

1

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A

A

U_FPGA
FPGA.SchDoc

Special notes:



U_SODIMM
SODIMM.SchDoc



U_CLOCK
CLOCK.SchDoc



U_POWER
POWER.SchDoc



U_CONN
CONN.SchDoc



U_CPLD
CPLD.SchDoc



B

B

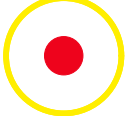
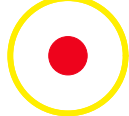
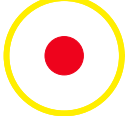
C

C

PM1

PM2

PM3



FIDU-DOT - small

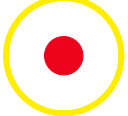
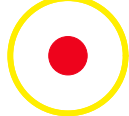
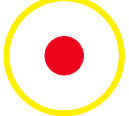
FIDU-DOT - small

FIDU-DOT - small

PM4

PM5

PM6

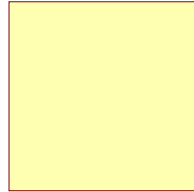


FIDU-DOT - small

FIDU-DOT - small

FIDU-DOT - small

Front Bracket screw head on Top
MECH1



Slotblende Ndigo xTDC4 Lemo

Front Bracket screw head on Bottom
MECH2



TEF1001 PCIe Frontplate

D

D

Serial
Serial
Serialnumber 6,3 x 6.3mm

LOGO1

TE Logo PRINT Layer

LOGO PRINT



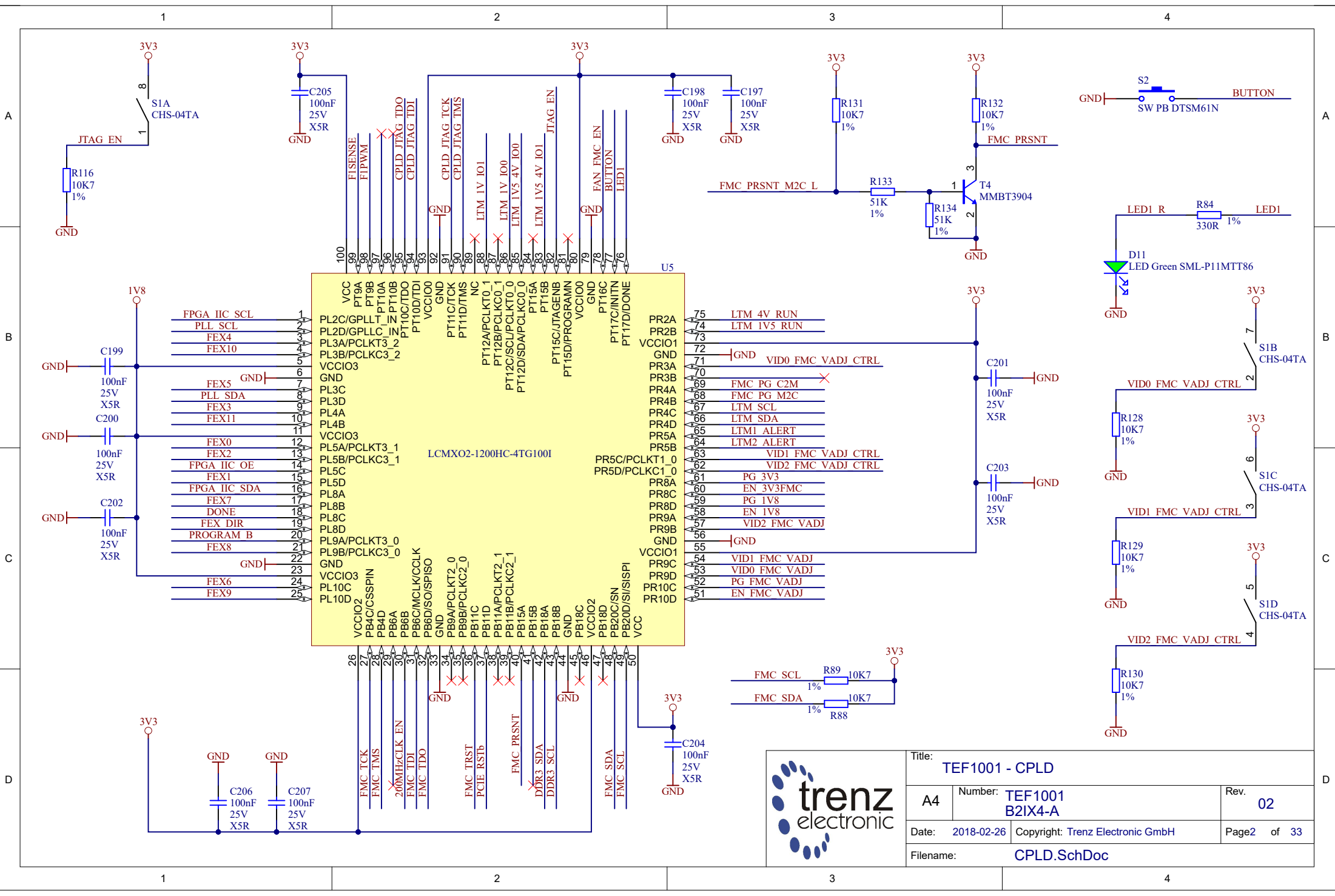
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A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page1 of 33
Filename: TEF1001.SchDoc		

1

2

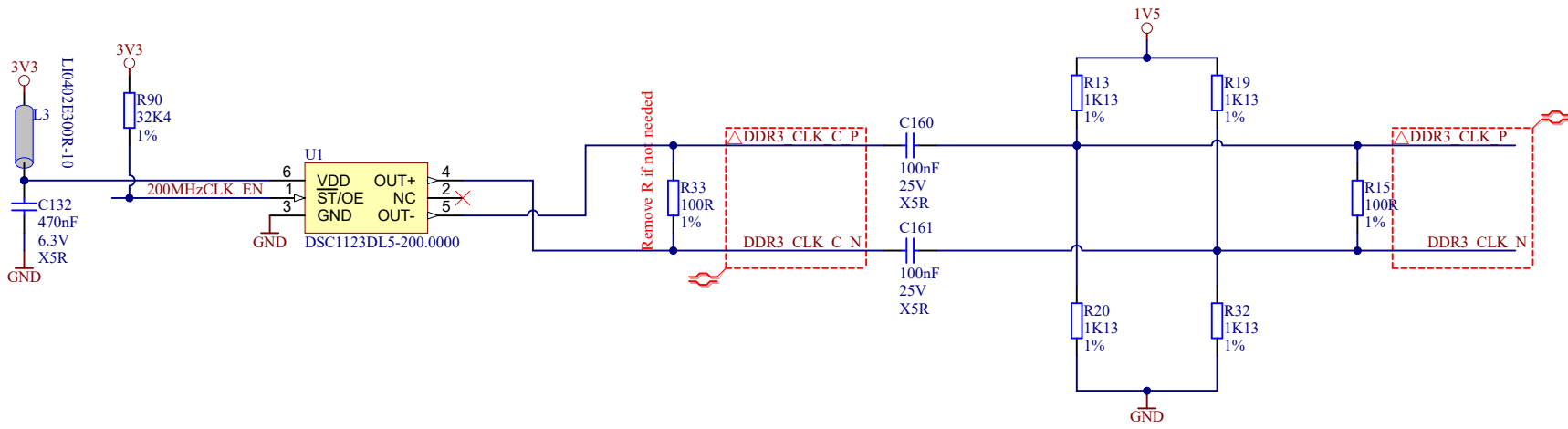
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4

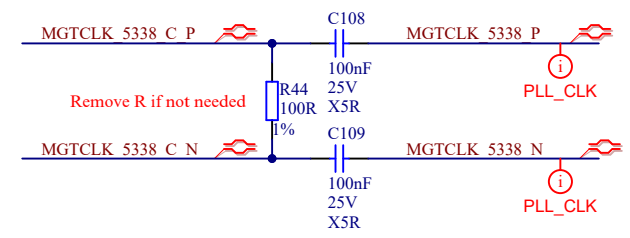
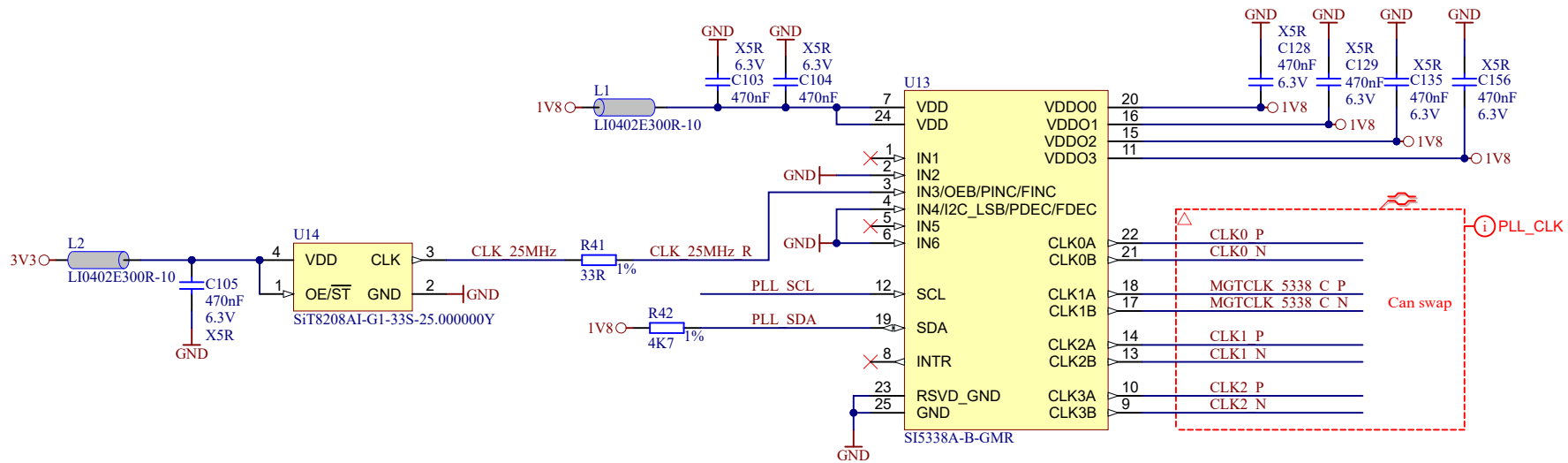



Title: TEF1001 - CPLD		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page2 of 33
Filename: CPLD.SchDoc		

U_CLK-SI5338
CLK-SI5338.SchDoc



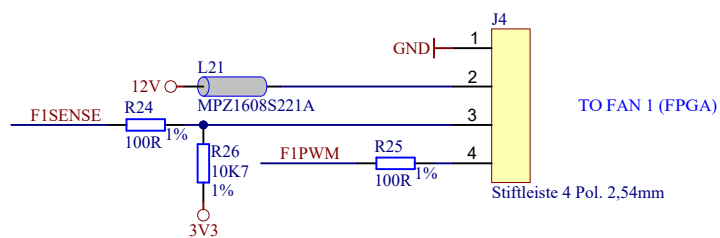
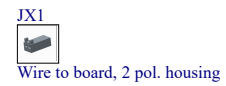
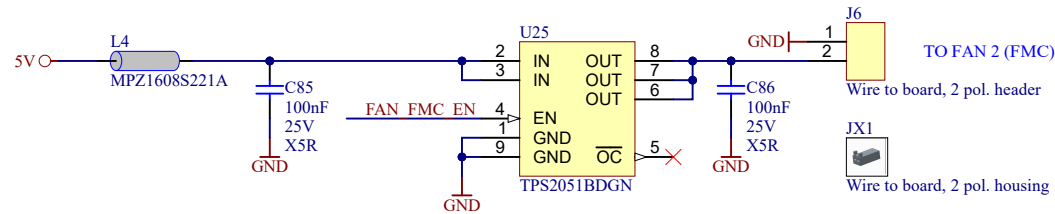
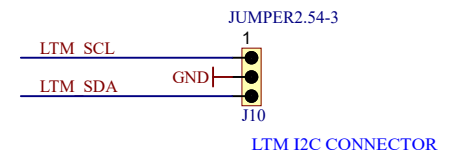
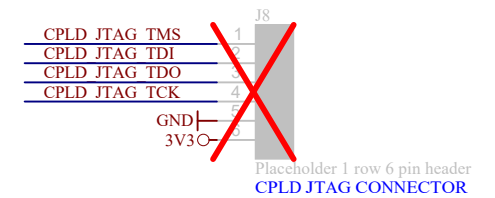
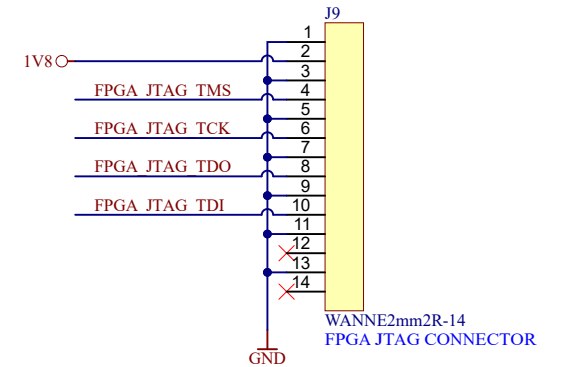
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	A4	Number: TEF1001 B2IX4-A
	Date: 2018-02-26	Copyright: Trenz Electronic GmbH
	Rev. 02	Page 3 of 33
Filename: CLOCK.SchDoc		



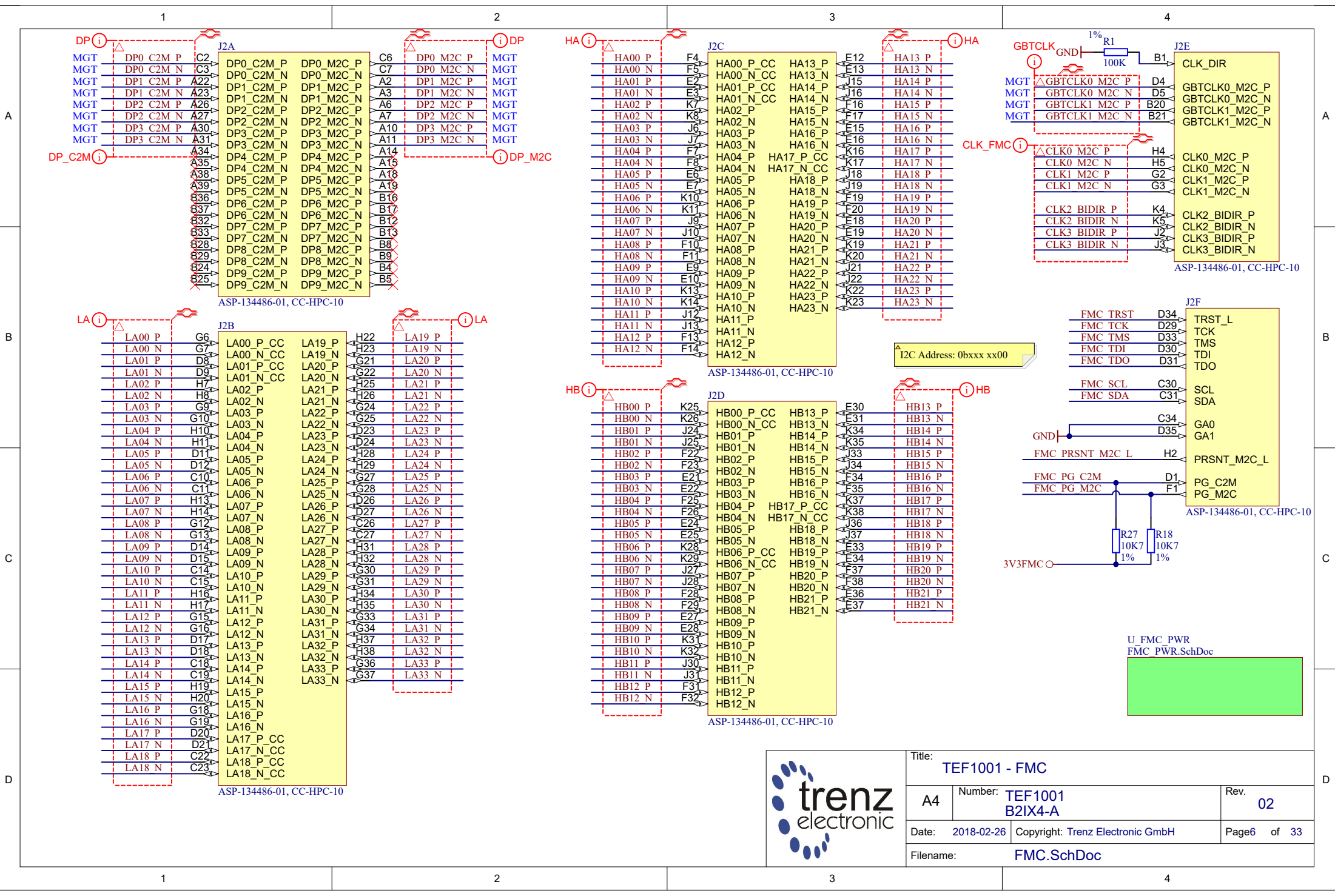
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			A4	Number: TEF1001 B2IX4-A
Date: 2018-02-26		Copyright: Trenz Electronic GmbH		Page4 of 33
Filename: CLK-SI5338.SchDoc				


U_FMC
FMC.SchDoc

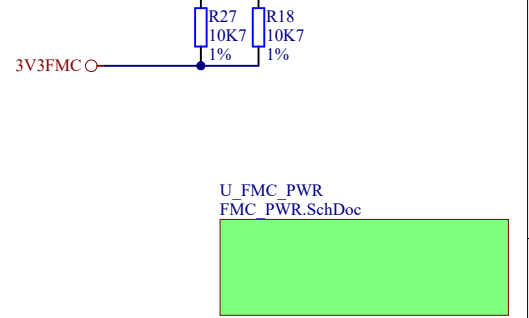
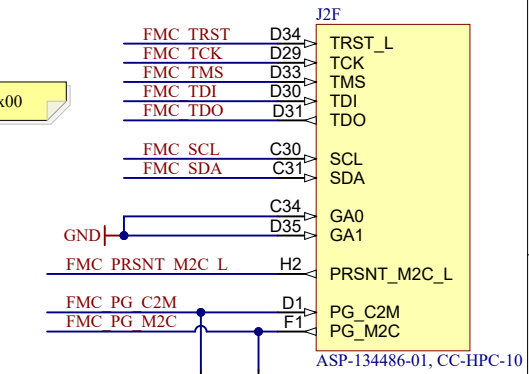
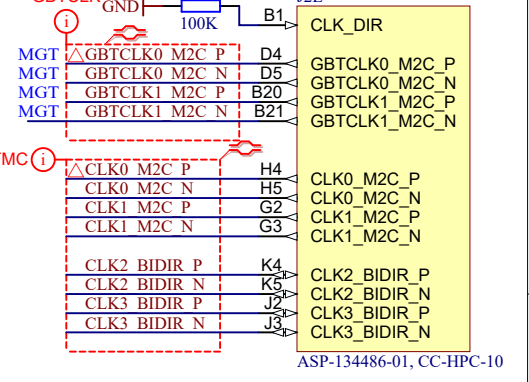
U_PCIE_CONN
PCIE_CONN.SchDoc



Title: TEF1001 - CONN		
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Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page5 of 33
Filename: CONN.SchDoc		

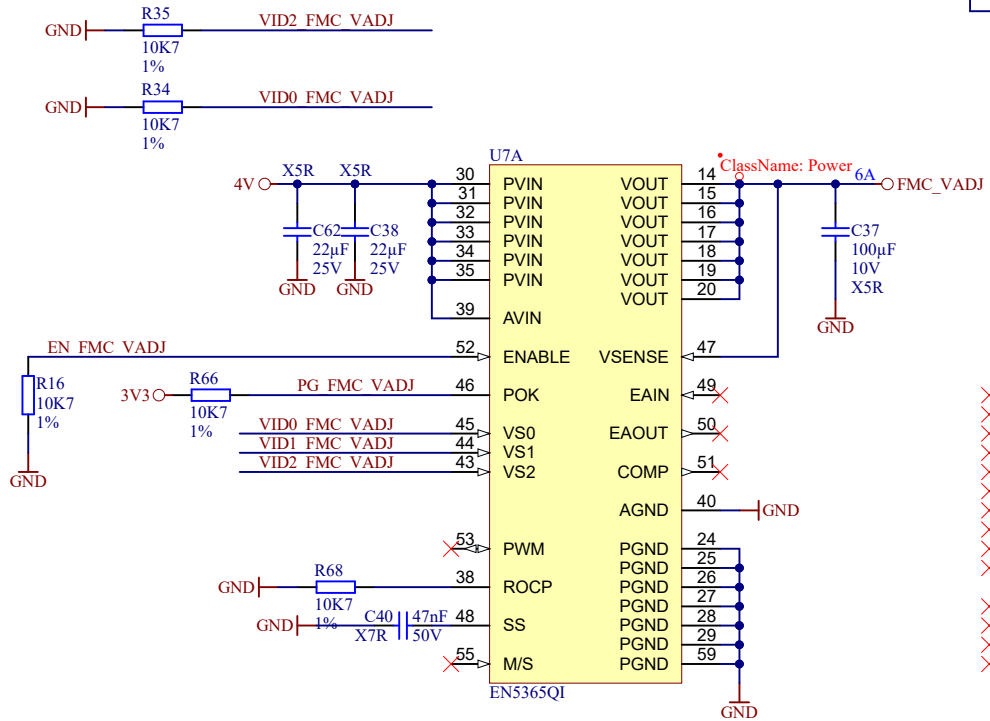
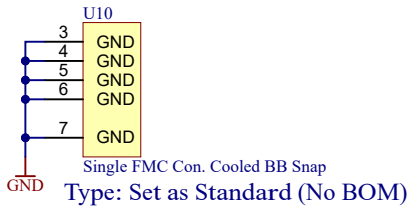
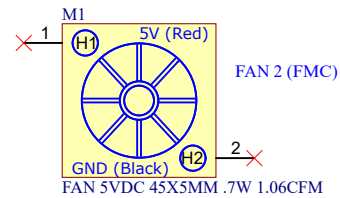
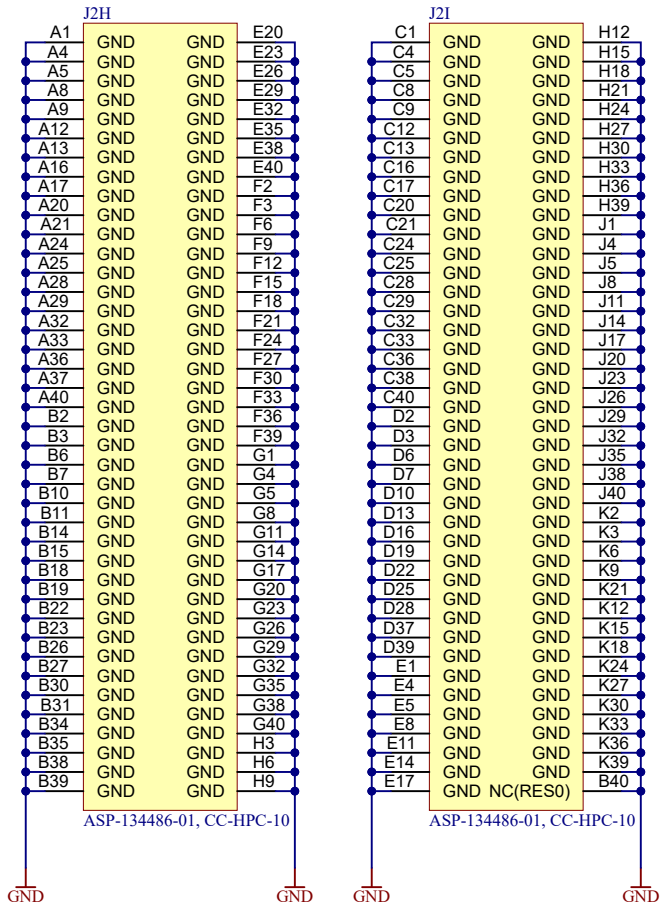


			Title: TEF1001 - FMC	
			A4	Number: TEF1001 B2IX4-A
Date: 2018-02-26		Copyright: Trenz Electronic GmbH		Page6 of 33
Filename: FMC.SchDoc				



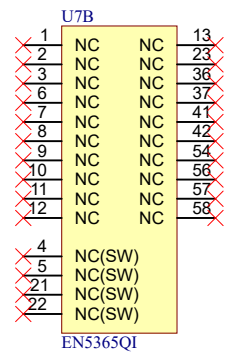
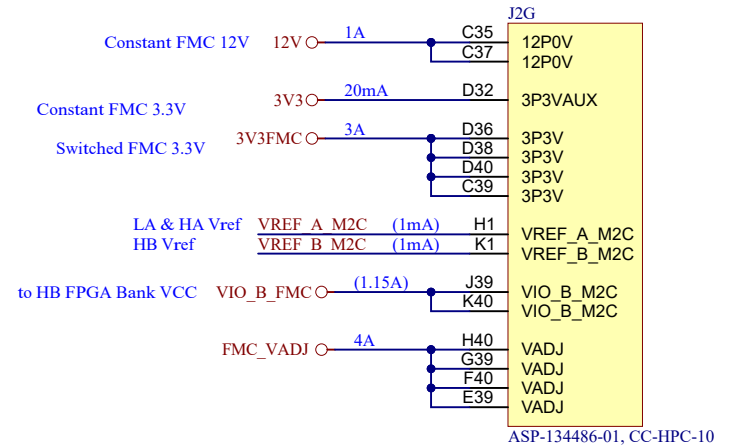
I2C Address: 0bxxx xx00



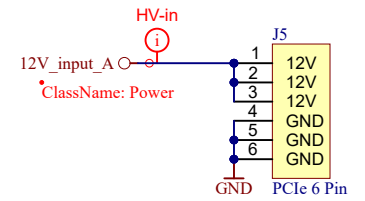
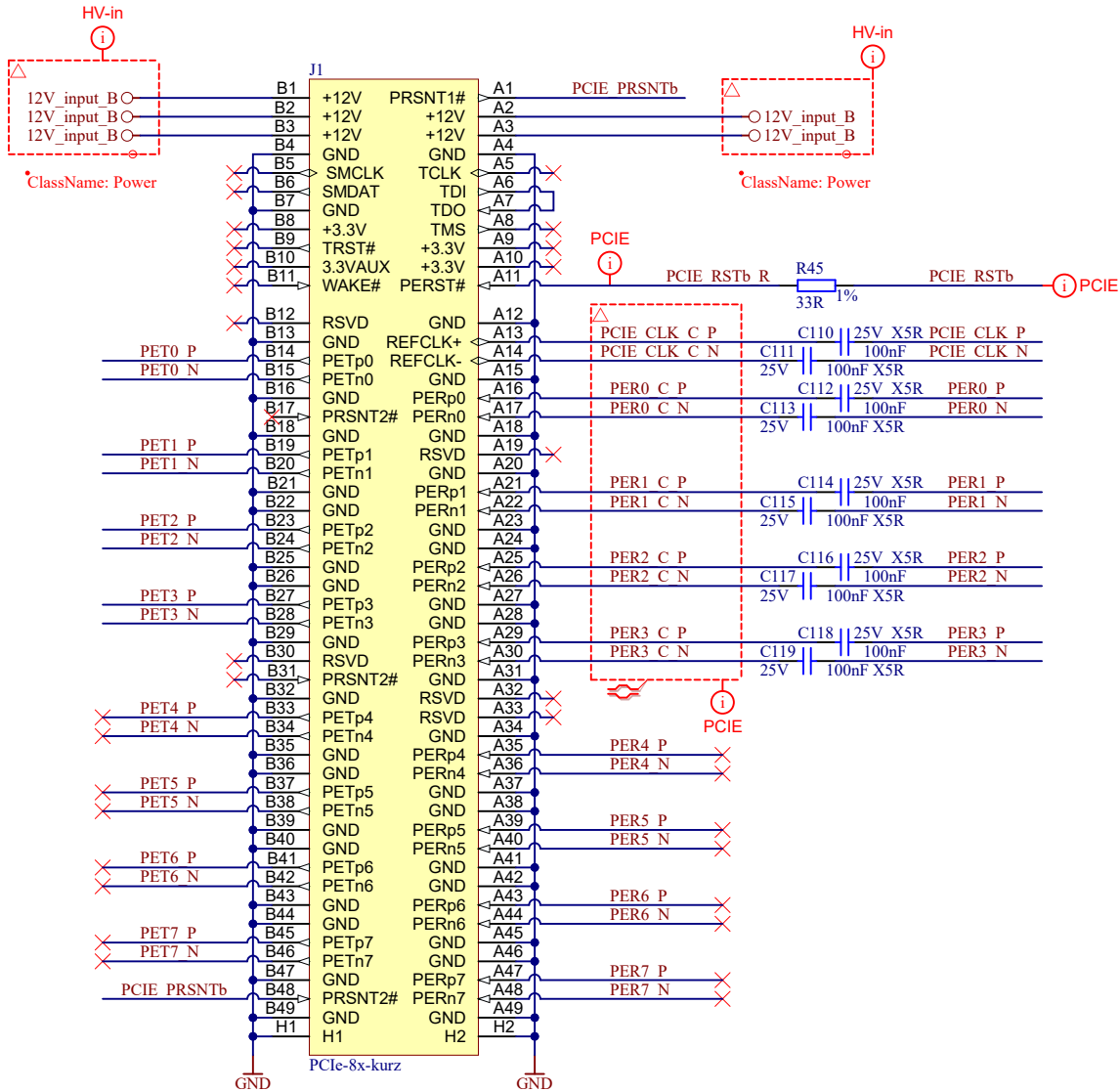



VS2 | VS1 | VS0 | Output Voltage

0	0	0	3.3V
0	0	1	2.5V
0	1	0	1.8V
0	1	1	1.5V
1	0	0	1.25V
1	0	1	1.2V



Title: TEF1001 - FMC_PWR			
A4	Number: TEF1001 B2IX4-A	Rev. 02	
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 7 of 33	
Filename: FMC_PWR.SchDoc			



		Title: TEF1001 - PCIE CONNECTOR	
		A4	Number: TEF1001 B2IX4-A
Date: 2018-02-26		Copyright: Trenz Electronic GmbH	
Page 8		of 33	
Filename: PCIE_CONN.SchDoc			

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U_FPGA_BANK_12
FPGA_BANK_12.SchDoc

U_FPGA_MGT_BANKS
FPGA_MGT_BANKS.SchDoc

U_FPGA_BANK_13
FPGA_BANK_13.SchDoc

U_FPGA_CFG
FPGA_CFG.SchDoc

U_FPGA_BANK_14
FPGA_BANK_14.SchDoc

U_DDR_Banks
DDR_Banks.SchDoc

U_FPGA_BANK_15
FPGA_BANK_15.SchDoc

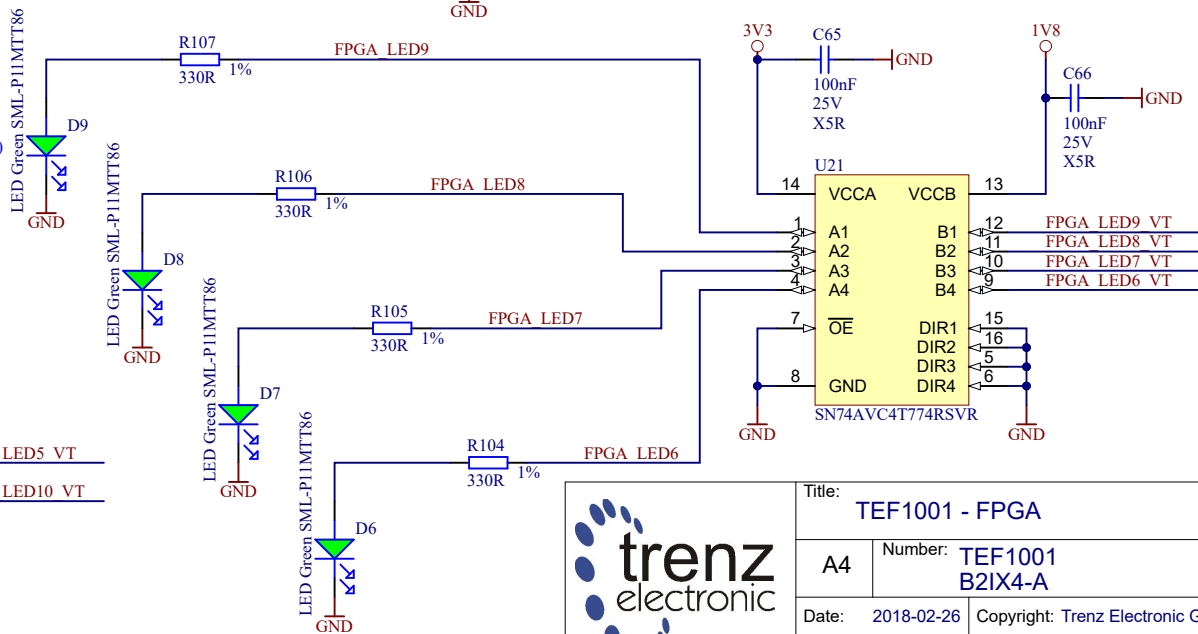
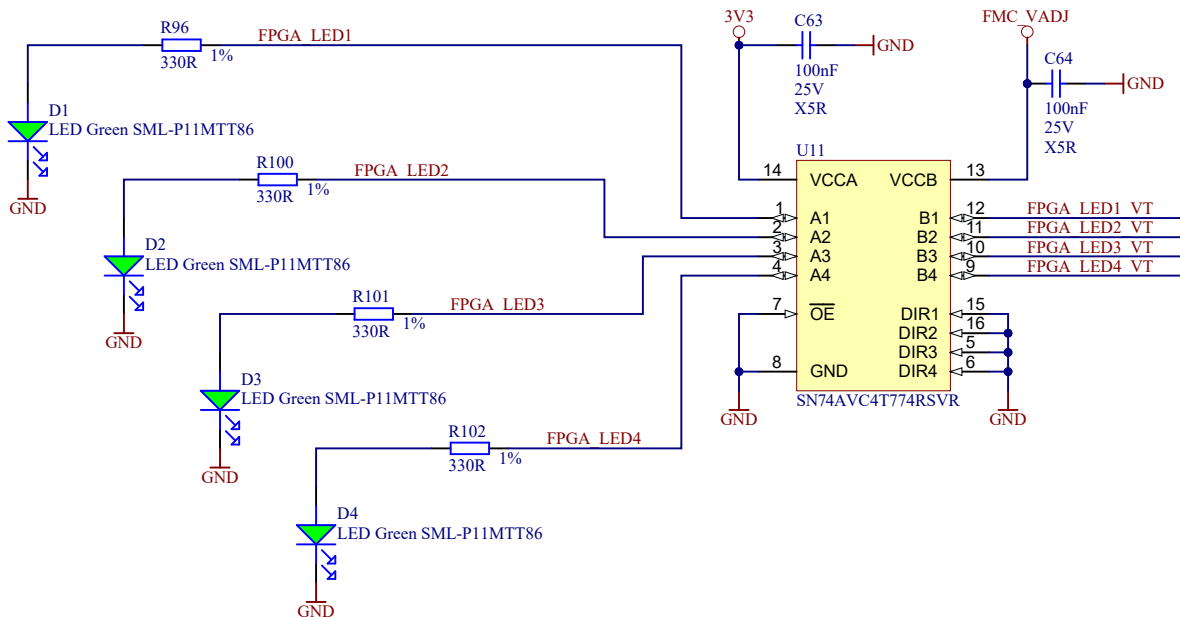
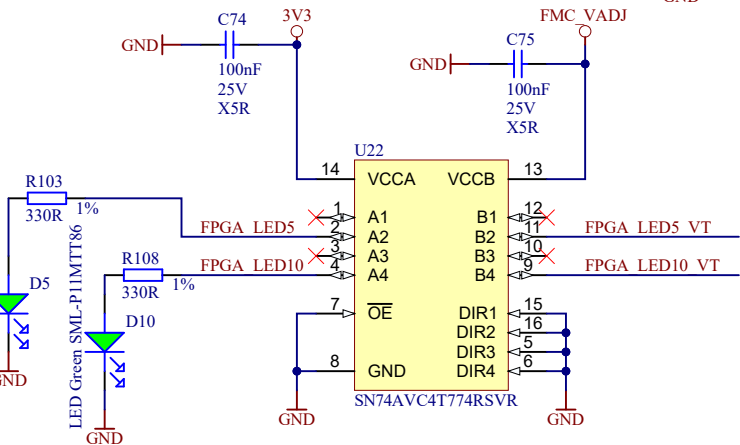
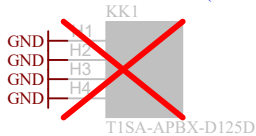
U_FPGA_POWER
FPGA_POWER.SchDoc

U_FPGA_BANK_16
FPGA_BANK_16.SchDoc

HEATSINK TYPE 2 (FPGA)



HEATSINK TYPE 1 (FPGA)



Title: TEF1001 - FPGA		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page9 of 33
Filename: FPGA.SchDoc		

A

A

B

B

C

C

D

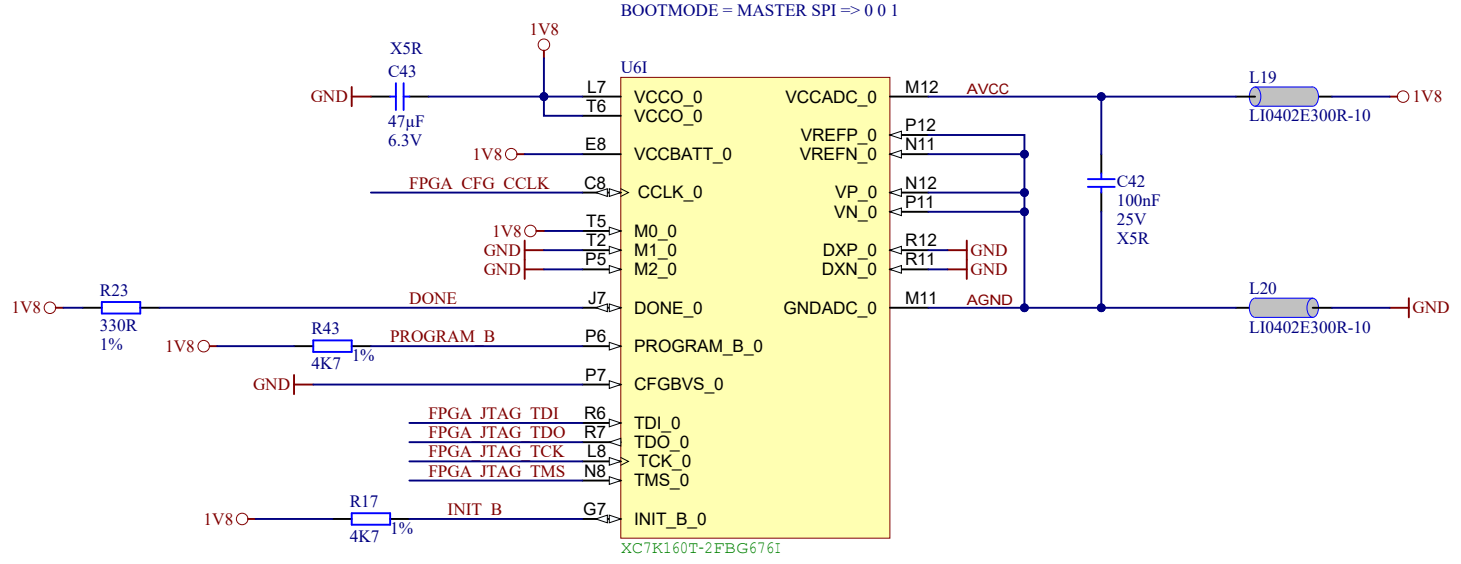
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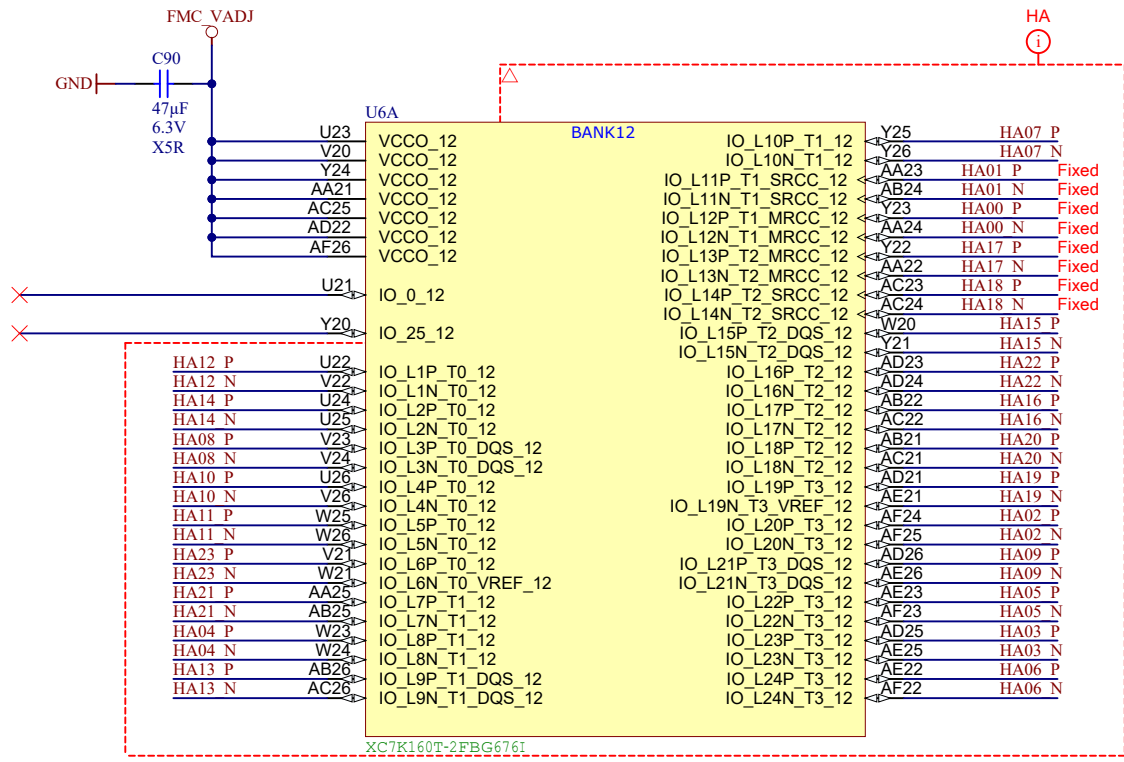

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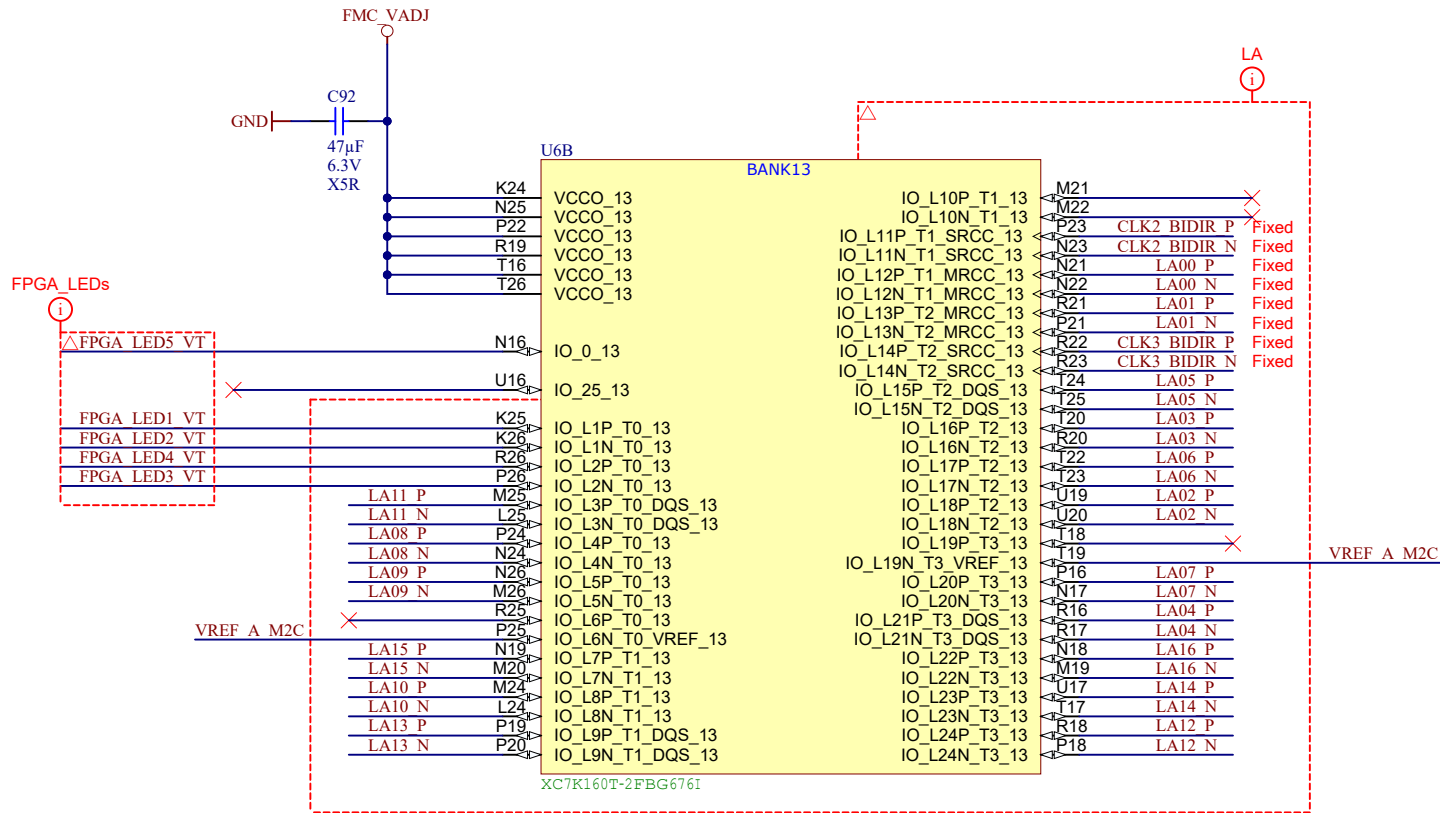
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	A4	Number: TEF1001 B2IX4-A
	Date: 2018-02-26	Copyright: Trenz Electronic GmbH
	Filename: FPGA_CFG.SchDoc	
	Rev. 02	Page 10 of 33

Title: TEF1001 - FPGA_BANK_12		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 11 of 33
Filename: FPGA_BANK_12.SchDoc		



Title: TEF1001 - FPGA_BANK_13		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 12 of 33
Filename: FPGA_BANK_13.SchDoc		

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A

A

B

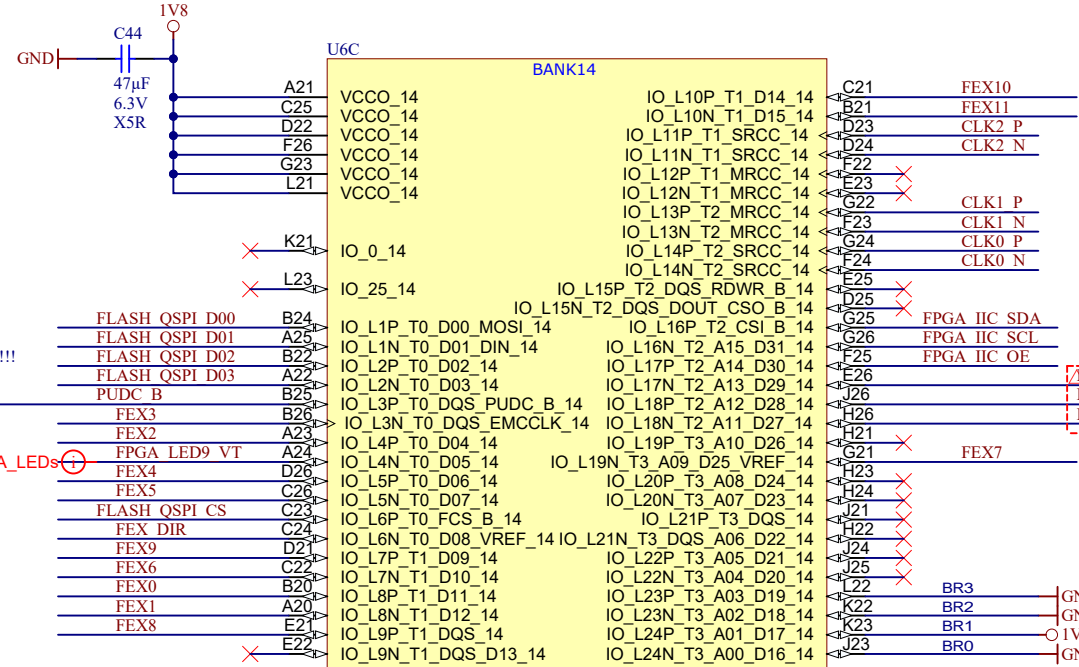
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C

C

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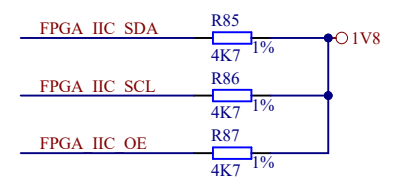
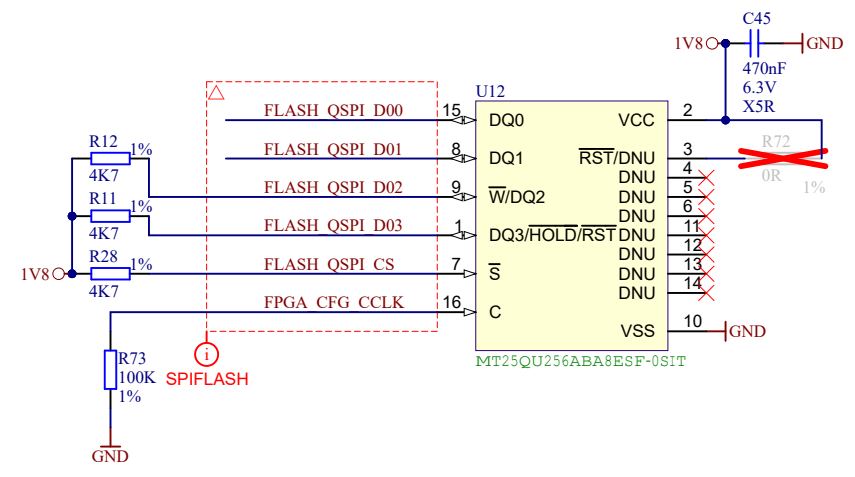
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XC7K160T-2FBG676I

Board Revisions

BR0	BR1	BR2	BR3	
1	0	0	0	REV01
0	1	0	0	REV02



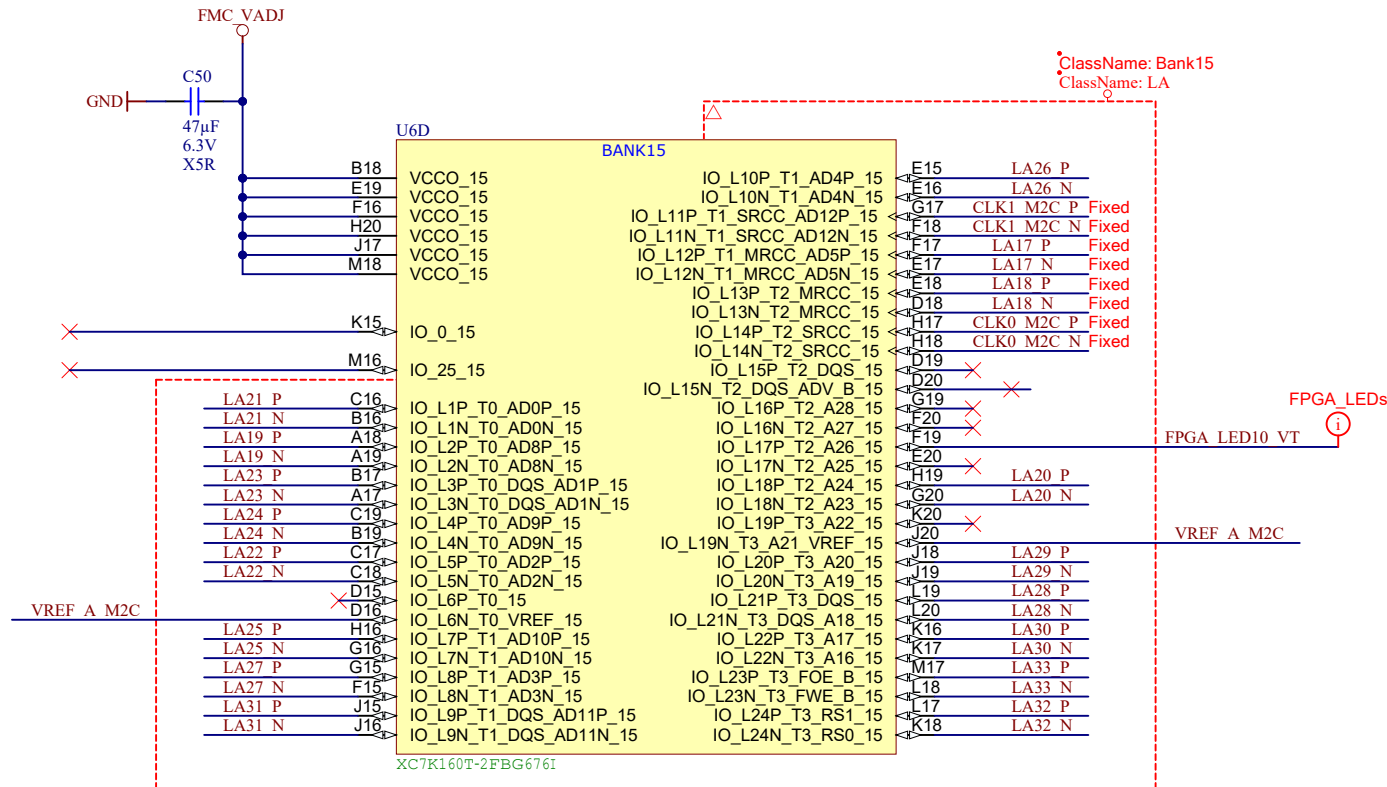
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Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page13 of 33
Filename: FPGA_BANK_14.SchDoc		

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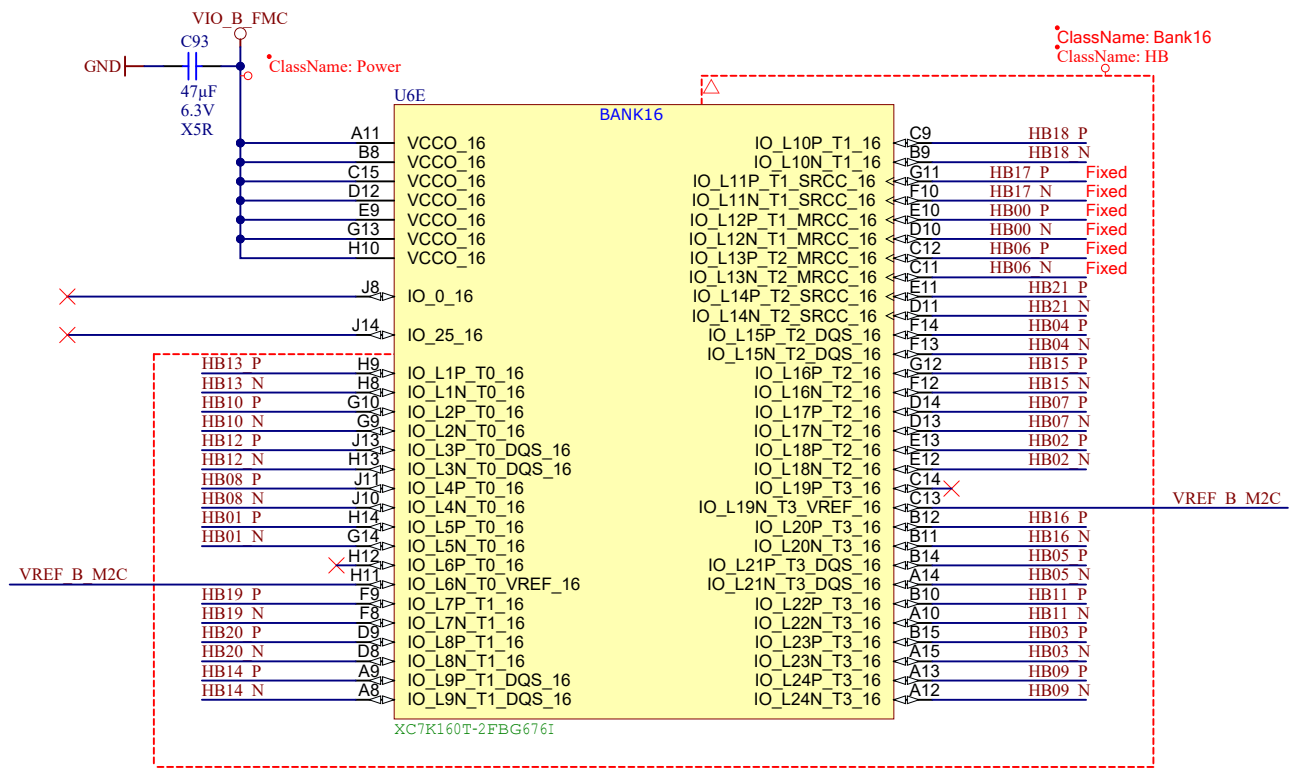
2

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A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 14 of 33
Filename: FPGA_BANK_15.SchDoc		



Title: TEF1001 - FPGA_BANK_16		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 15 of 33
Filename: FPGA_BANK_16.SchDoc		

1

2

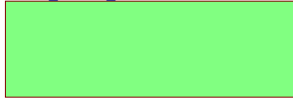
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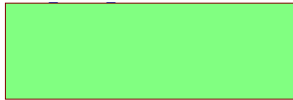
A

A

U_FPGA_BANK_32
FPGA_BANK_32.SchDoc



U_FPGA_BANK_33
FPGA_BANK_33.SchDoc



U_FPGA_BANK_34
FPGA_BANK_34.SchDoc



B


B

C

C

D

D

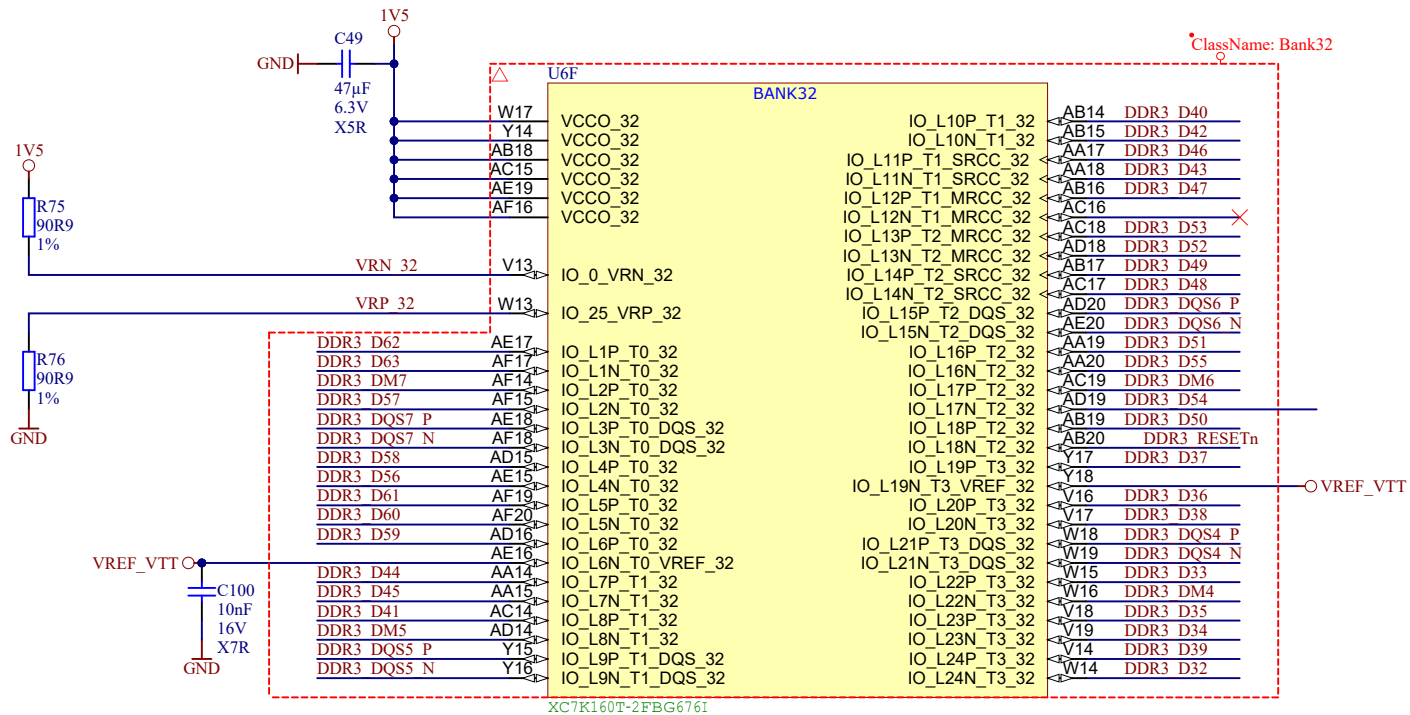
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Date: 2018-02-26		Copyright: Trenz Electronic GmbH	
Filename: DDR_Banks.SchDoc		Page 16 of 33	

1

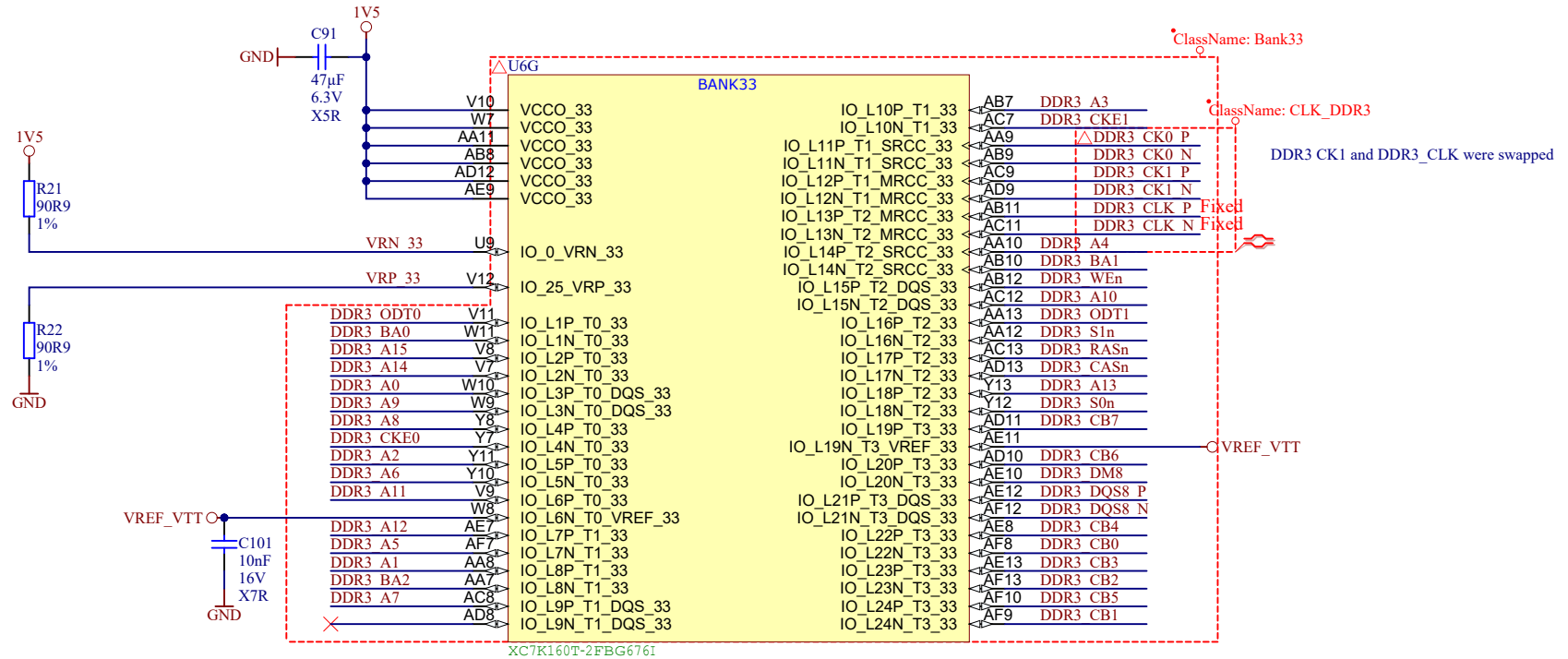
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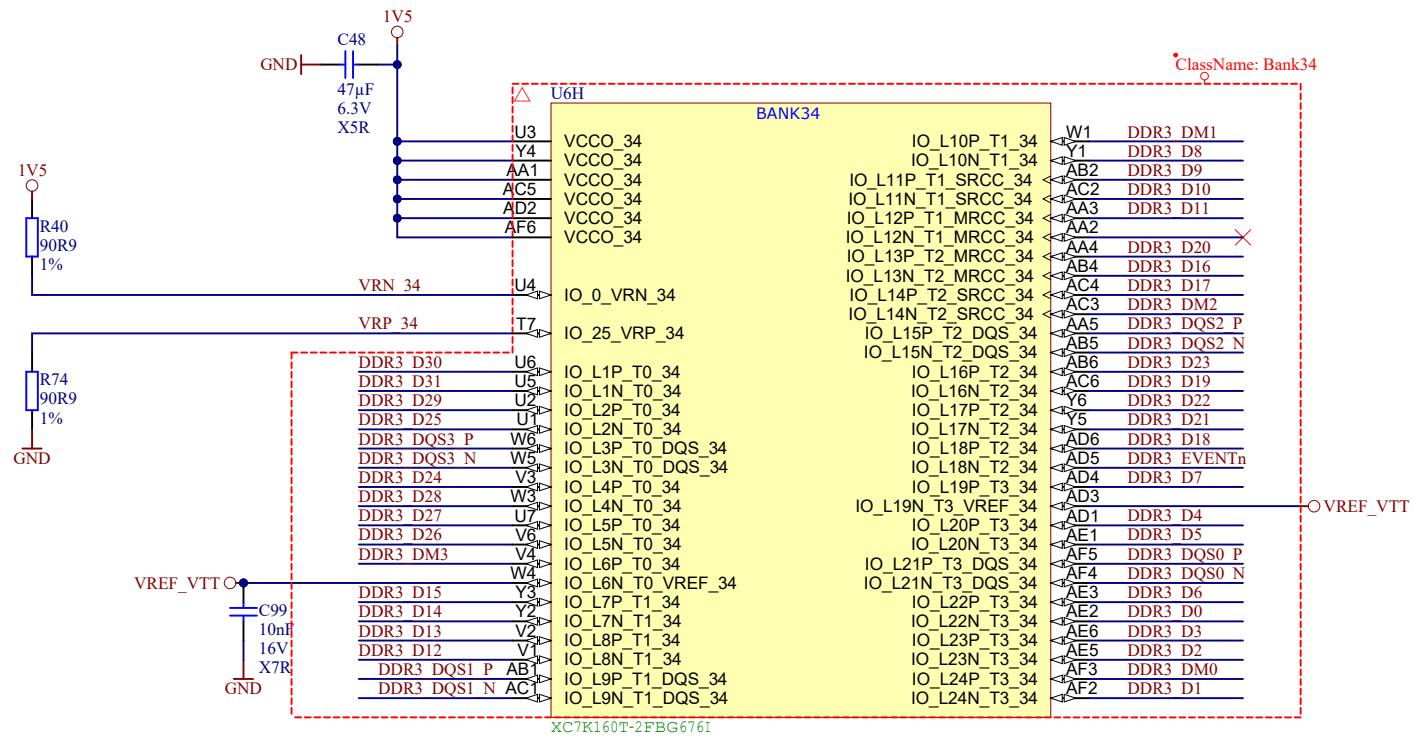
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Title: TEF1001 - FPGA_BANK_32		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 17 of 33
Filename: FPGA_BANK_32.SchDoc		



Title: TEF1001 - FPGA_BANK_33		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 18 of 33
Filename: FPGA_BANK_33.SchDoc		



Title: TEF1001 - FPGA_BANK_34		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 19 of 33
Filename: FPGA_BANK_34.SchDoc		

A

A

B

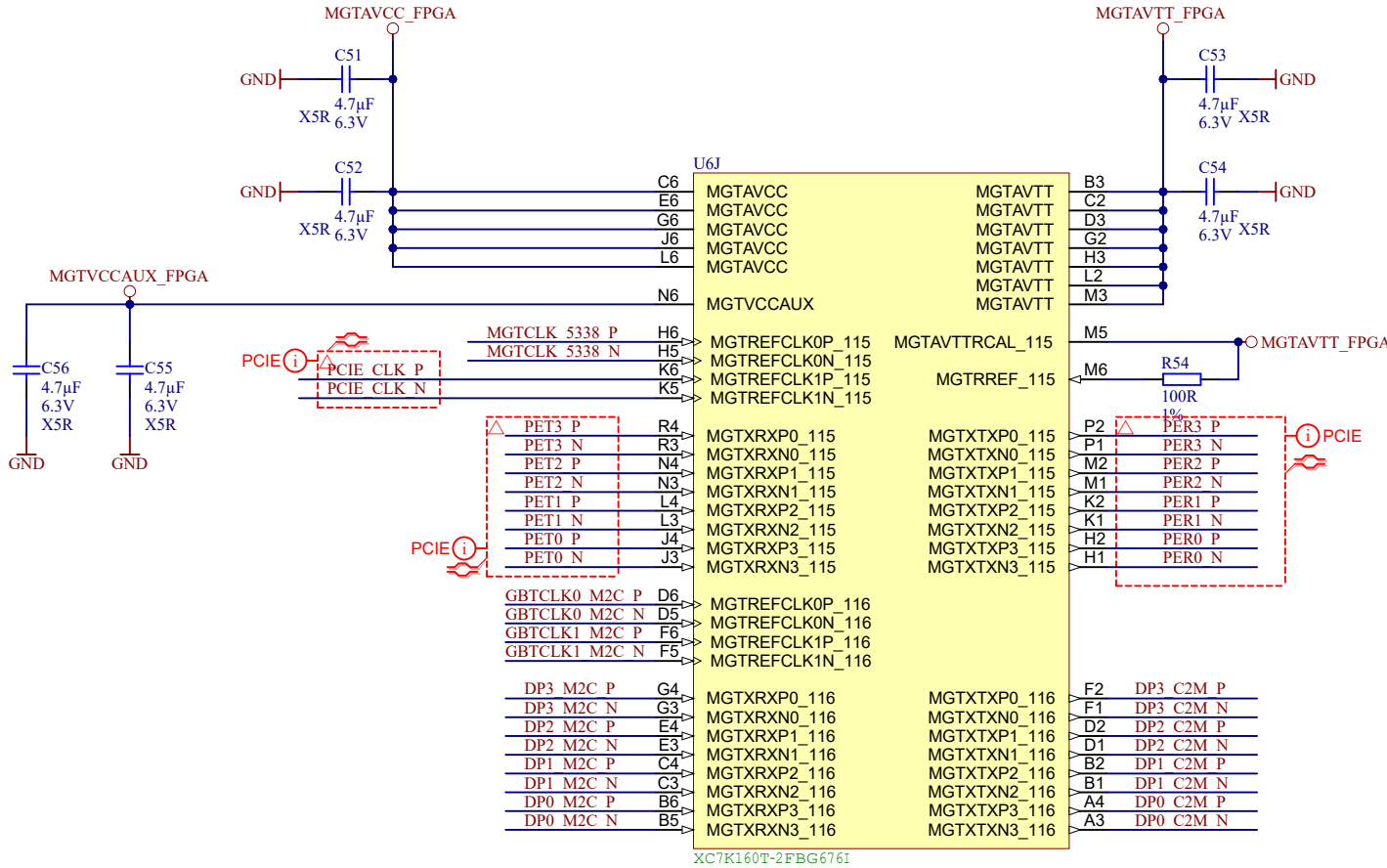
B

C

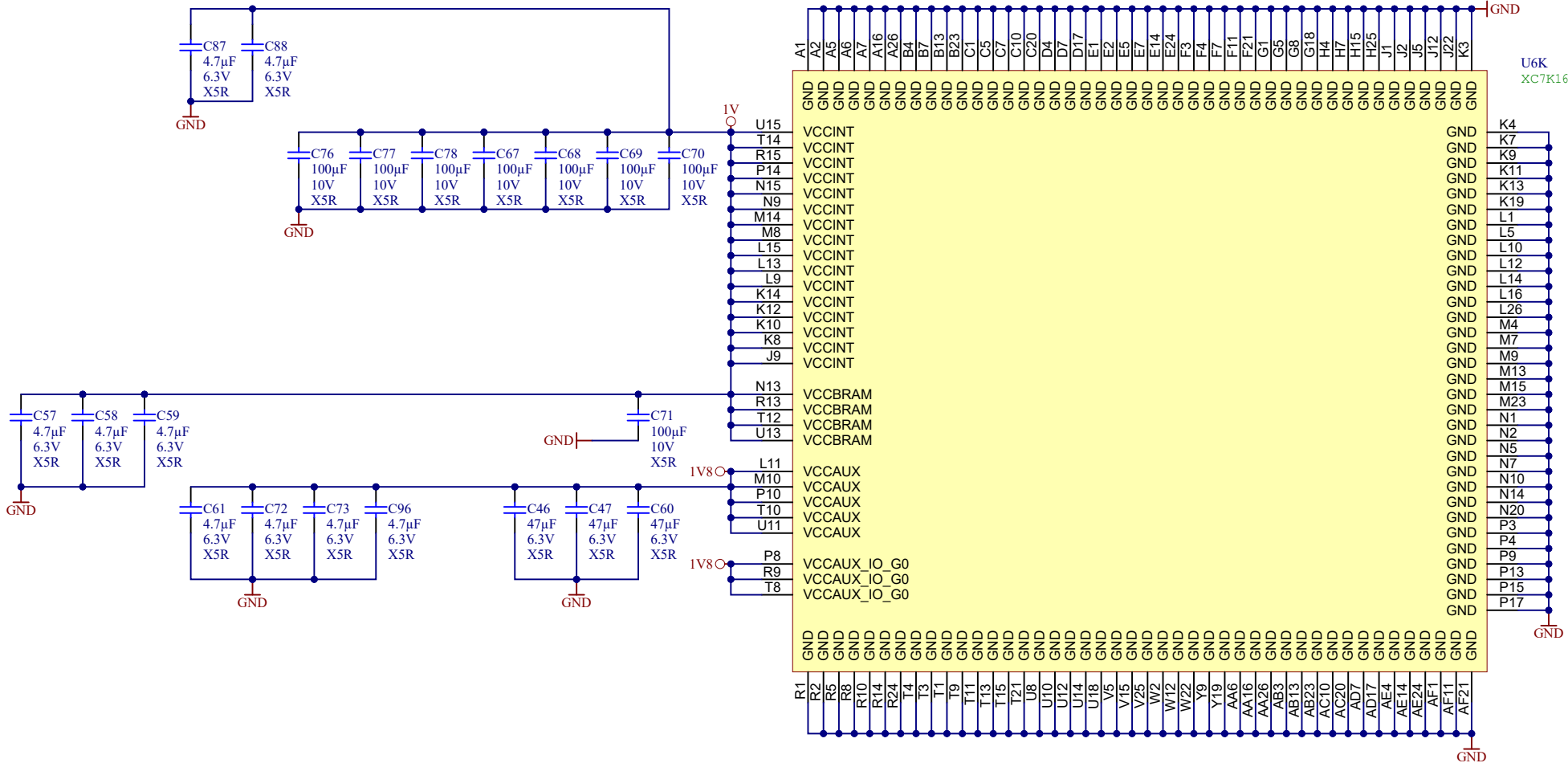
C


D

D



Title: TEF1001_FPGA_MGT_BANKS		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 20 of 33
Filename: FPGA_MGT_BANKS.SchDoc		



	Title: TEF1001 - FPGA_POWER		
	A4	Number: TEF1001 B2IX4-A	Rev. 02
	Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page21 of 33
	Filename: FPGA_POWER.SchDoc		

A

B

C

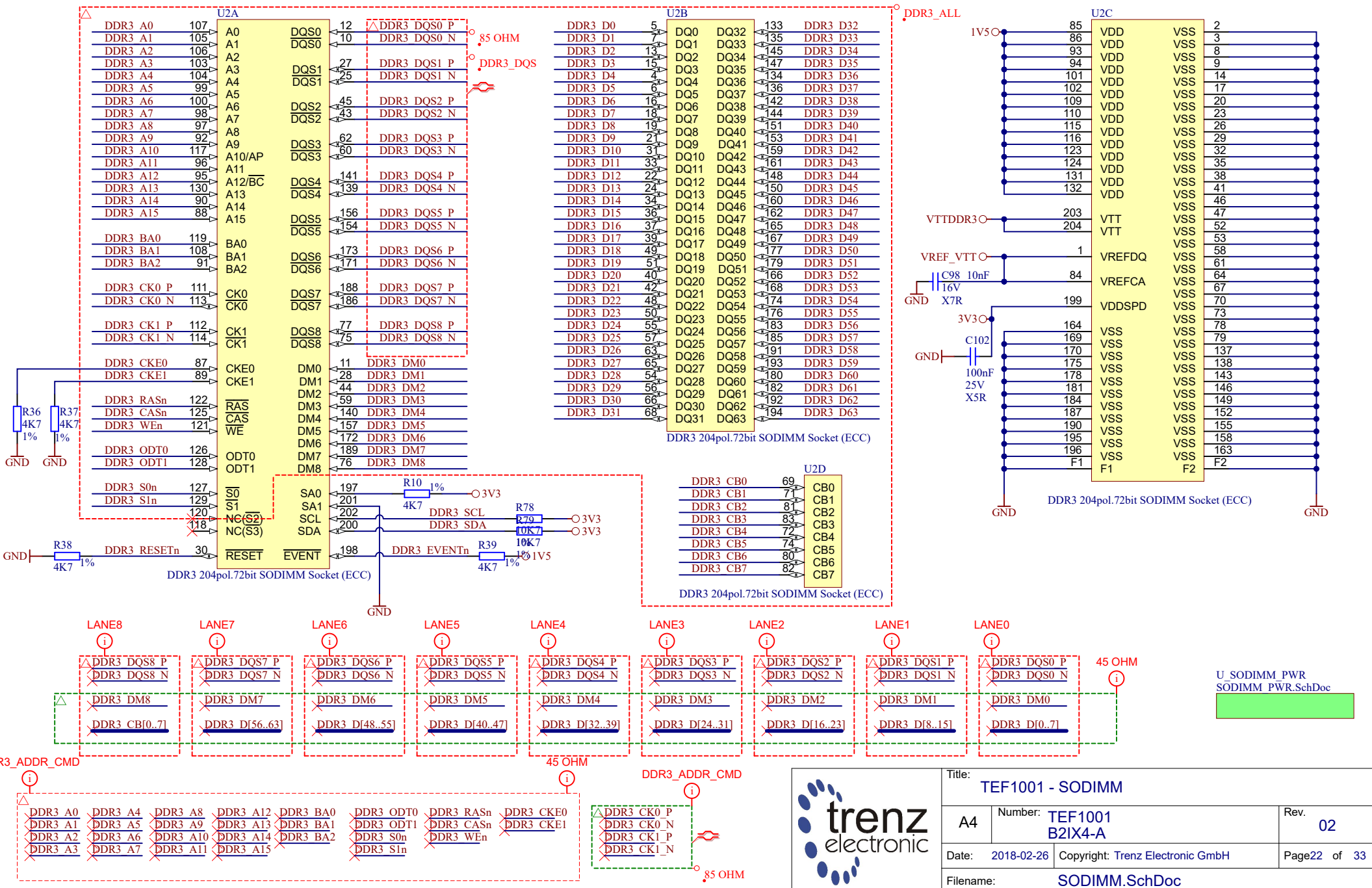
D

A

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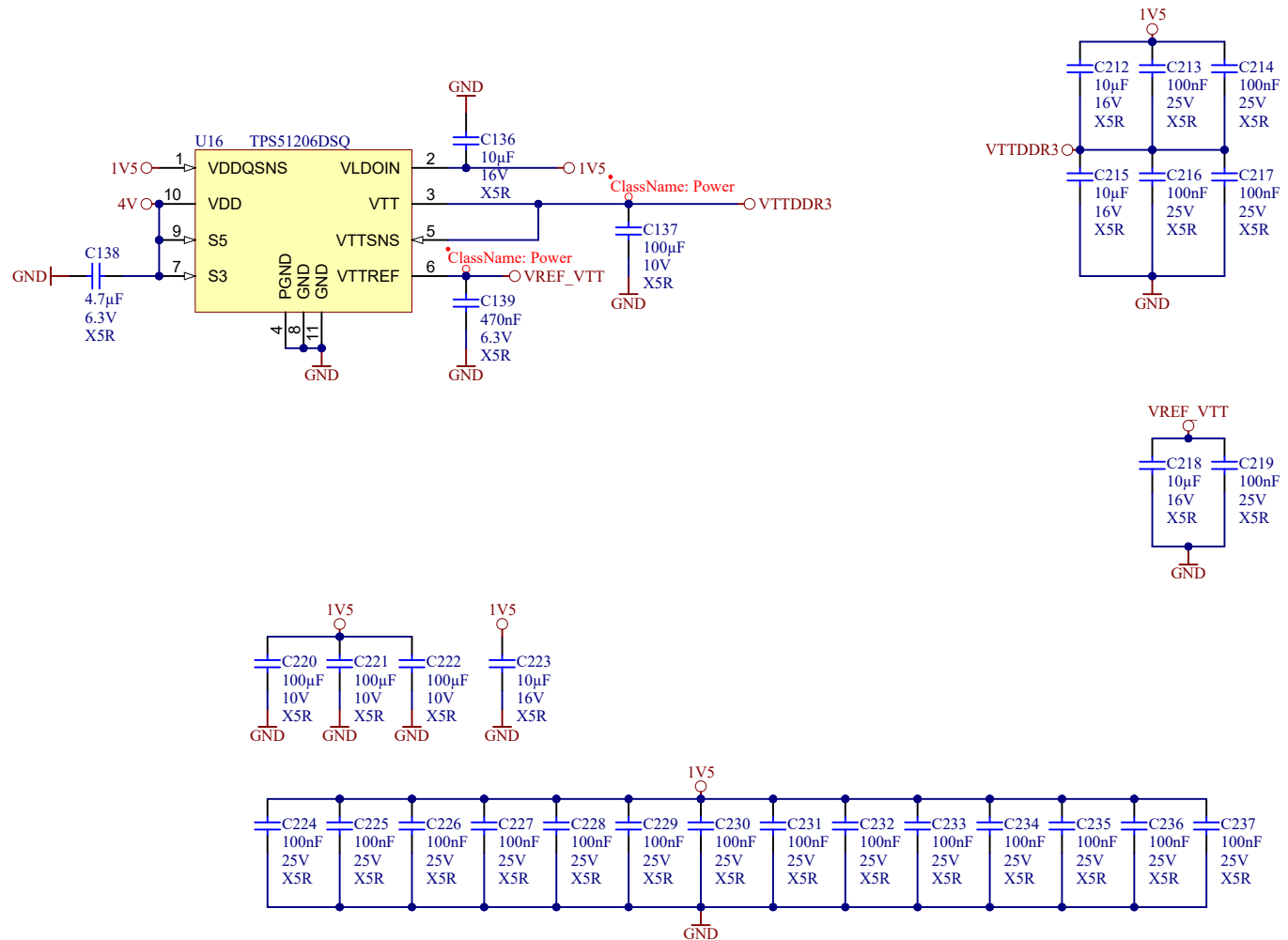
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U_SODIMM_PWR
SODIMM_PWR.SchDoc



Title: TEF1001 - SODIMM		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 22 of 33
Filename: SODIMM.SchDoc		



Title: TEF1001 - SODIMM_PWR		
A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page23 of 33
Filename: SODIMM_PWR.SchDoc		

U_PWR_4V_1V5
PWR_4V_1V5.SchDoc

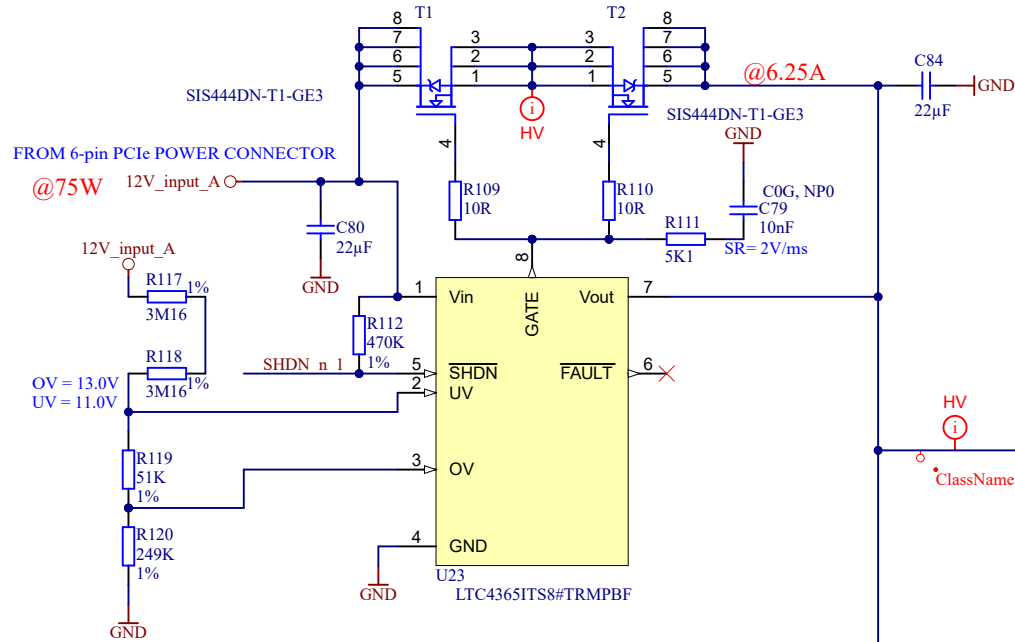
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PWR_3V3.SchDoc

U_PWR_1V
PWR_1V.SchDoc

U_PWR_MGT
PWR_MGT.SchDoc

U_PWR_1V8
PWR_1V8.SchDoc

U_PWR_5V
PWR_5V.SchDoc



FAN FPGA

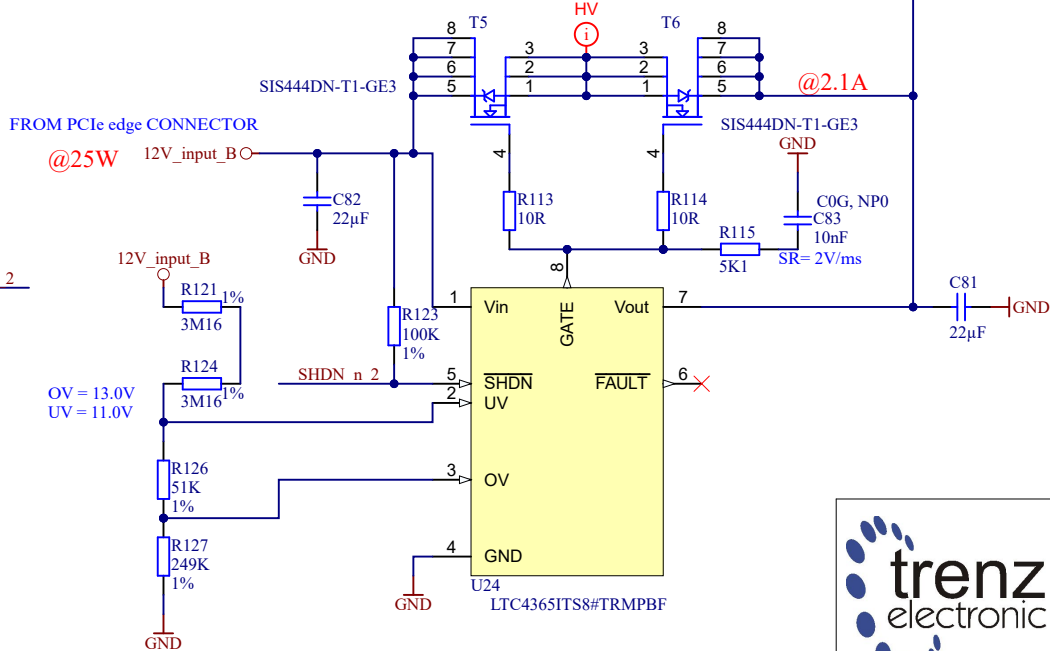
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U4 REGULATOR 1V MIN5.75V MAX26.5V

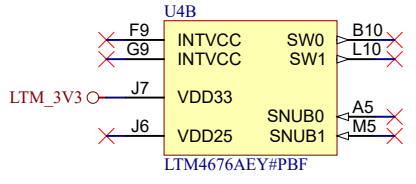
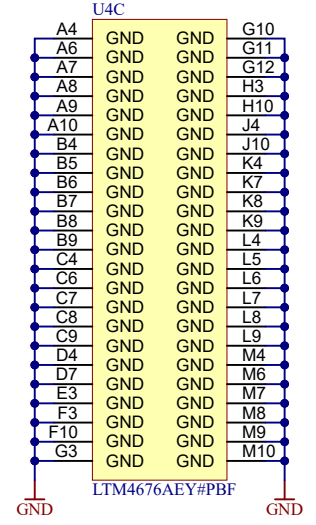
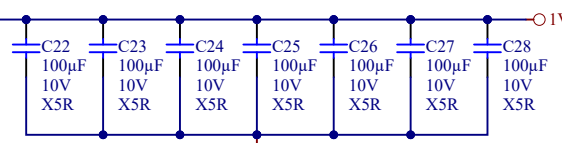
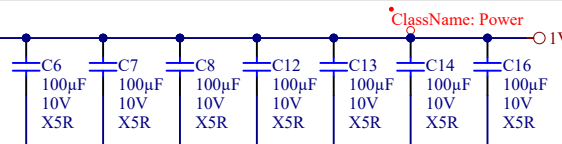
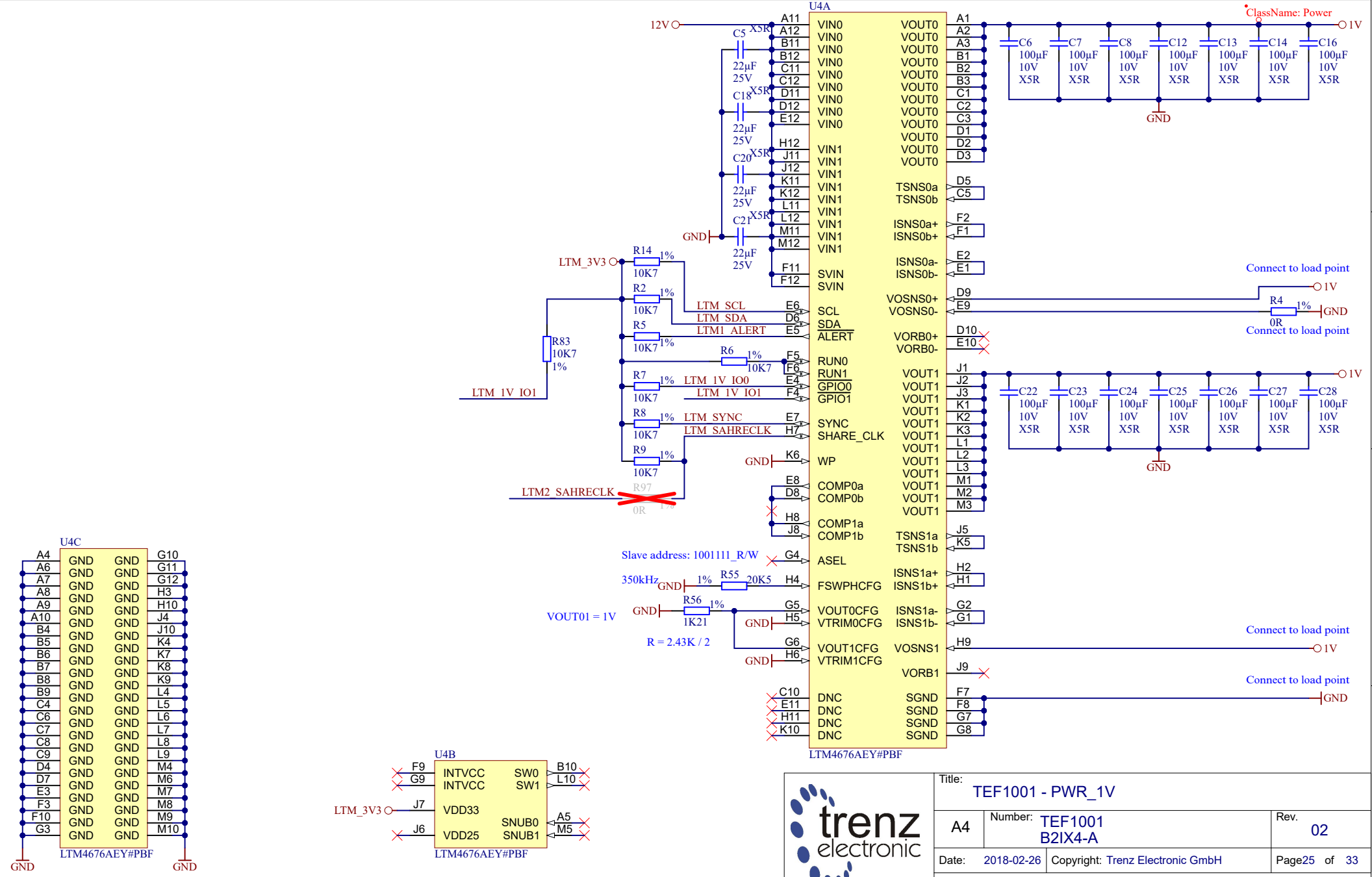
U3 REGULATOR 4V&1V5 MIN5.75V MAX26.5V

U9 REGULATOR 3V3 MIN4.5V MAX17V

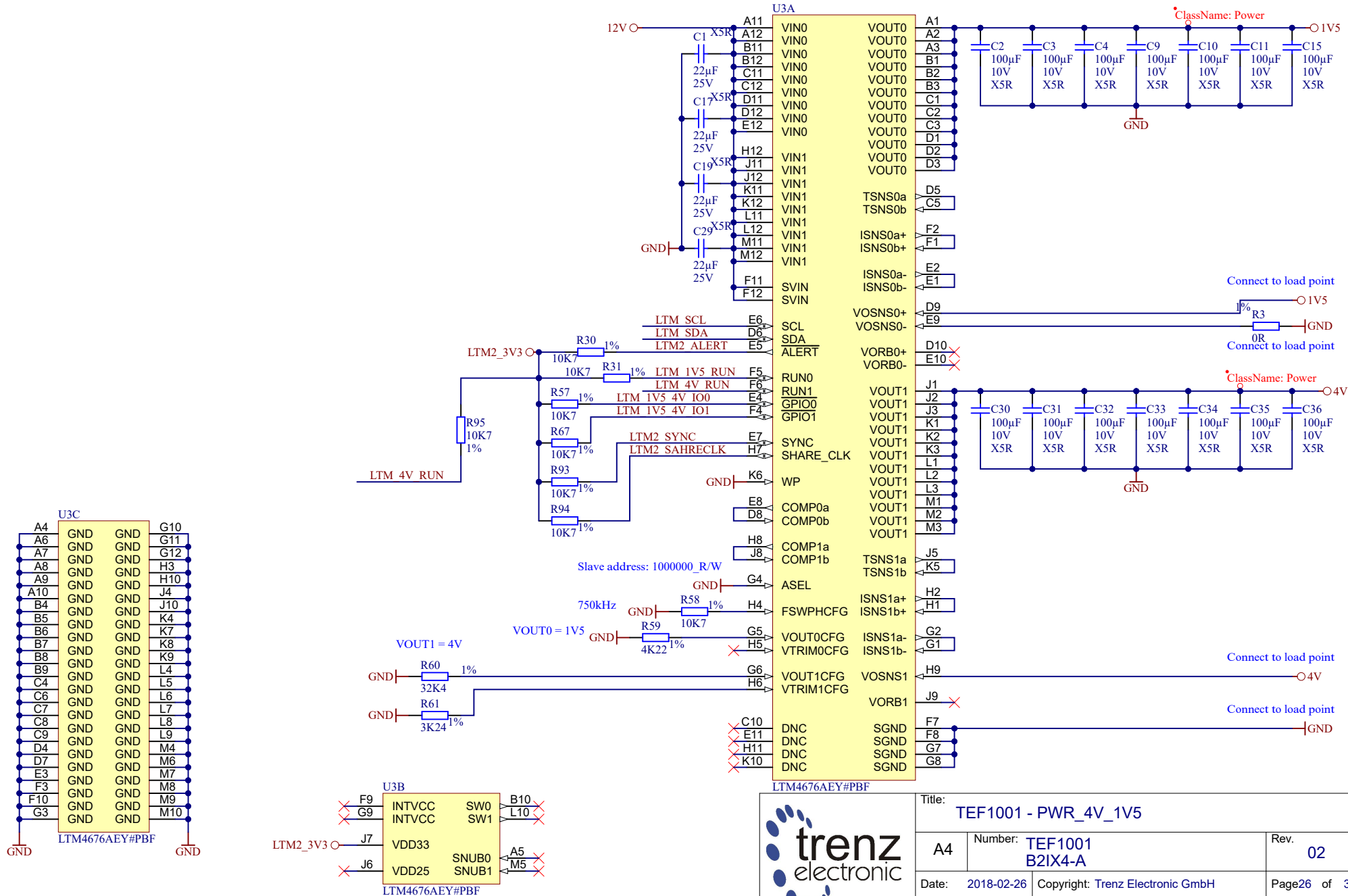
U8 REGULATOR 5V MIN6V MAX17V



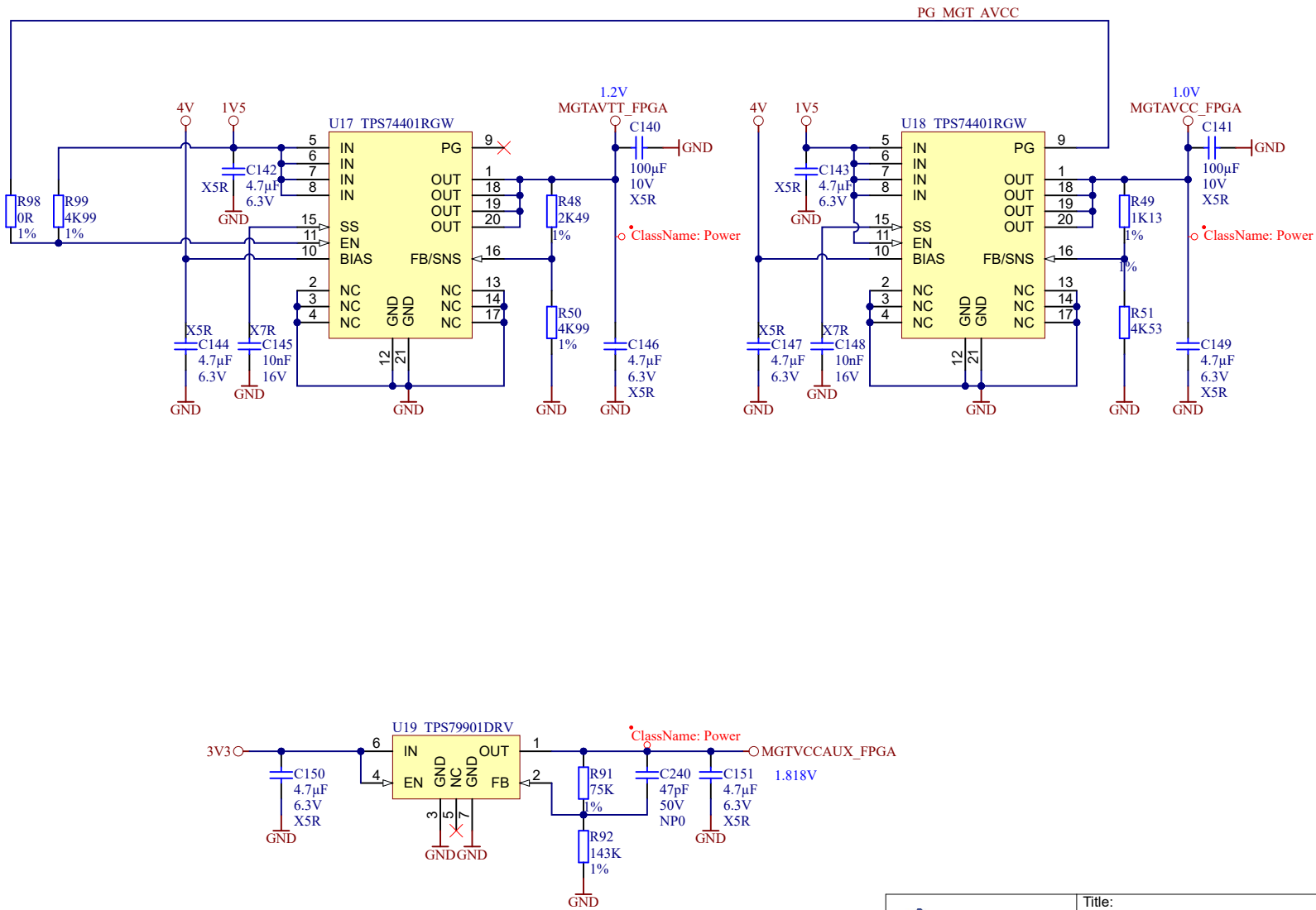
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Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page24 of 33
Filename: POWER.SchDoc		



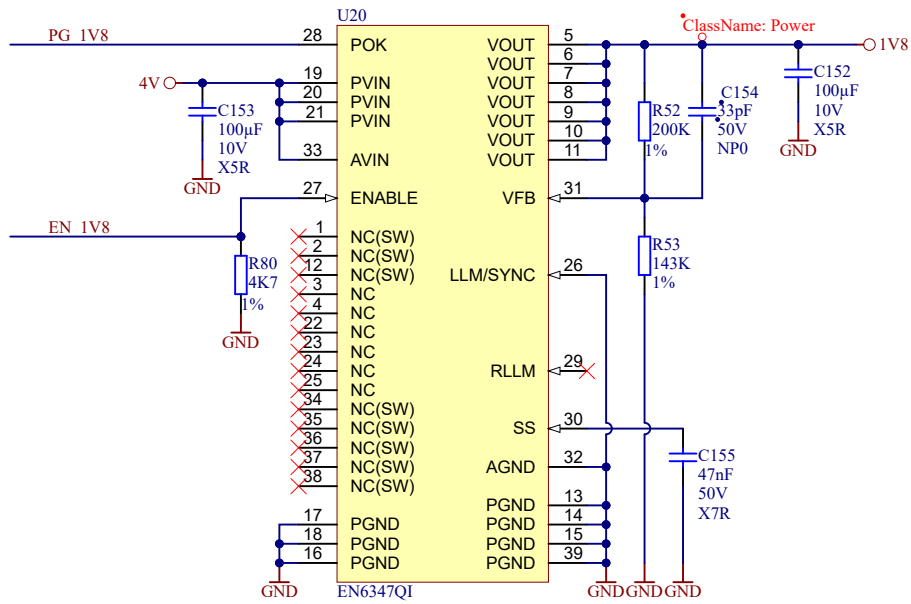
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Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 25 of 33
Filename: PWR_1V.SchDoc		




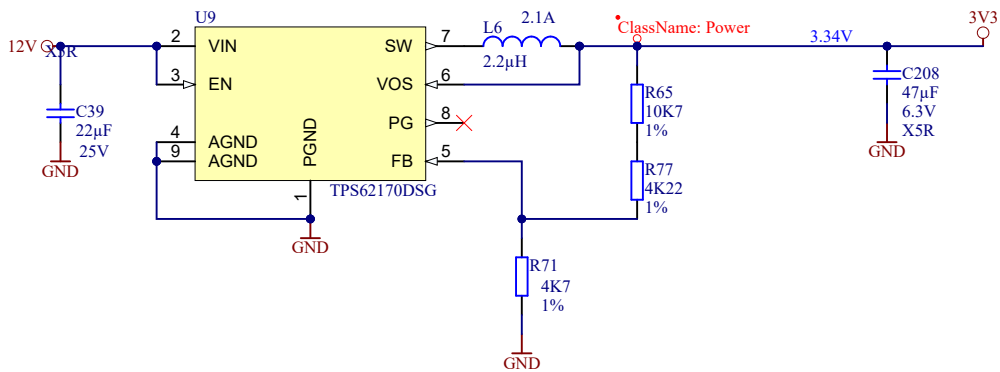
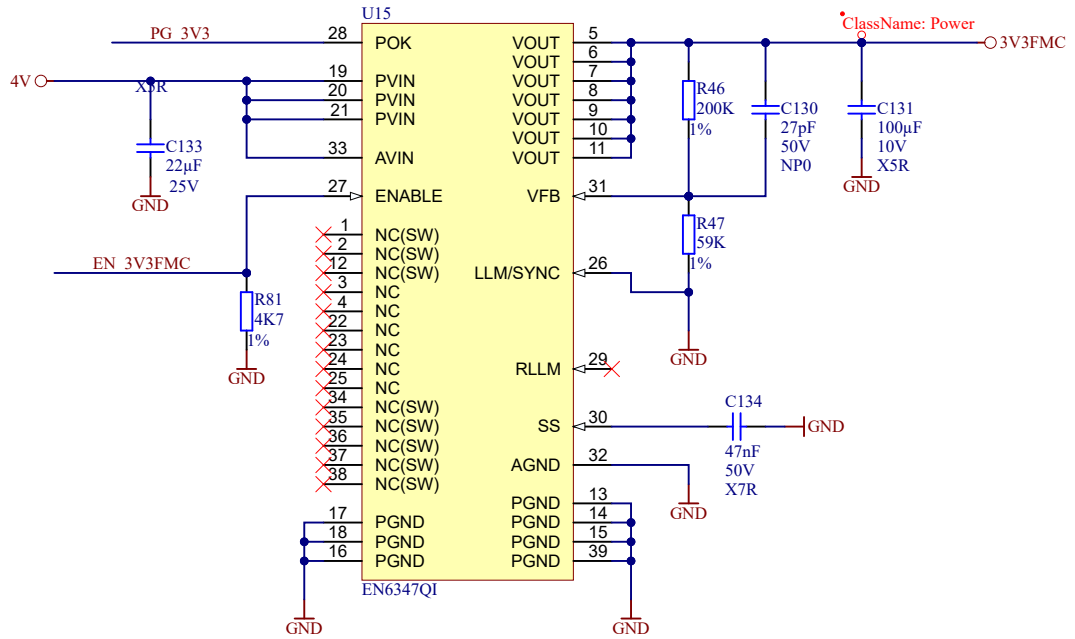
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A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 26 of 33
Filename: PWR_4V_1V5.SchDoc		



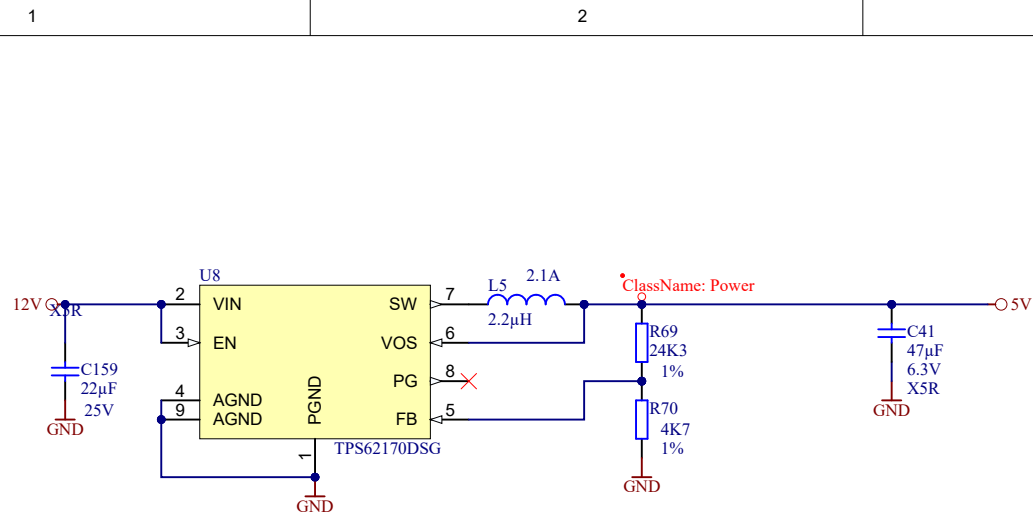
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A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 27 of 33
Filename: PWR_MGT.SchDoc		




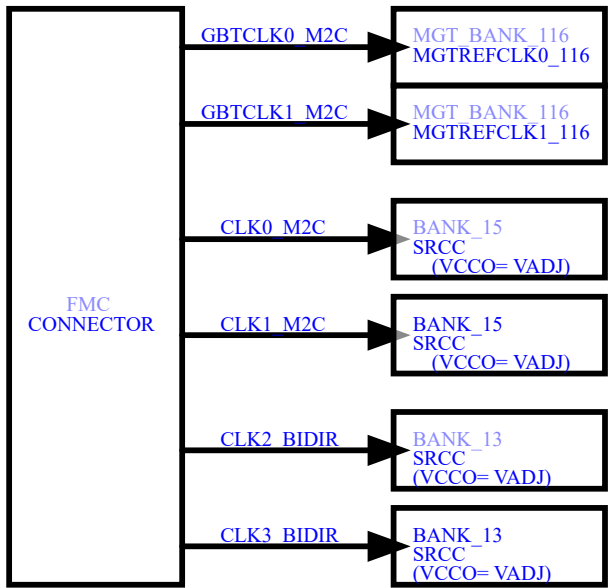
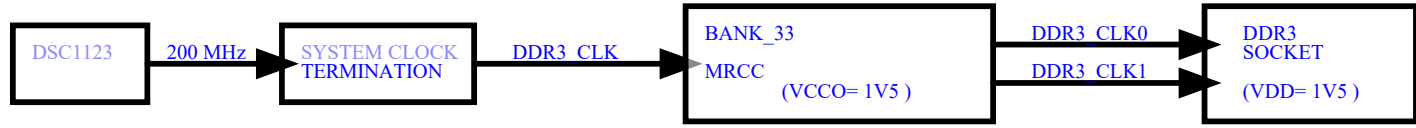
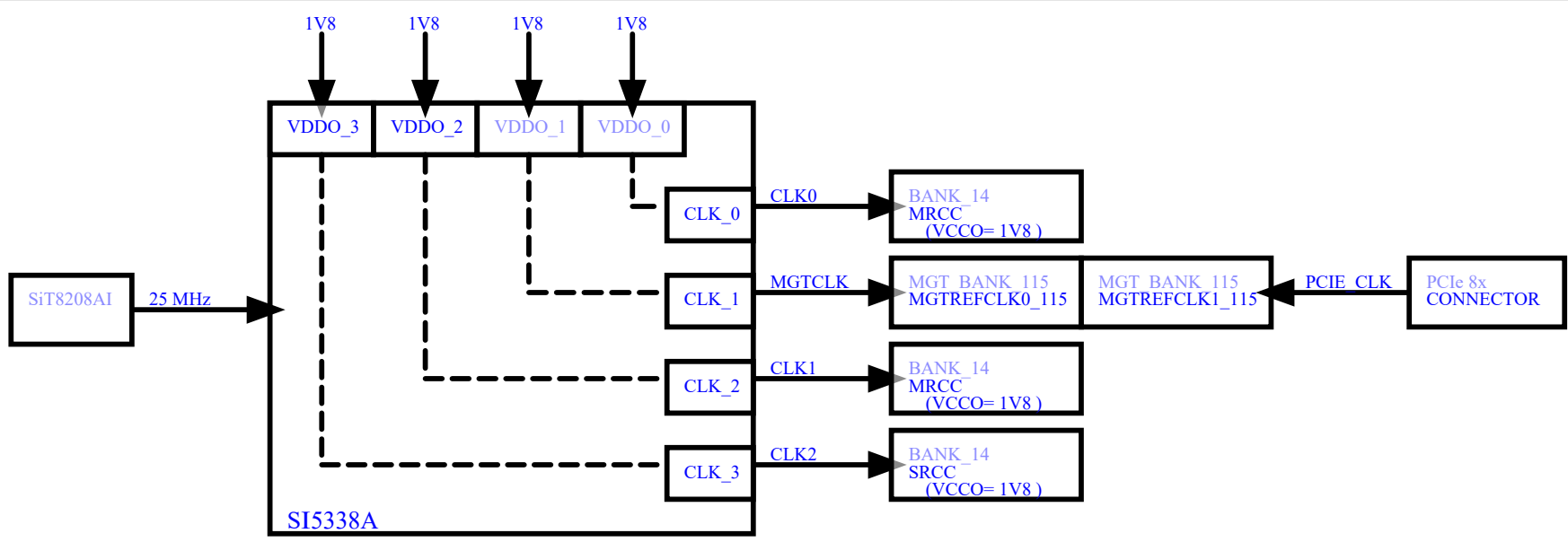
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Date: 2018-02-26		Copyright: Trenz Electronic GmbH		Page 28 of 33
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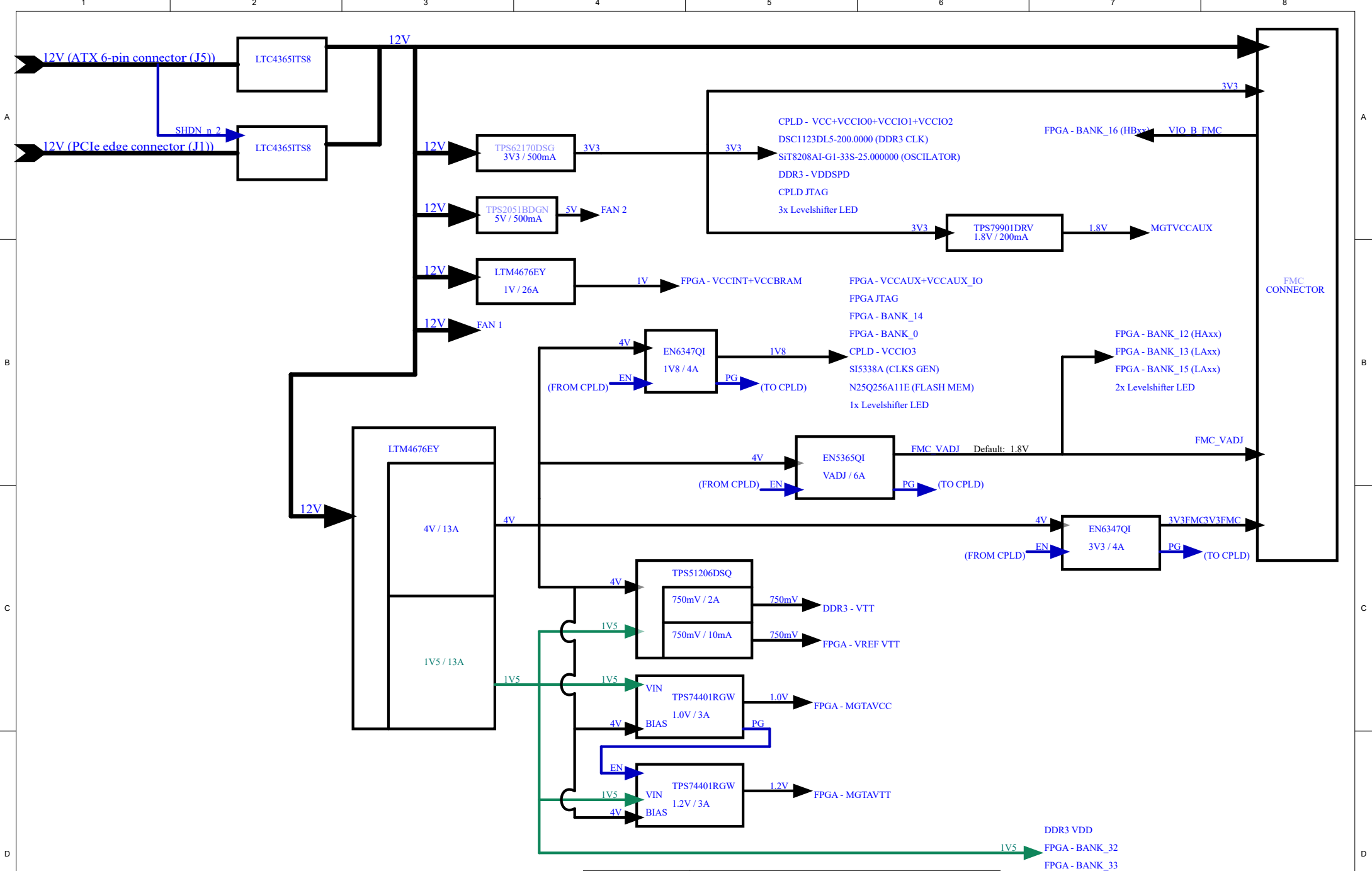
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A4	Number: TEF1001 B2IX4-A	Rev. 02
Date: 2018-02-26	Copyright: Trenz Electronic GmbH	Page 29 of 33
Filename: PWR_3V3.SchDoc		



		Title: TEF1001 - PWR_5V	
		A4	Number: TEF1001 B2IX4-A
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Filename: PWR_5V.SchDoc		Page30 of 33	



Title: TEF1001 - Clock Overview		
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Revision 02:

- 1) added C87, C88 4.7µF
- 2) C154 incremented from 27pF to 33pF
- 3) route 12V input from PCIe edge connector, added input power protection circuits for ATX 12V and PCIe edge connector (U23 with T1, T2 and U24 with T5, T6, resistors and capacitors), power priority switch T3, (priority for ATX)
- 4) added S1 (FMC_VADJ value, and JTAG_EN)
- 5) T4 and resistors added for reading the FMC_PRSNM2C value
- 6) U25 and capacitors added (FMC_FAN)
- 7) added screws for bracket
- 8) added 10 x FPGA LEDs D1-D10 via levelshifter (U11, U21, U22)

Revision 02a (2020-04-15):

- 1) VY: New FAN M1, F455B-05MD replaced by F455B-05LD

		Title: TEF1001 - Revision history		
		A4	Number: TEF1001 B2IX4-A	Rev. 02
		Date: 2018-11-19	Copyright: Trenz Electronic GmbH	Page 33 of 33
		Filename: Revision_Changes.SchDoc		