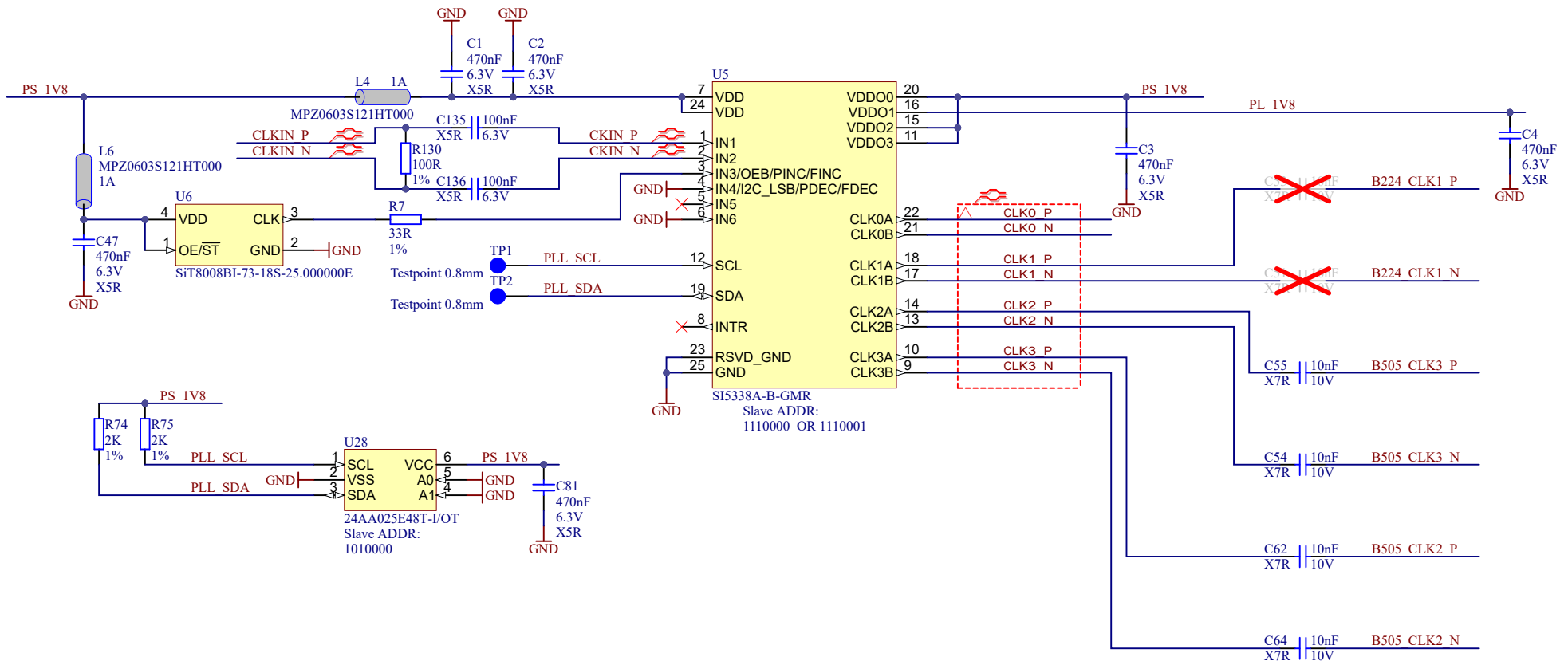
2

3

4

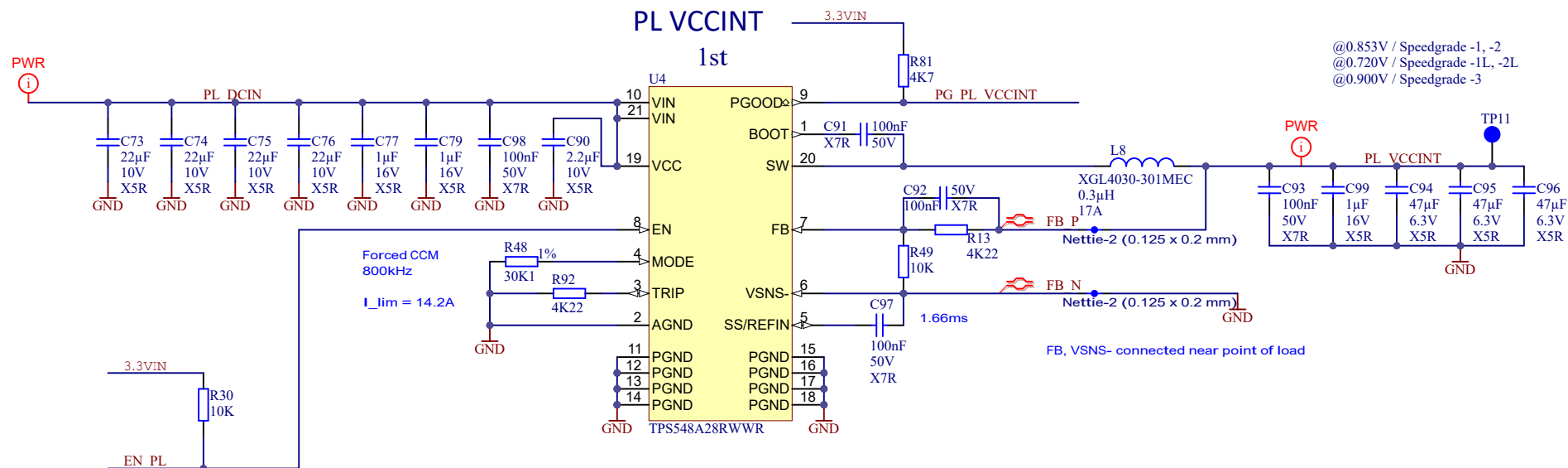


			Title: TE0813 - DDR4_TERM	
			A4	Number: TE0813 3BE31-A
Date: 2021-08-16			Copyright: Trenz Electronic GmbH / TT	
Filename: DDR4-TERM.SchDoc			Page 24 of 30	
			Rev. 01	



		Title: TE0813 - CLOCK	
		A4	Number: TE0813 3BE31-A
Date: 2021-08-16		Copyright: Trenz Electronic GmbH / TT	
Filename: Clock.SchDoc		Page 25 of 30	

Rev. 01



@0.853V / Speedgrade -1, -2
 @0.720V / Speedgrade -1L, -2L
 @0.900V / Speedgrade -3

FPGA Speed grade:		
-1LI / -2LE	R13 - 2K, R49 - 10K	PL_VCCINT = 0.720V
-1 / -2	R13 - 4K22, R49 - 10K	PL_VCCINT = 0.853V
-3E	R13 - 10K, R49 - 20K	PL_VCCINT = 0.900V

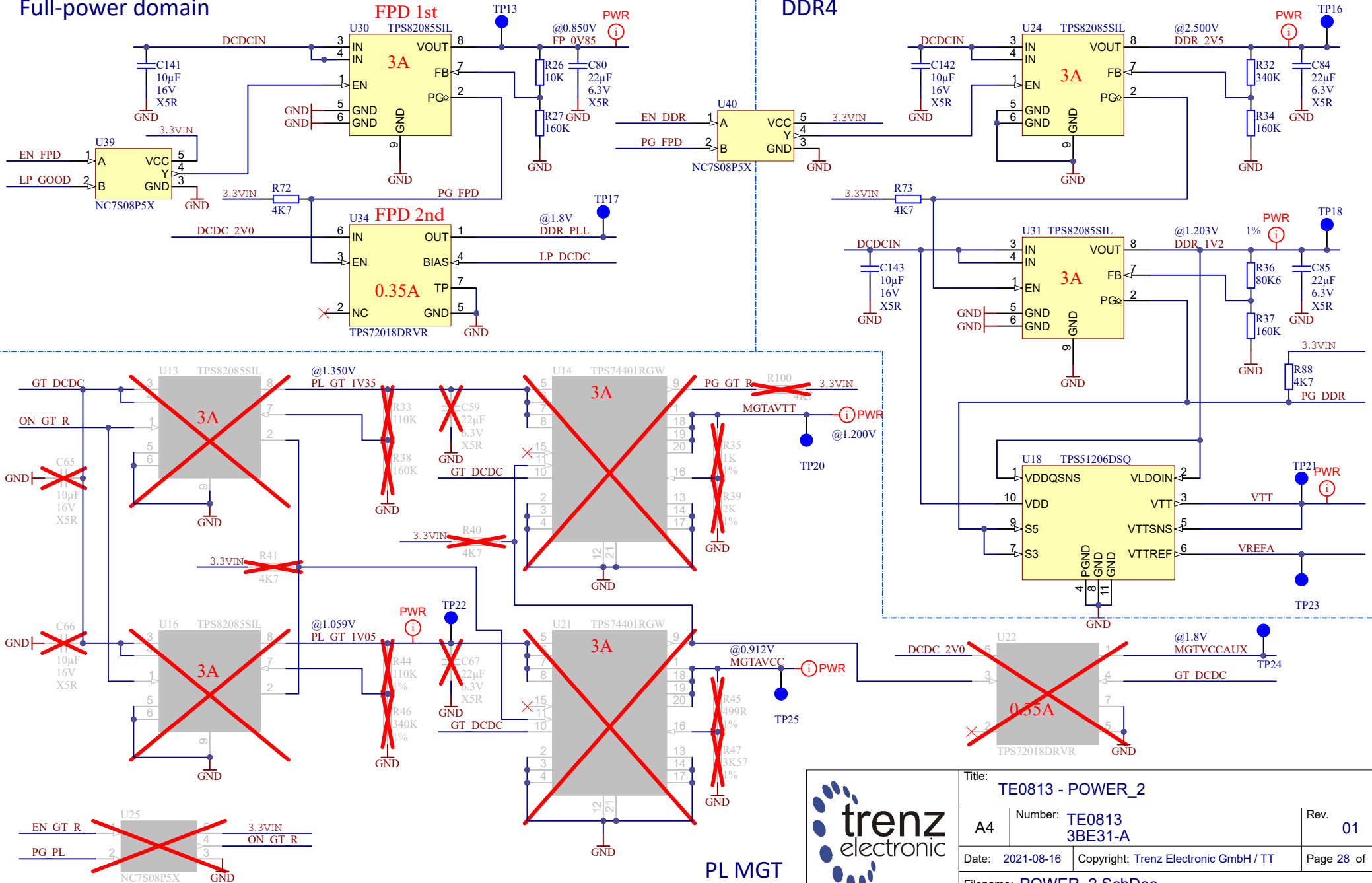
U4 pin compatible with
 -- TPS548B28 (20A)
 -- TPS54JA20 (12A)

Title: TE0813 - POWER		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 26 of 30
Filename: POWER.SchDoc		



Full-power domain

DDR4



Title: TE0813 - POWER_2		
A4	Number: TE0813 3BE31-A	Rev. 01
Date: 2021-08-16	Copyright: Trenz Electronic GmbH / TT	Page 28 of 30
Filename: POWER_2.SchDoc		

1		2		3		4																													
A	<table><tr><td>REV</td><td>DATE</td><td>Description</td><td></td></tr><tr><td>-01</td><td>2021-05</td><td>Initial revision</td><td>VT</td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>						REV	DATE	Description		-01	2021-05	Initial revision	VT																					A
REV	DATE	Description																																	
-01	2021-05	Initial revision	VT																																
B							B																												
C							C																												
D	 Title: TE0813 - Revision History <table><tr><td>A4</td><td>Number: TE0813 3BE31-A</td><td>Rev. 01</td></tr><tr><td>Date: 2021-07-26</td><td>Copyright: Trenz Electronic GmbH</td><td>Page 30 of 30</td></tr><tr><td colspan="3">Filename: Revision Changes.SchDoc</td></tr></table>						A4	Number: TE0813 3BE31-A	Rev. 01	Date: 2021-07-26	Copyright: Trenz Electronic GmbH	Page 30 of 30	Filename: Revision Changes.SchDoc			D																			
A4	Number: TE0813 3BE31-A	Rev. 01																																	
Date: 2021-07-26	Copyright: Trenz Electronic GmbH	Page 30 of 30																																	
Filename: Revision Changes.SchDoc																																			
1		2		3		4																													