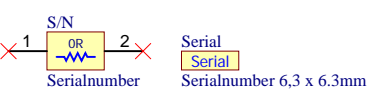
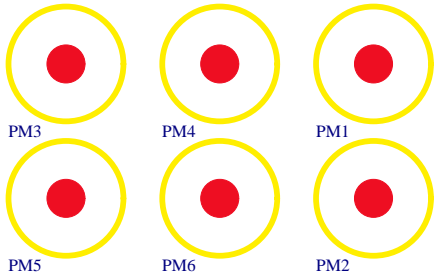
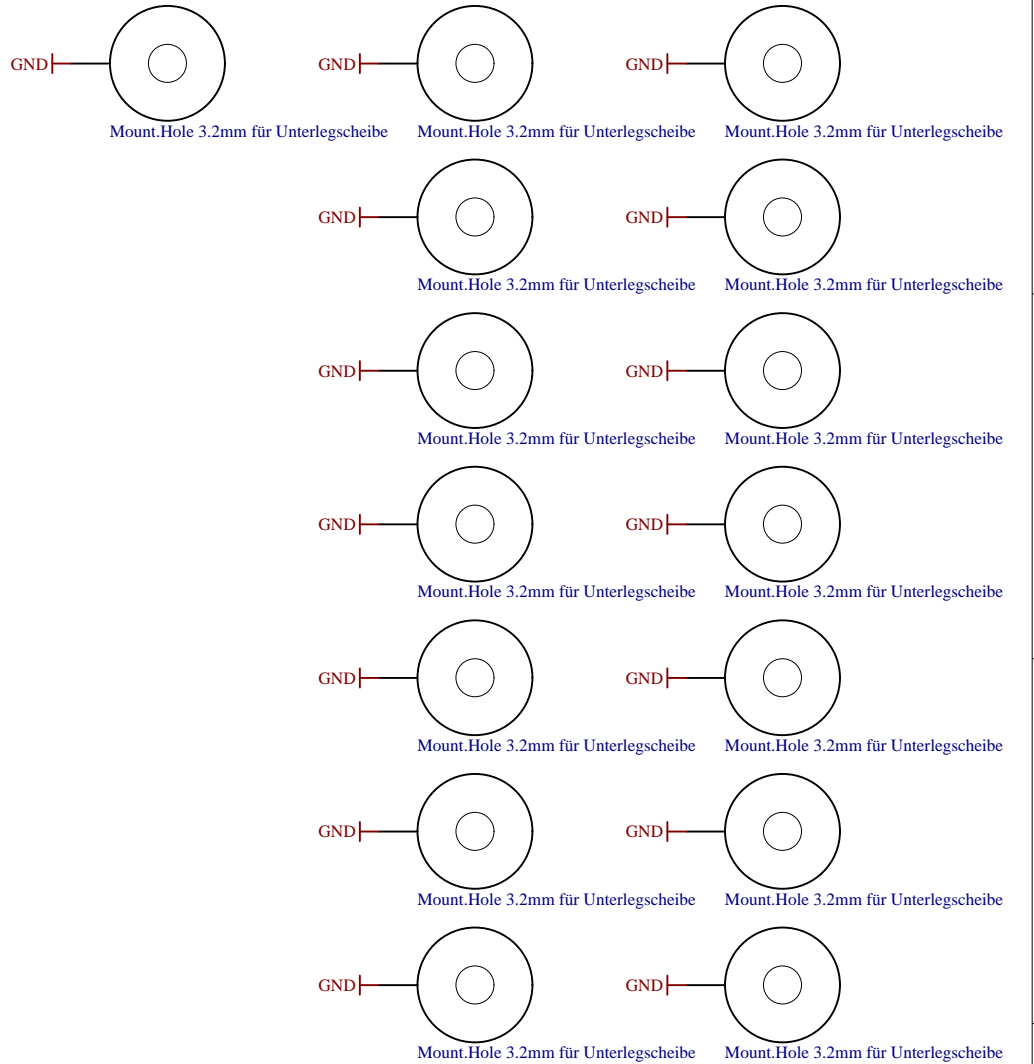


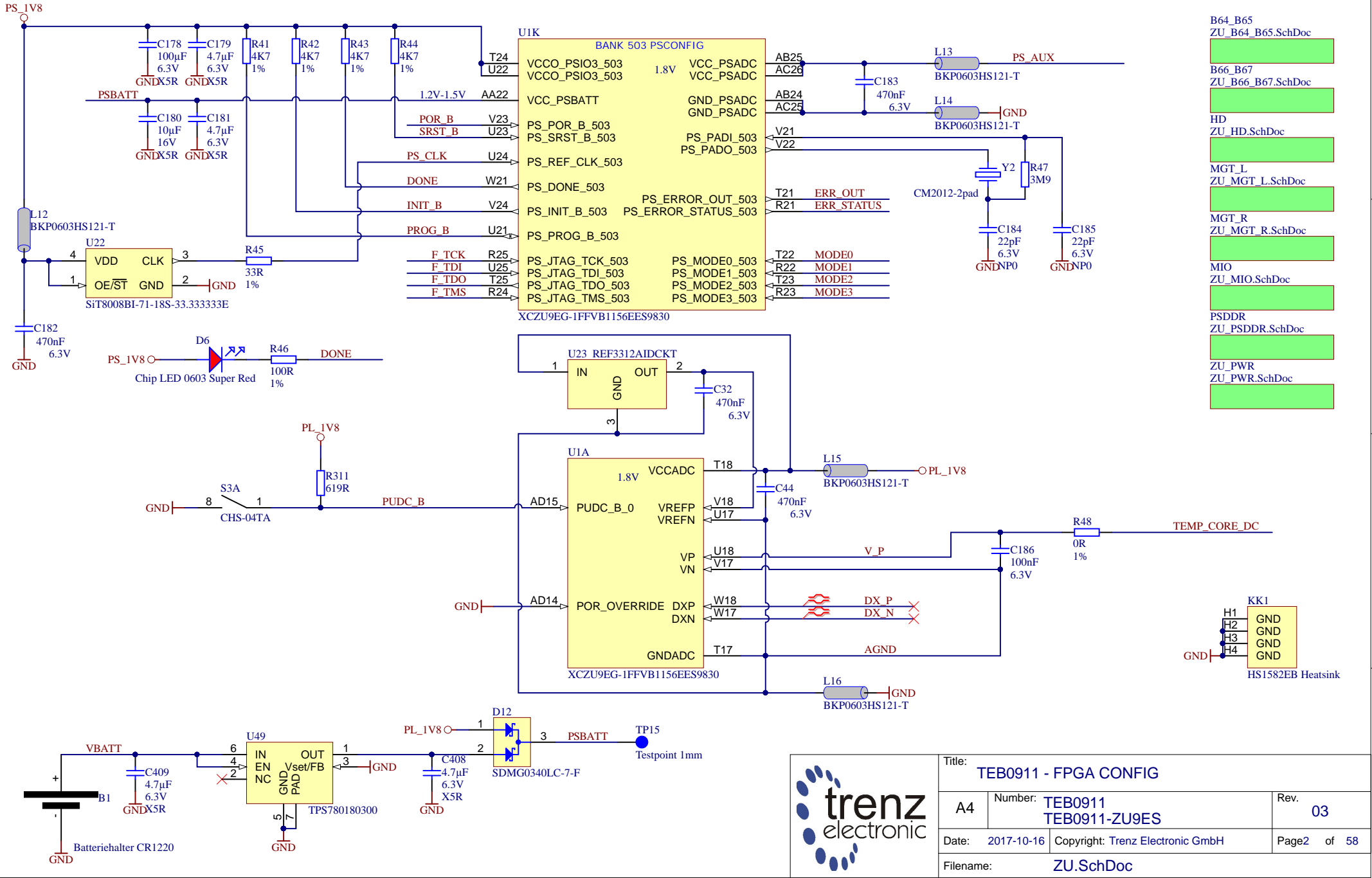
Ethernet Ethernet.SchDoc	U_USBP USB-PHY_SchDoc	U_SC_P SC_POWER.schdoc
U_SFP SFP.SchDoc	U_USBH USB3-HUB.SchDoc	U_POWER_OVERVIEW Power_overview.SchDoc
U_SSD SSD.SchDoc	U_CLK Clock.SchDoc	U_POWER_SEQ PowerUpSequence.SchDoc
U_FrontPanel FrontPanel.SchDoc	U_I2C I2C_system.schdoc	
U_USB USB.SchDoc	U_eMMC eMMC.SchDoc	
U_BackPanel BackPanel.SchDoc	U_DDRP DDR_PWR.SchDoc	
U_FMC PWR FMC PWR.SchDoc	U_DDR DDR_SODIMM.SchDoc	
U_ZU ZU.SchDoc	U_CLK2 Clock2.SchDoc	
U_SFP_CTRL SFP_CTRL.SchDoc	U_SC2 SC2.schdoc	
U_SC SC.schdoc	U_MISC MISC.schdoc	
U_UPWR USB3-HUB_PWR.SchDoc	U_PWR_IN PWR_IN.SchDoc	
U_FAN FAN_CON.schdoc	U_REVCH Revision_changes.SchDoc	



LOGO1  
TE Logo PRINT Layer  
LOGO PRINT



	Title: <b>TEB0911</b>		
	A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
	Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page1 of 58
	Filename: <b>TEB0911.SchDoc</b>		



- B64\_B65  
ZU\_B64\_B65.SchDoc
- B66\_B67  
ZU\_B66\_B67.SchDoc
- HD  
ZU\_HD.SchDoc
- MGT\_L  
ZU\_MGT\_L.SchDoc
- MGT\_R  
ZU\_MGT\_R.SchDoc
- MIO  
ZU\_MIO.SchDoc
- PSDDR  
ZU\_PSDDR.SchDoc
- ZU\_PWR  
ZU\_PWR.SchDoc



Title: TEB0911 - FPGA CONFIG		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page2 of 58
Filename: ZU.SchDoc		

A

B

C

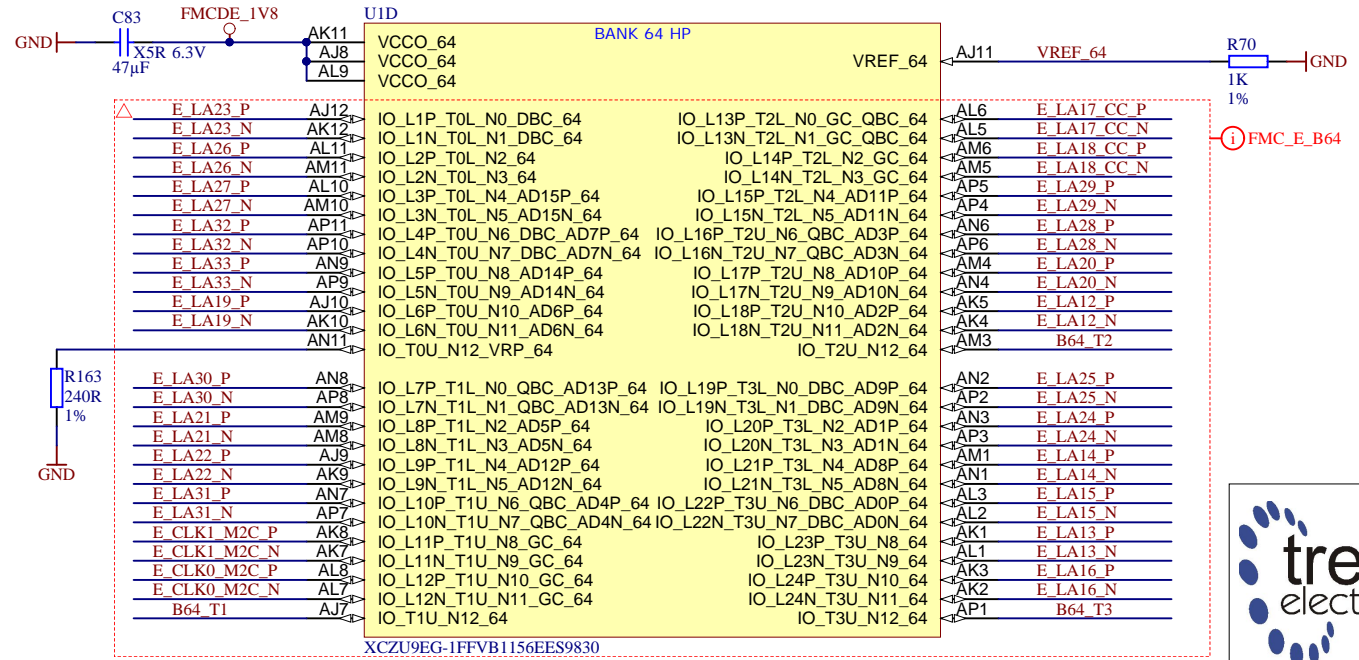
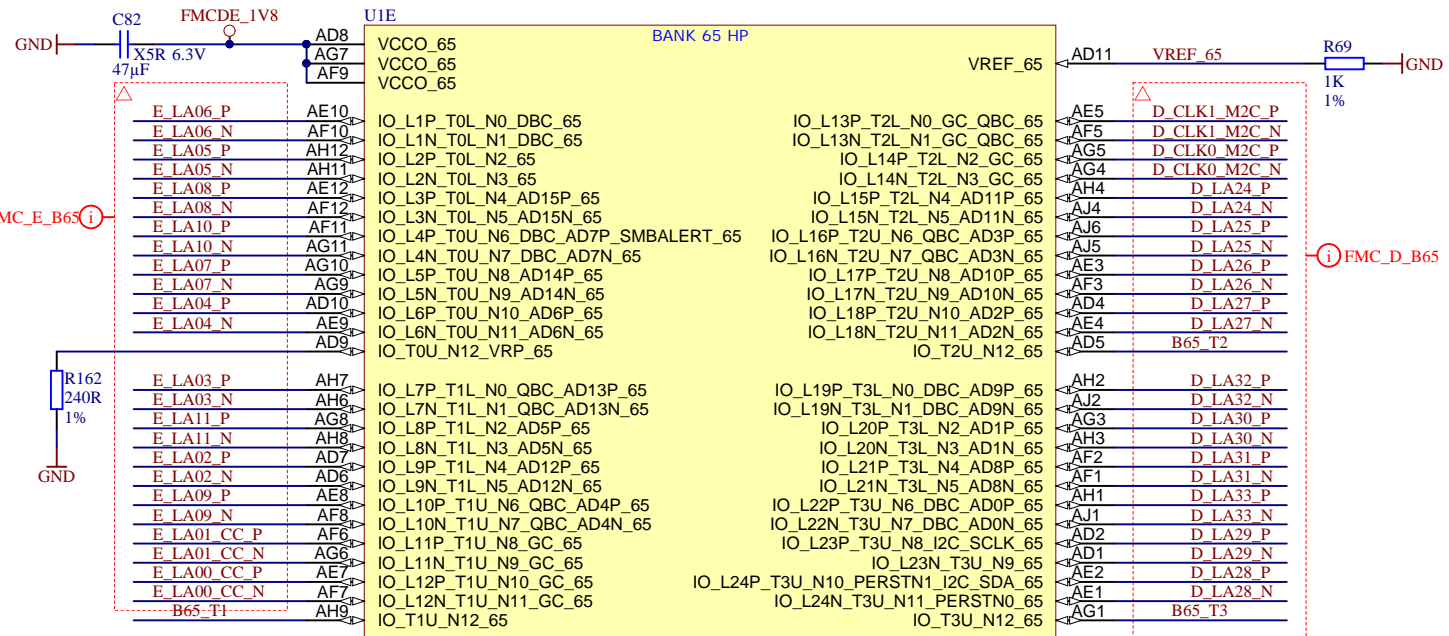
D

A

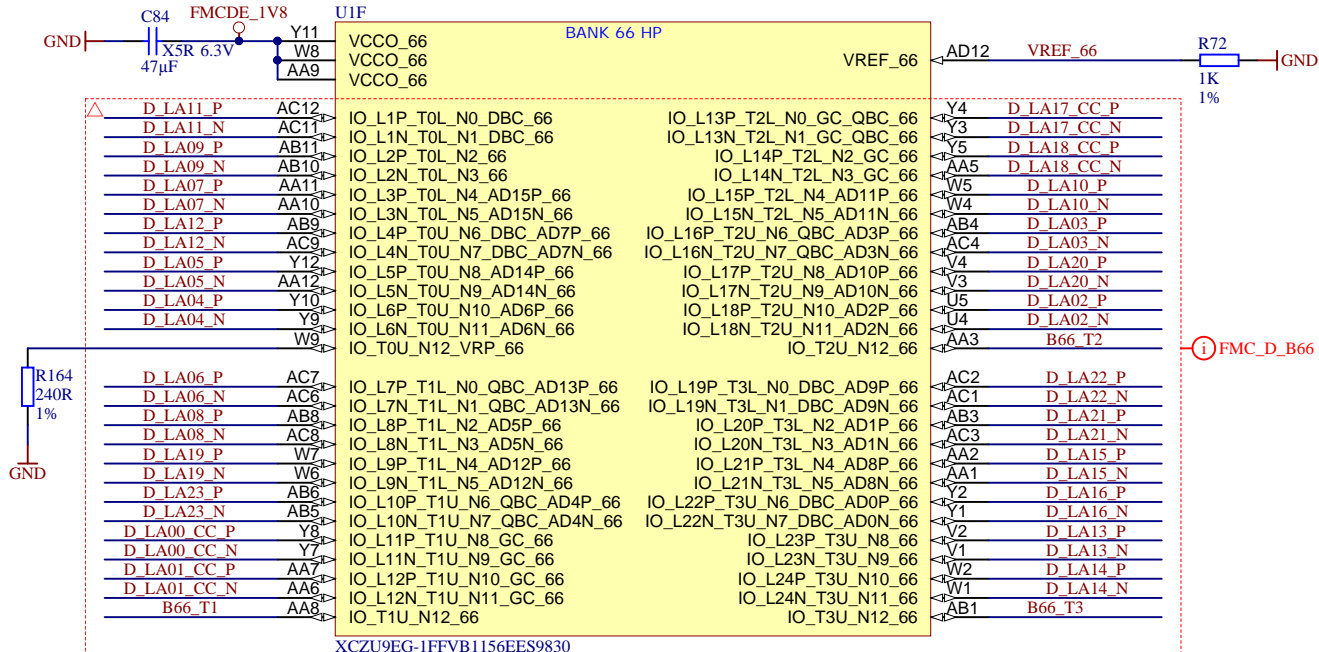
B

C

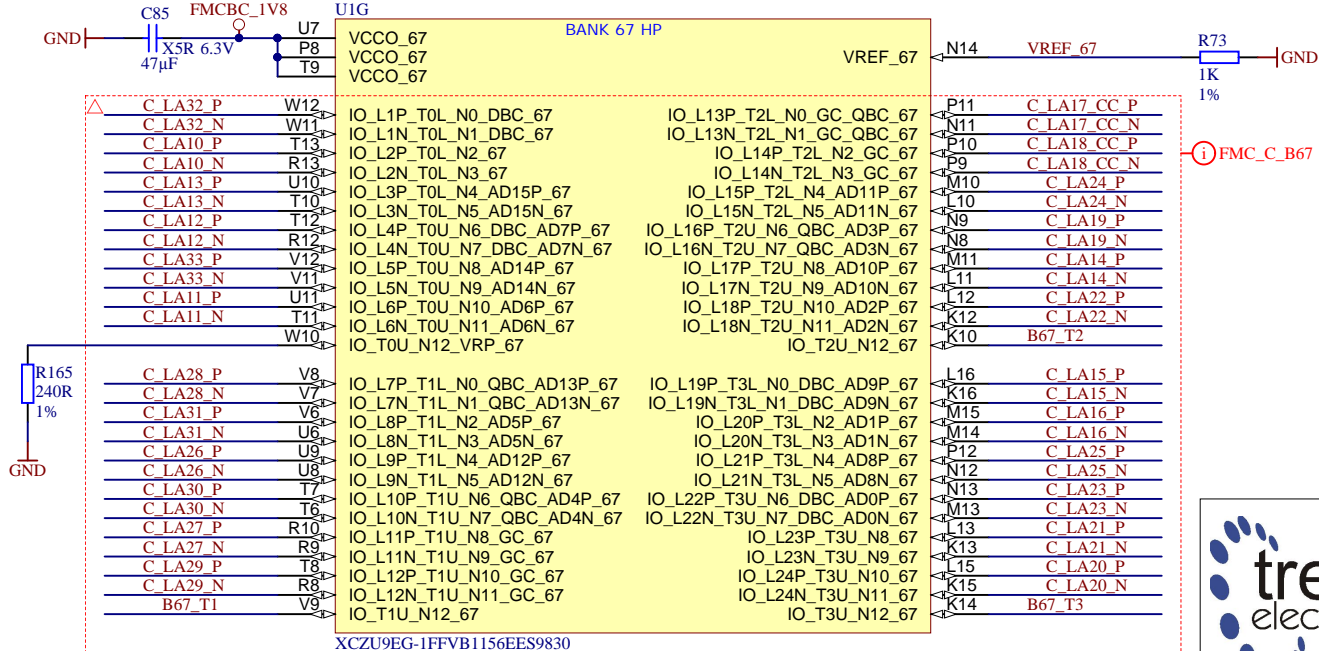
D



Title: <b>TEB0911 - FPGA B64 B65</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>3</b> of <b>58</b>
Filename: <b>ZU_B64_B65.SchDoc</b>		



XCZU9EG-1FFVB1156EES9830



XCZU9EG-1FFVB1156EES9830



Title: TEB0911 - FPGA B66 B67		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page4 of 58
Filename: ZU_B66_B67.SchDoc		

A

A

B

B

C

C

D

D

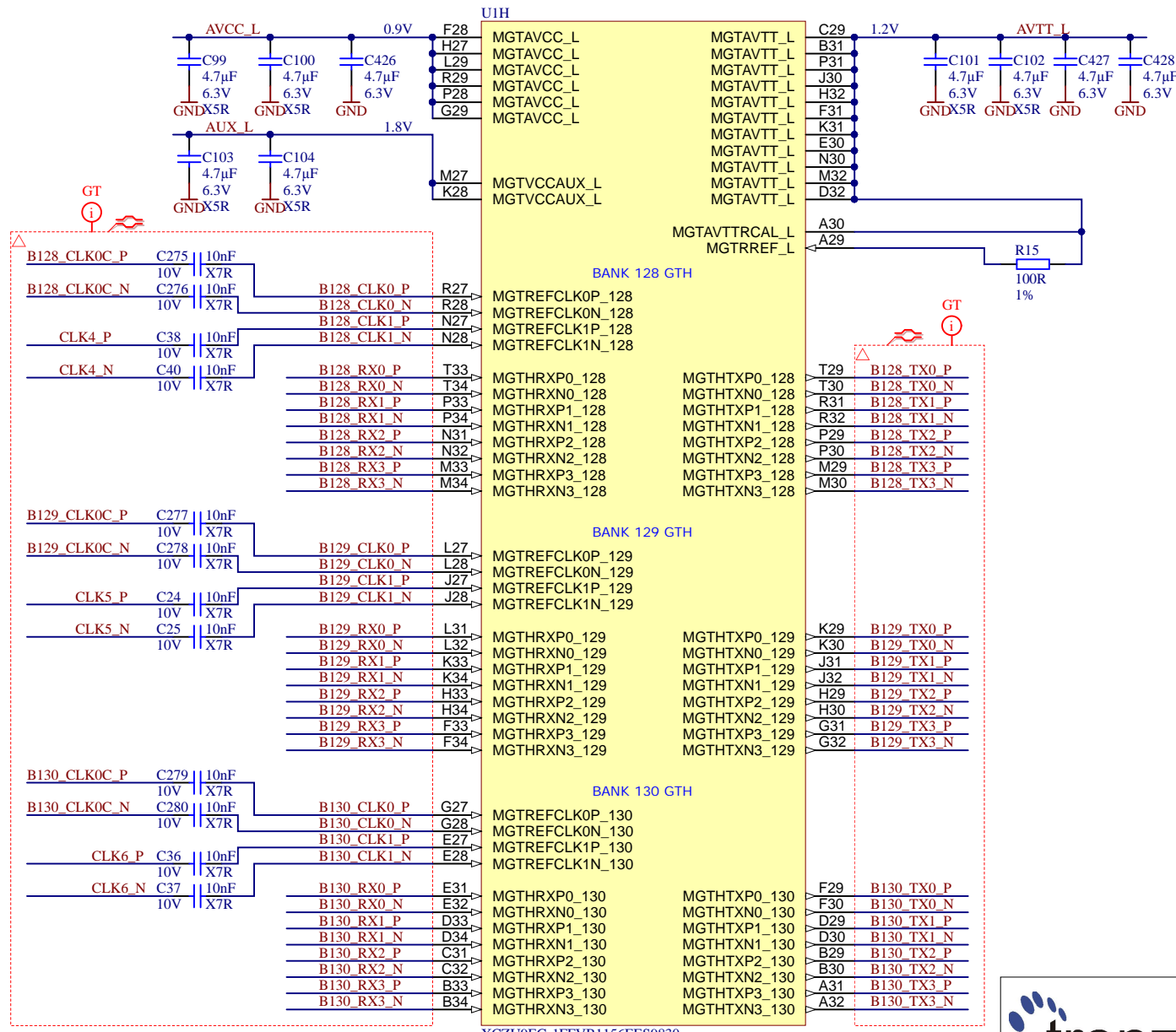


XCZU9EG-1FFVB1156EES9830

XCZU9EG-1FFVB1156EES9830



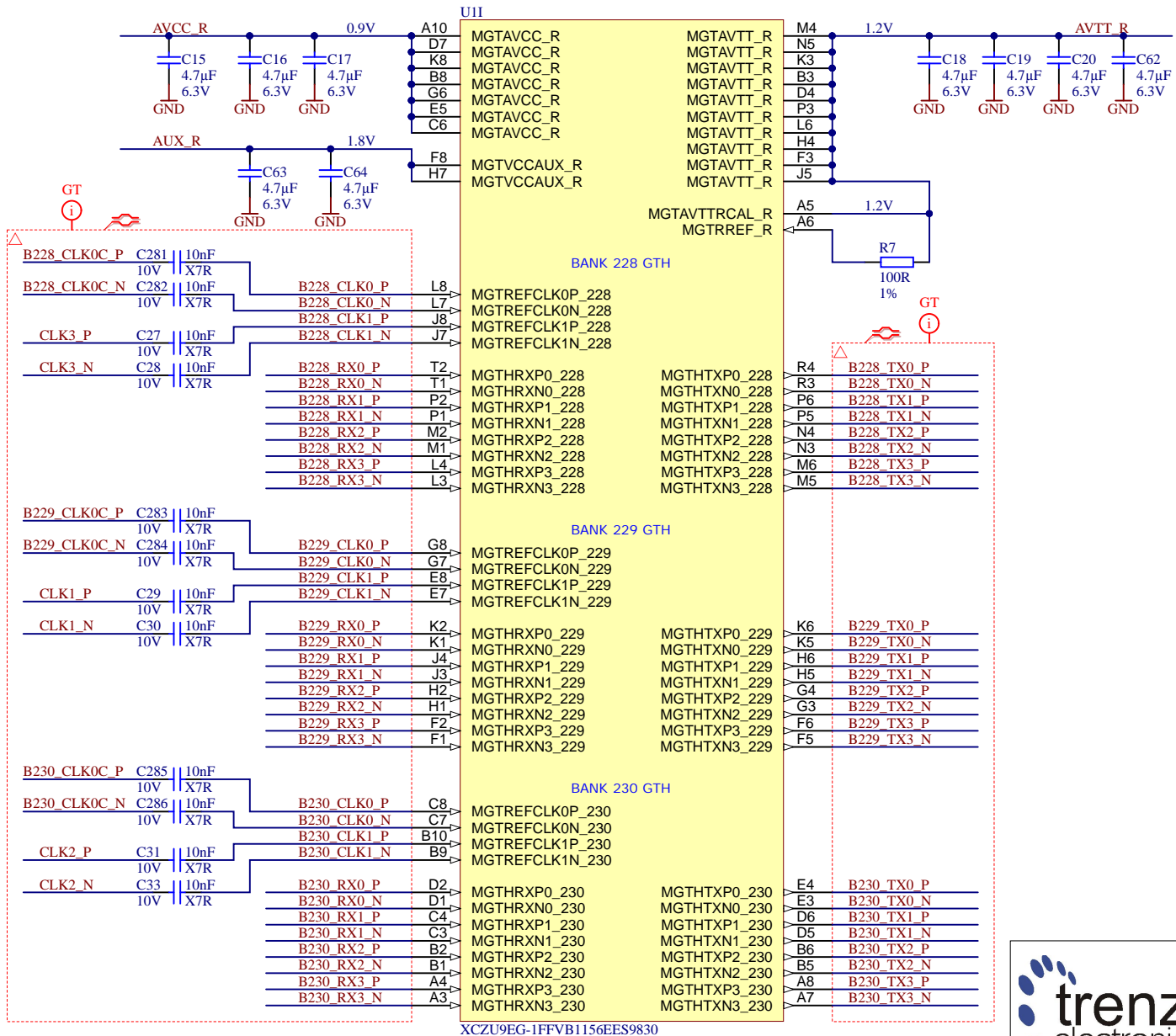
Title: TEB0911 - FPGA B44 B47-50		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page5 of 58
Filename: ZU_HD.SchDoc		



XCZU9EG-1FFVB1156EES9830



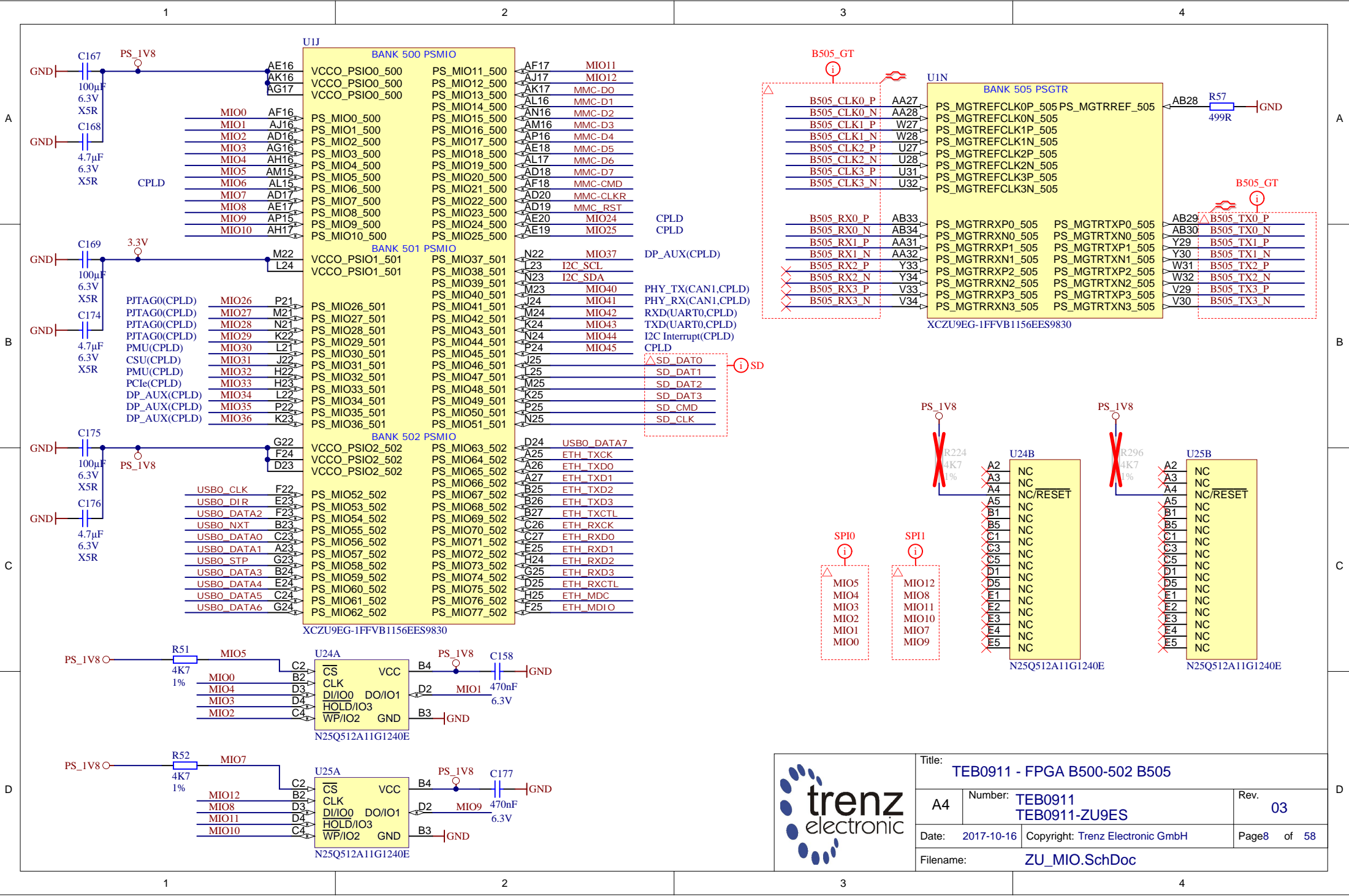
Title: <b>TEB0911 - FPGA B128-130</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>6</b> of <b>58</b>
Filename: <b>ZU_MGT_L.SchDoc</b>		



XCZU9EG-1FFVB1156EES9830

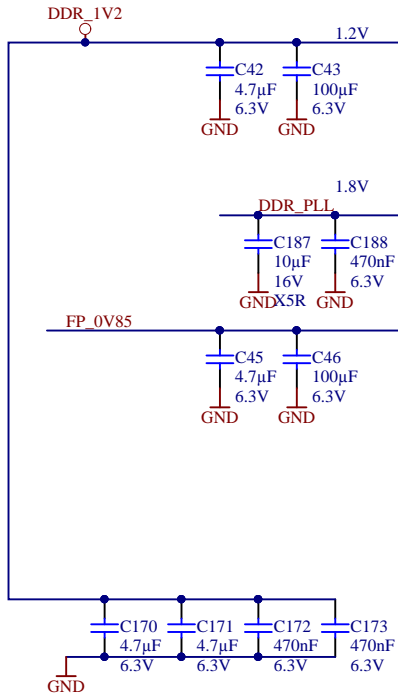


Title: <b>TEB0911 - FPGA B228-230</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>7</b> of <b>58</b>
Filename: <b>ZU_MGT_R.SchDoc</b>		



Title: <b>TEB0911 - FPGA B500-502 B505</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>8</b> of <b>58</b>
Filename: <b>ZU_MIO.SchDoc</b>		





UIL

BANK 504 PSDDR

AN30	VCCO_PSDDR_504	PS_DDR_CK0_504	AN26	DDR4-CLK0_P
AG27	VCCO_PSDDR_504	PS_DDR_CK_NO_504	AN27	DDR4-CLK0_N
AN25	VCCO_PSDDR_504	PS_DDR_CKE0_504	AN29	DDR4-CKE0
AL29	VCCO_PSDDR_504			
AL24	VCCO_PSDDR_504	PS_DDR_CK1_504	AL26	DDR4-CLK1_P
AJ24	VCCO_PSDDR_504	PS_DDR_CK_N1_504	AL27	DDR4-CLK1_N
AJ28	VCCO_PSDDR_504	PS_DDR_CKE1_504	AJ27	DDR4-CKE1
	VCCO_PSDDR_504			
Y24	VCC_PSDDR_PLL	PS_DDR_A0_504	AP29	DDR4-A0
Y25	VCC_PSDDR_PLL	PS_DDR_A1_504	AP30	DDR4-A1
		PS_DDR_A2_504	AP26	DDR4-A2
AE25	VCC_PSINTFP_DDR	PS_DDR_A3_504	AP27	DDR4-A3
AE24	VCC_PSINTFP_DDR	PS_DDR_A4_504	AP25	DDR4-A4
AD24	VCC_PSINTFP_DDR	PS_DDR_A5_504	AN24	DDR4-A5
		PS_DDR_A6_504	AM29	DDR4-A6
		PS_DDR_A7_504	AM28	DDR4-A7
		PS_DDR_A8_504	AM26	DDR4-A8
		PS_DDR_A9_504	AM25	DDR4-A9
		PS_DDR_A10_504	AL28	DDR4-A10
		PS_DDR_A11_504	AK27	DDR4-A11
		PS_DDR_A12_504	AJ25	DDR4-A12
		PS_DDR_A13_504	AL25	DDR4-A13
		PS_DDR_A14_504	AK25	DDR4-A14
		PS_DDR_A15_504	AK24	DDR4-A15
		PS_DDR_A16_504	AM24	DDR4-A16
		PS_DDR_A17_504	AF25	DDR4-A17
		PS_DDR_CS_N0_504	AN28	DDR4-CS_N0
		PS_DDR_CS_N1_504	AL30	DDR4-CS_N1
		PS_DDR_BA0_504	AH26	DDR4-BA0
		PS_DDR_BA1_504	AG26	DDR4-BA1
		PS_DDR_BG0_504	AK28	DDR4-BG0
		PS_DDR_BG1_504	AH27	DDR4-BG1
		PS_DDR_PARITY_504	AF20	DDR4-PAR
		PS_DDR_RAM_RST_N_504	AF21	DDR4-RESET
		PS_DDR_ACT_N_504	AG25	DDR4-ACT
		PS_DDR_ALERT_N_504	AF22	DDR4-ALERT
		PS_DDR_ZQ_504	AF23	
		PS_DDR_ODT0_504	AM30	DDR4-ODT0
		PS_DDR_ODT1_504	AJ26	DDR4-ODT1

0.85V

U1M

BANK 504 PSDDR

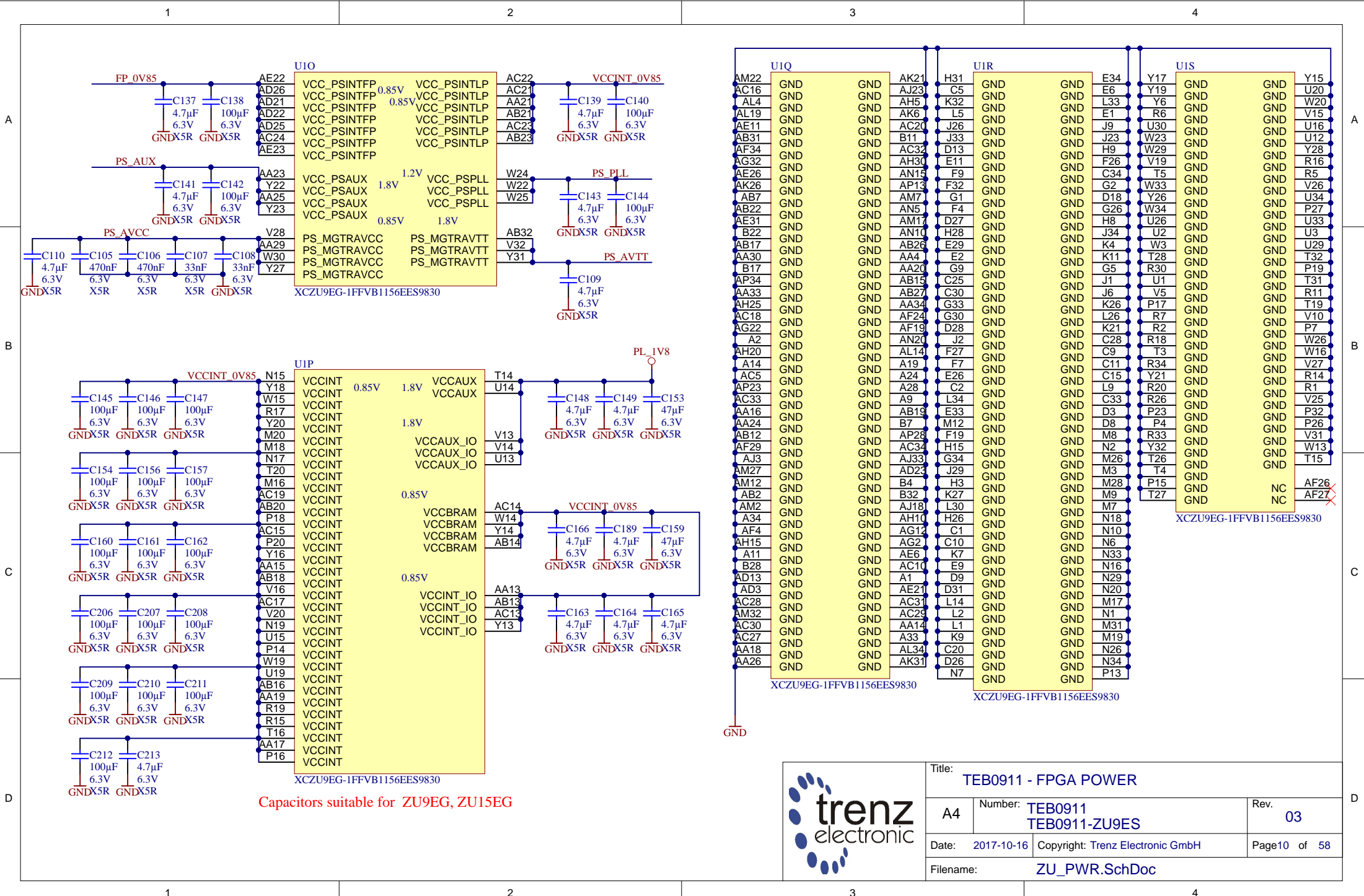
DQ0	AP20	PS_DDR_DQ0_504	PS_DDR_DQ32_504	AG31	DQ32
DQ1	AP18	PS_DDR_DQ1_504	PS_DDR_DQ33_504	AG30	DQ33
DQ2	AP19	PS_DDR_DQ2_504	PS_DDR_DQ34_504	AG29	DQ34
DQ3	AP17	PS_DDR_DQ3_504	PS_DDR_DQ35_504	AG28	DQ35
DQ4	AM20	PS_DDR_DQ4_504	PS_DDR_DQ36_504	AJ30	DQ36
DQ5	AM19	PS_DDR_DQ5_504	PS_DDR_DQ37_504	AK29	DQ37
DQ6	AM18	PS_DDR_DQ6_504	PS_DDR_DQ38_504	AK30	DQ38
DQ7	AL18	PS_DDR_DQ7_504	PS_DDR_DQ39_504	AJ29	DQ39
DQ8	AP22	PS_DDR_DQ8_504	PS_DDR_DQ40_504	AE27	DQ40
DQ9	AP21	PS_DDR_DQ9_504	PS_DDR_DQ41_504	AF28	DQ41
DQ10	AP24	PS_DDR_DQ10_504	PS_DDR_DQ42_504	AF30	DQ42
DQ11	AM23	PS_DDR_DQ11_504	PS_DDR_DQ43_504	AF31	DQ43
DQ12	AL21	PS_DDR_DQ12_504	PS_DDR_DQ44_504	AD28	DQ44
DQ13	AL22	PS_DDR_DQ13_504	PS_DDR_DQ45_504	AD27	DQ45
DQ14	AM23	PS_DDR_DQ14_504	PS_DDR_DQ46_504	AD29	DQ46
DQ15	AL23	PS_DDR_DQ15_504	PS_DDR_DQ47_504	AD30	DQ47
DQ16	AL20	PS_DDR_DQ16_504	PS_DDR_DQ48_504	AH33	DQ48
DQ17	AK20	PS_DDR_DQ17_504	PS_DDR_DQ49_504	AJ34	DQ49
DQ18	AJ20	PS_DDR_DQ18_504	PS_DDR_DQ50_504	AH34	DQ50
DQ19	AK18	PS_DDR_DQ19_504	PS_DDR_DQ51_504	AH32	DQ51
DQ20	AG20	PS_DDR_DQ20_504	PS_DDR_DQ52_504	AK34	DQ52
DQ21	AH18	PS_DDR_DQ21_504	PS_DDR_DQ53_504	AK33	DQ53
DQ22	AG19	PS_DDR_DQ22_504	PS_DDR_DQ54_504	AL32	DQ54
DQ23	AG18	PS_DDR_DQ23_504	PS_DDR_DQ55_504	AL31	DQ55
DQ24	AG21	PS_DDR_DQ24_504	PS_DDR_DQ56_504	AG33	DQ56
DQ25	AH21	PS_DDR_DQ25_504	PS_DDR_DQ57_504	AG34	DQ57
DQ26	AG24	PS_DDR_DQ26_504	PS_DDR_DQ58_504	AF32	DQ58
DQ27	AG23	PS_DDR_DQ27_504	PS_DDR_DQ59_504	AF33	DQ59
DQ28	AK22	PS_DDR_DQ28_504	PS_DDR_DQ60_504	AD31	DQ60
DQ29	AJ21	PS_DDR_DQ29_504	PS_DDR_DQ61_504	AD32	DQ61
DQ30	AJ22	PS_DDR_DQ30_504	PS_DDR_DQ62_504	AD34	DQ62
DQ31	AK23	PS_DDR_DQ31_504	PS_DDR_DQ63_504	AD33	DQ63
		PS_DDR_DQ64_504	PS_DDR_DQ65_504	AN31	CB0
		PS_DDR_DQ66_504	PS_DDR_DQ67_504	AP31	CB1
		PS_DDR_DQ68_504	PS_DDR_DQ69_504	AP32	CB2
		PS_DDR_DQ70_504	PS_DDR_DQ71_504	AP33	CB3
		PS_DDR_DQ72_504	PS_DDR_DQ73_504	AM31	CB4
		PS_DDR_DQ74_504	PS_DDR_DQ75_504	AM33	CB5
		PS_DDR_DQ76_504	PS_DDR_DQ77_504	AM34	CB6
		PS_DDR_DQ78_504	PS_DDR_DQ79_504	AL33	CB7
		PS_DDR_DQ80_504	PS_DDR_DQ81_504		
		PS_DDR_DQ82_504	PS_DDR_DQ83_504	AN17	DDR4-DM0
		PS_DDR_DQ84_504	PS_DDR_DQ85_504	AM21	DDR4-DM1
		PS_DDR_DQ86_504	PS_DDR_DQ87_504	AK19	DDR4-DM2
		PS_DDR_DQ88_504	PS_DDR_DQ89_504	AH24	DDR4-DM3
		PS_DDR_DQ90_504	PS_DDR_DQ91_504	AH31	DDR4-DM4
		PS_DDR_DQ92_504	PS_DDR_DQ93_504	AE30	DDR4-DM5
		PS_DDR_DQ94_504	PS_DDR_DQ95_504	AJ31	DDR4-DM6
		PS_DDR_DQ96_504	PS_DDR_DQ97_504	AE34	DDR4-DM7
		PS_DDR_DQ98_504	PS_DDR_DQ99_504	AN34	DDR4-DM8

- ADDR\_CMD\_CTRL
- DDR4-A[0..16]
  - DDR4-CS\_N0
  - DDR4-CS\_N1
  - DDR4-BA0
  - DDR4-BA1
  - DDR4-BG0
  - DDR4-BG1
  - DDR4-PAR
  - DDR4-ACT
  - DDR4-ODT0
  - DDR4-ODT1
  - DDR4-CKE0
  - DDR4-CKE1
  - DDR4-CLK0\_P
  - DDR4-CLK0\_N
  - DDR4-CLK1\_P
  - DDR4-CLK1\_N

- LANE0
- DO[0..7]
  - DDR4-DQS0\_P
  - DDR4-DQS0\_N
  - DDR4-DM0
- LANE1
- DO[8..15]
  - DDR4-DQS1\_P
  - DDR4-DQS1\_N
  - DDR4-DM1
- LANE2
- DO[16..23]
  - DDR4-DQS2\_P
  - DDR4-DQS2\_N
  - DDR4-DM2
- LANE3
- DO[24..31]
  - DDR4-DQS3\_P
  - DDR4-DQS3\_N
  - DDR4-DM3
- LANE4
- DO[32..39]
  - DDR4-DQS4\_P
  - DDR4-DQS4\_N
  - DDR4-DM4
- LANE5
- DO[40..47]
  - DDR4-DQS5\_P
  - DDR4-DQS5\_N
  - DDR4-DM5
- LANE6
- DO[48..55]
  - DDR4-DQS6\_P
  - DDR4-DQS6\_N
  - DDR4-DM6
- LANE7
- DO[56..63]
  - DDR4-DQS7\_P
  - DDR4-DQS7\_N
  - DDR4-DM7
- LANE\_ECC
- CB[0..7]
  - DDR4-DQS8\_P
  - DDR4-DQS8\_N
  - DDR4-DM8



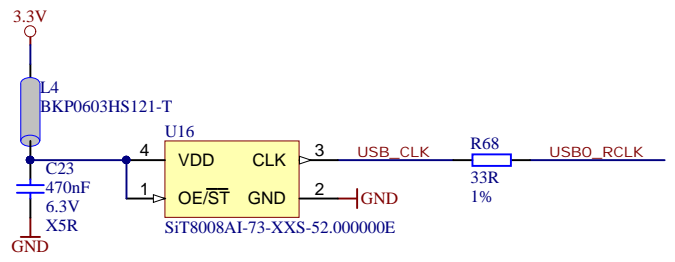
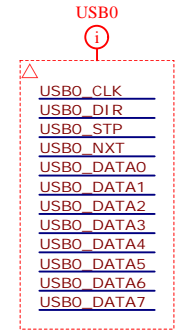
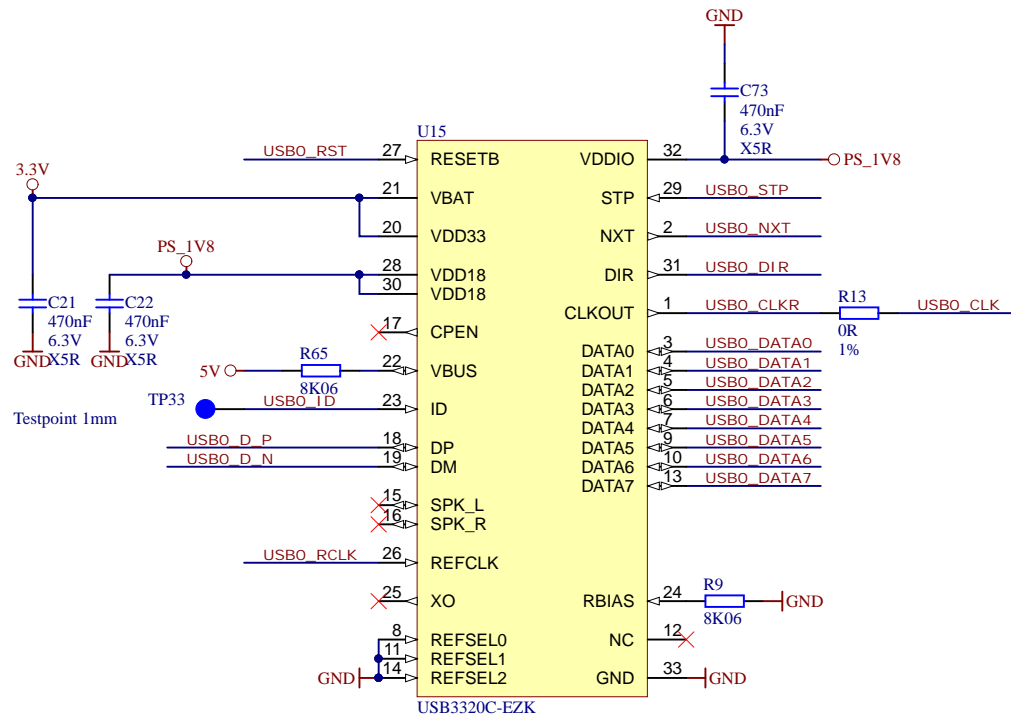
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A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page9 of 58
Filename: ZU_PSDDR.SchDoc		



Capacitors suitable for ZU9EG, ZU15EG



Title: <b>TEB0911 - FPGA POWER</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: Trenz Electronic GmbH	
Page <b>10</b> of <b>58</b>		
Filename: <b>ZU_PWR.SchDoc</b>		



Title: <b>TEB0911 - USB 2.0 PHY</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>11</b> of <b>58</b>
Filename: <b>USB-PHY.SchDoc</b>		

1

2

3

4

A

A

B

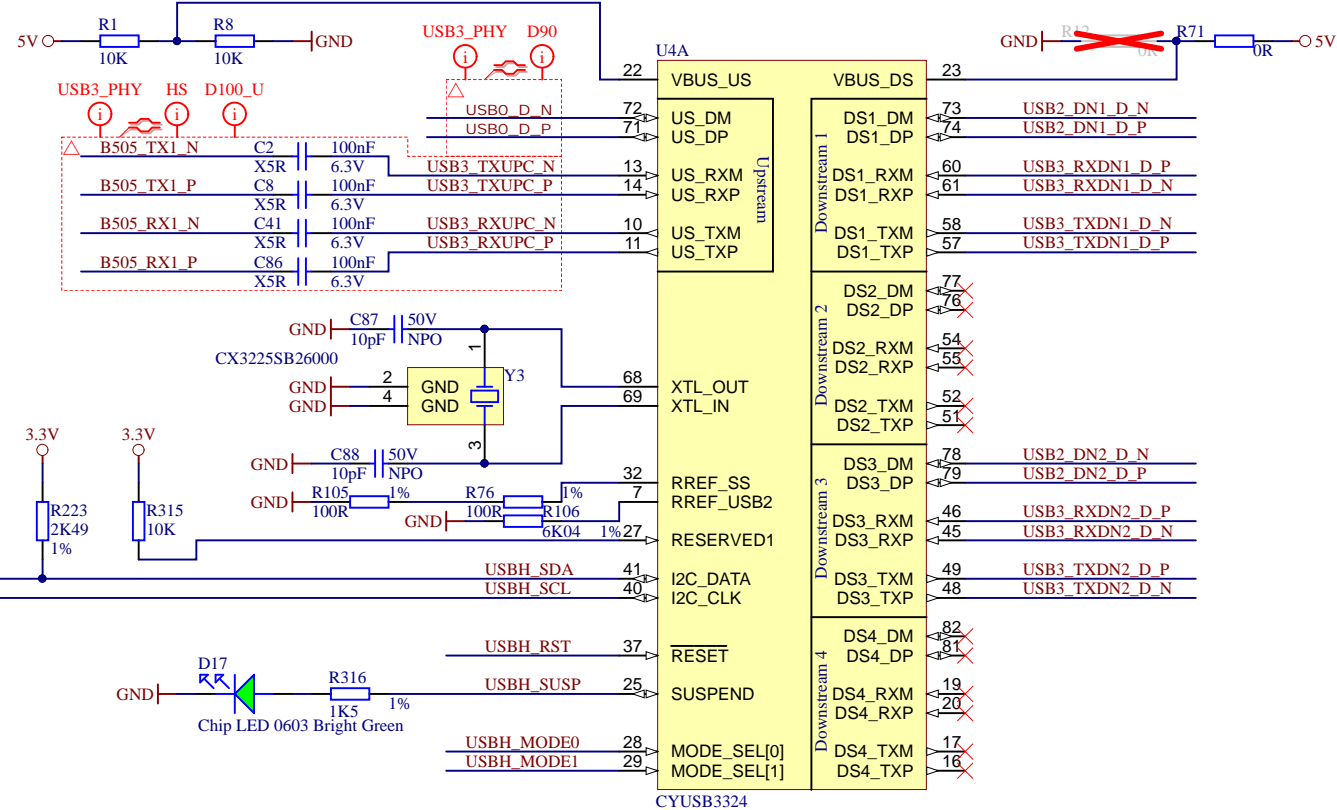
B

C

C

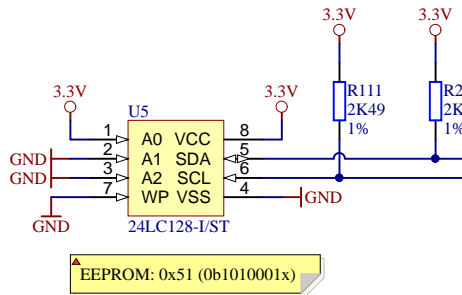
D

D

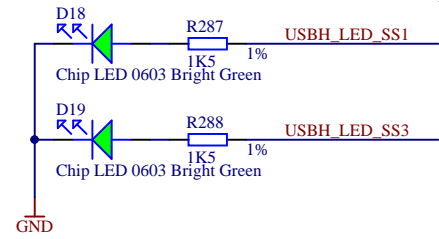


**LAYOUT NOTES:**  
 Each member of a High-Speed differential pair should be no more than 1.25 mm  
 Each member of a SuperSpeed differential pair should be no more than 0.13 mm

**RESETN pin** should be held LOW until both supplies become stable.



ACA\_DOCK Disabled  
 All REMOVABLE  
 I2C\_DEV\_ID: I2C slave address 0x60  
 VID  
 PORT\_DISABLE All EN  
 All REMOVABLE  
 VID  
 VID  
 DSx\_CDP\_EN  
 DSx\_CDP\_EN  
 DSx\_CDP\_EN  
 DSx\_CDP\_EN



**USB: 0x60 (or 0x58)**



Title: <b>TEB0911 - USB HUB</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>12</b> of <b>58</b>
Filename: <b>USB3-HUB.SchDoc</b>		

PORT\_DISABLE All EN  
 PWR\_EN\_SEL Individual  
 PIN\_STRAP config

Active LOW

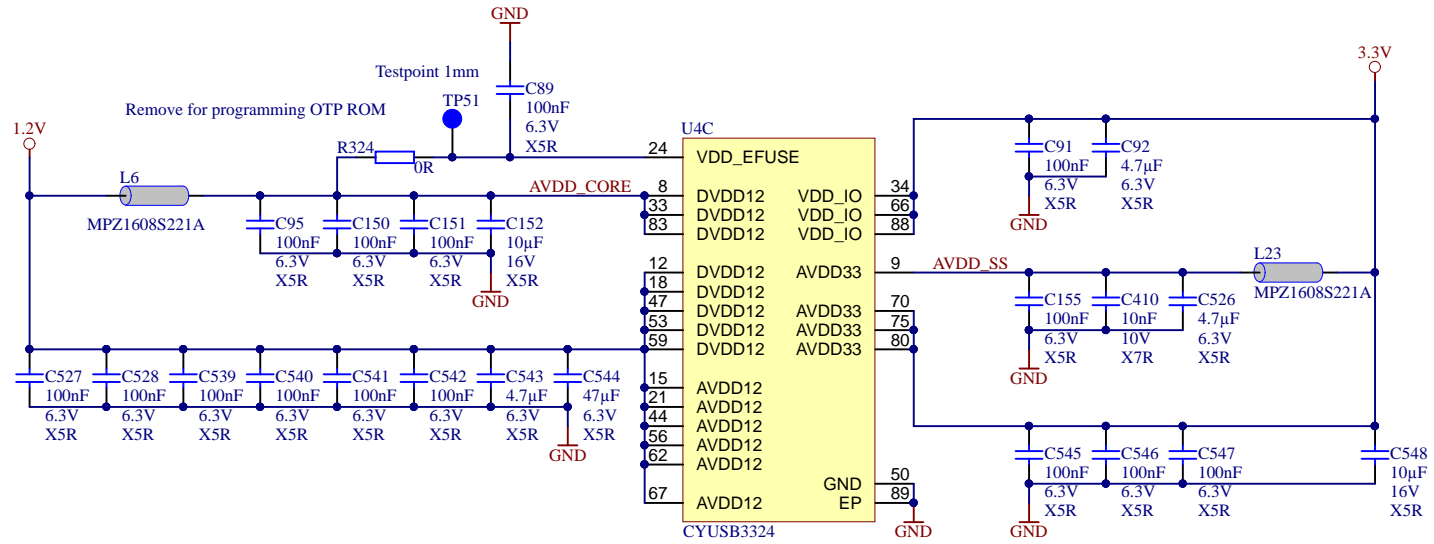
Power enable and overcurrent LOW


1

2

3

4



	Title: <b>TEB0911 - USB HUB</b>		
	A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
	Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>13</b> of <b>58</b>
	Filename: <b>USB3-HUB_PWR.SchDoc</b>		

1

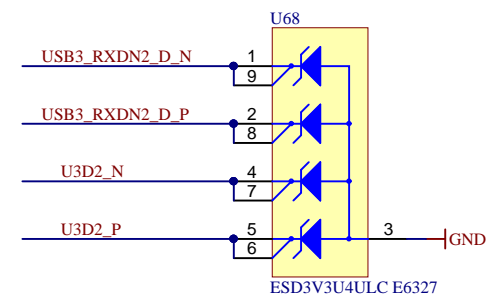
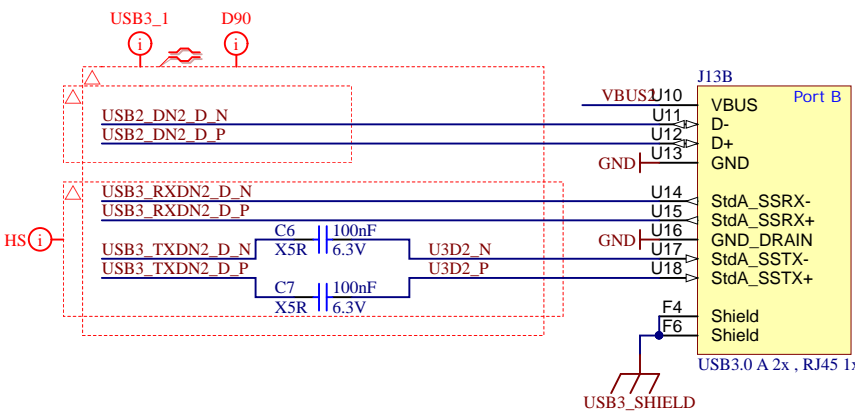
2

3

4

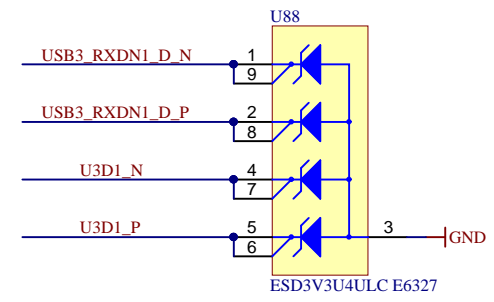
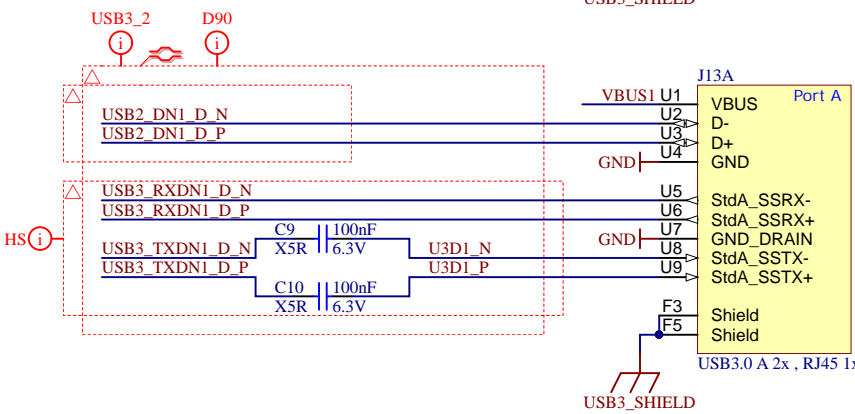
A

A



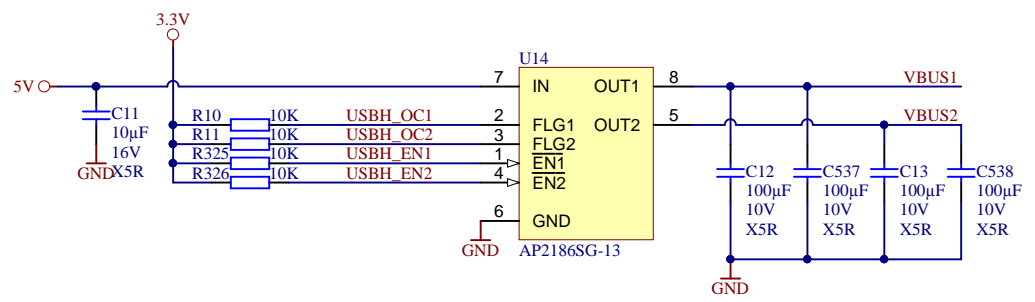
B

B



C

C



D

D



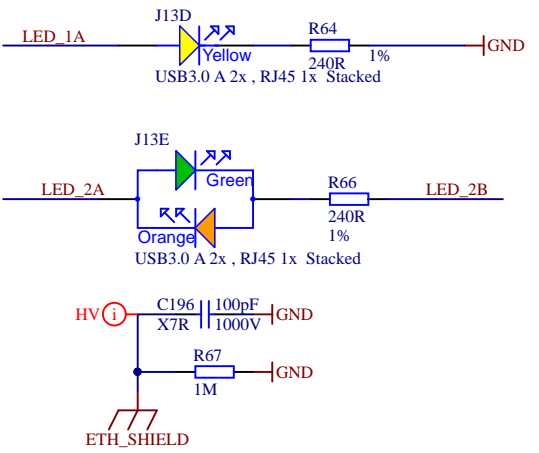
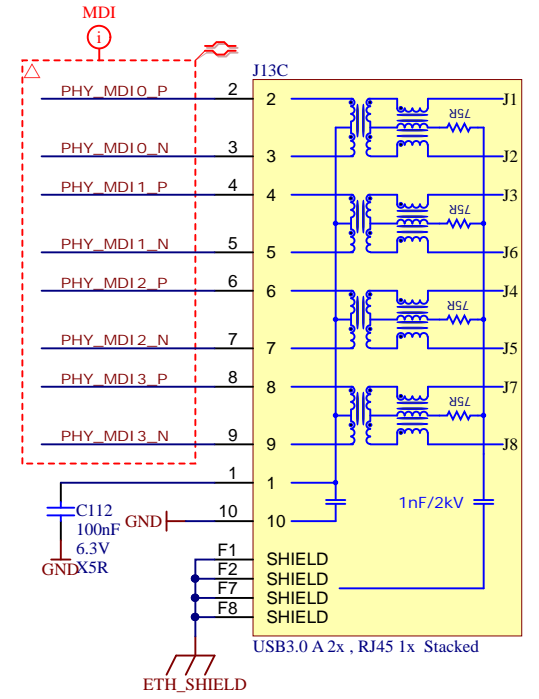
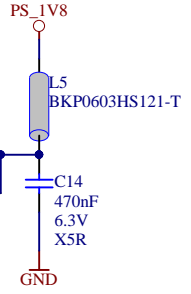
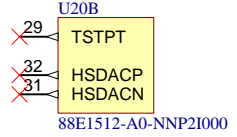
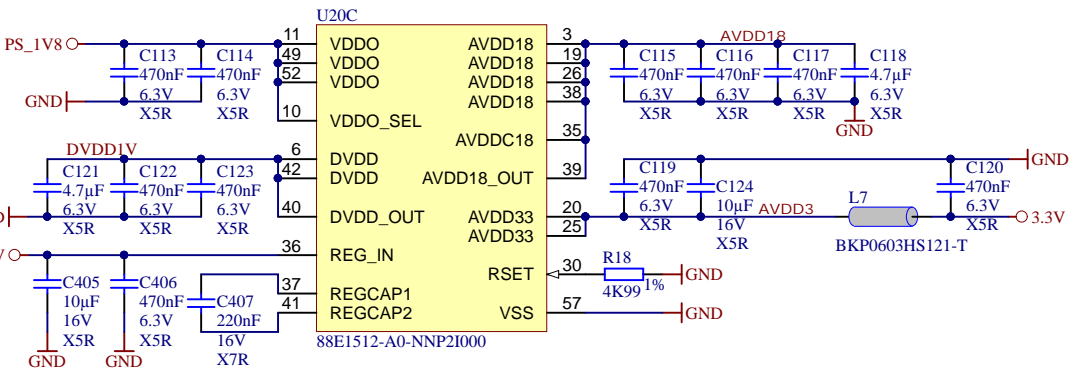
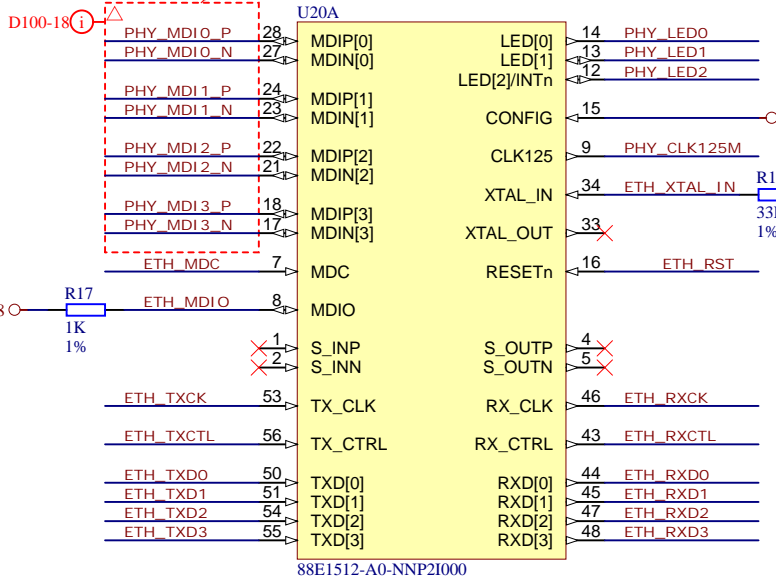
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A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 14 of 58
Filename: USB.SchDoc		

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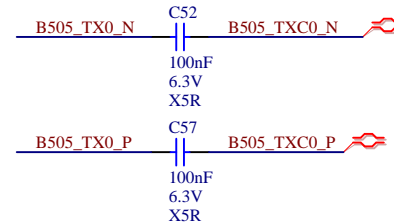
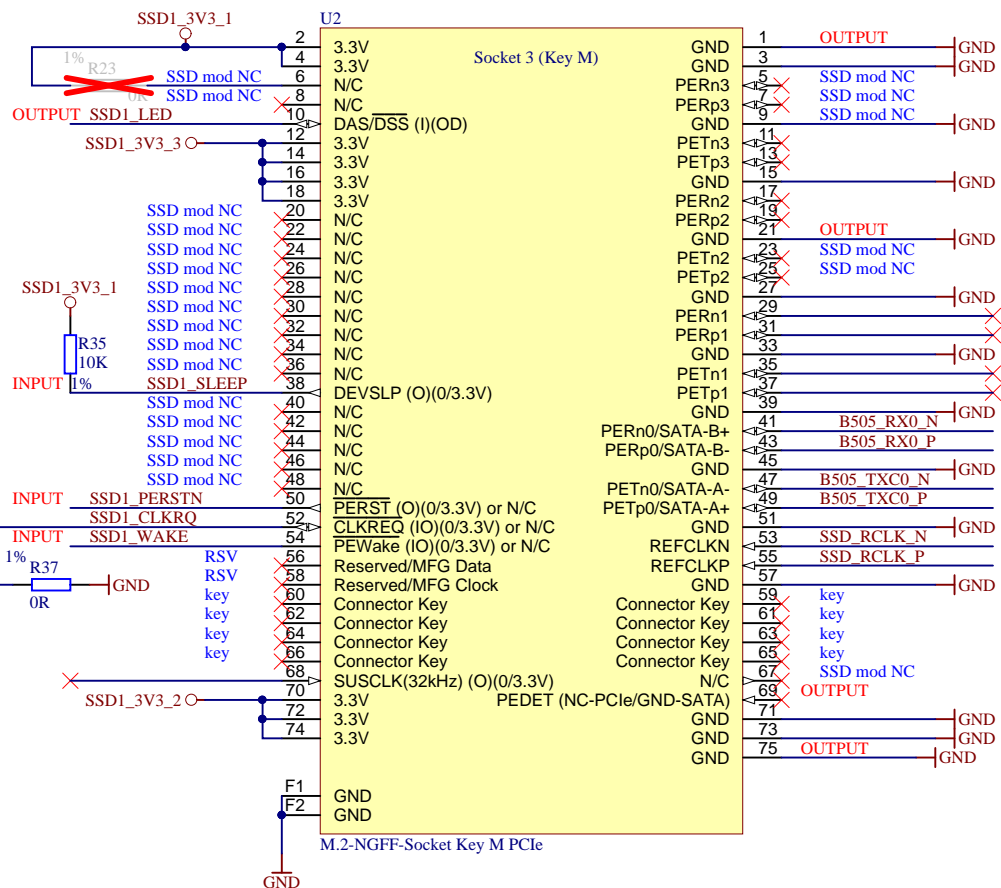
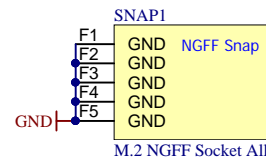
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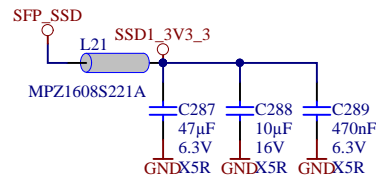
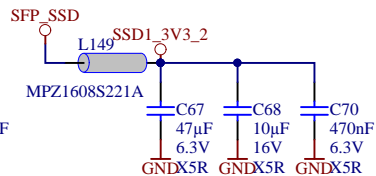
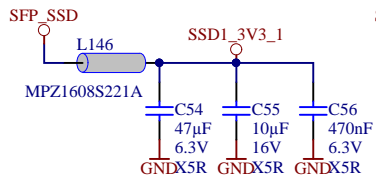
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Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>15</b> of <b>58</b>
Filename: <b>Ethernet.SchDoc</b>		

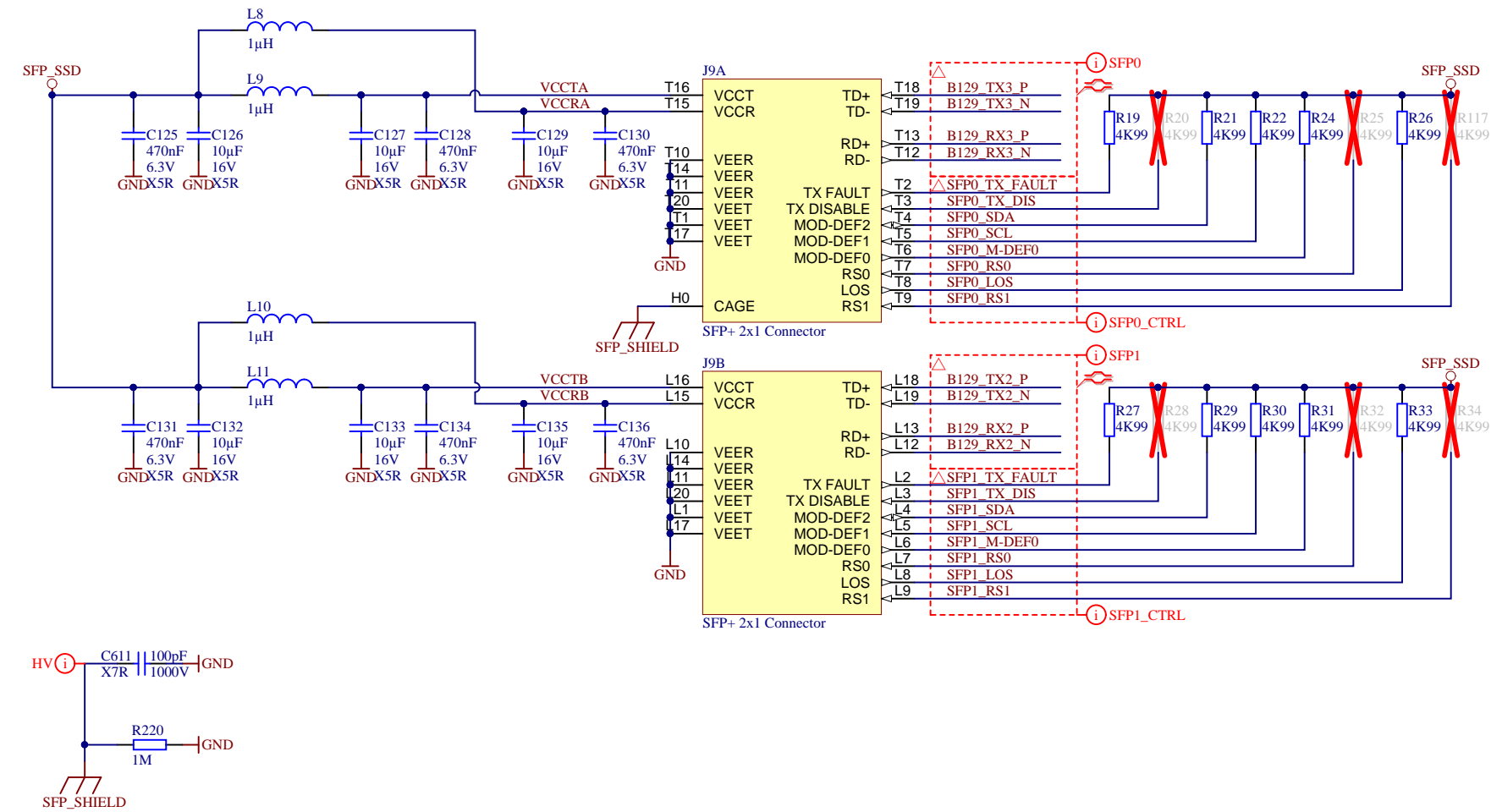


MECH1  
  
 M.2 NGFF SMD-Abstandsbolzen - M3 - 1.5mm

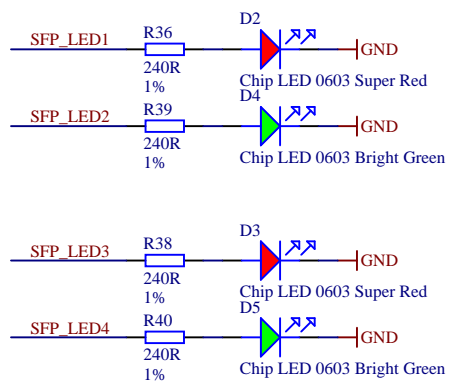
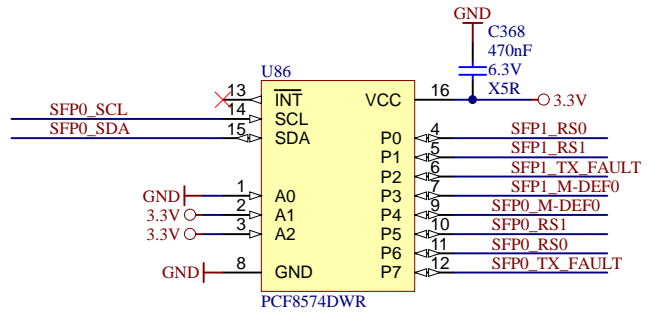


Title: TEB0911 - SSD		
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Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 16 of 58
Filename: SSD.SchDoc		

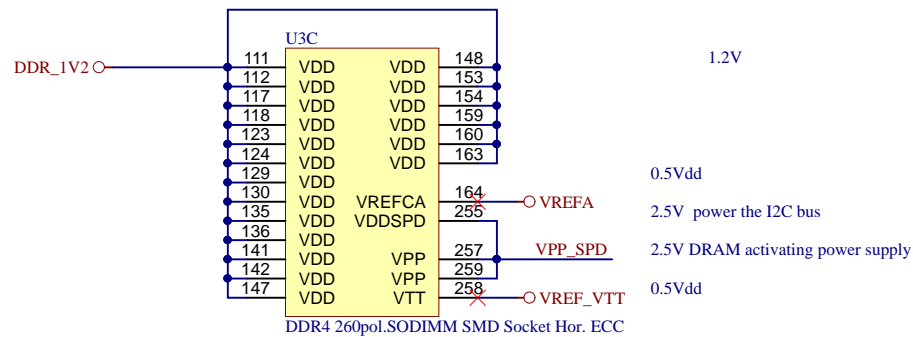
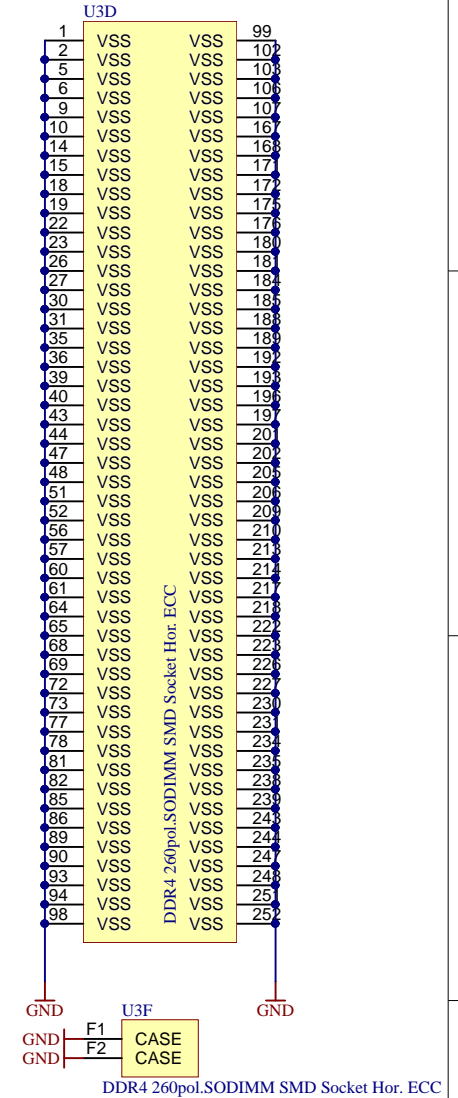
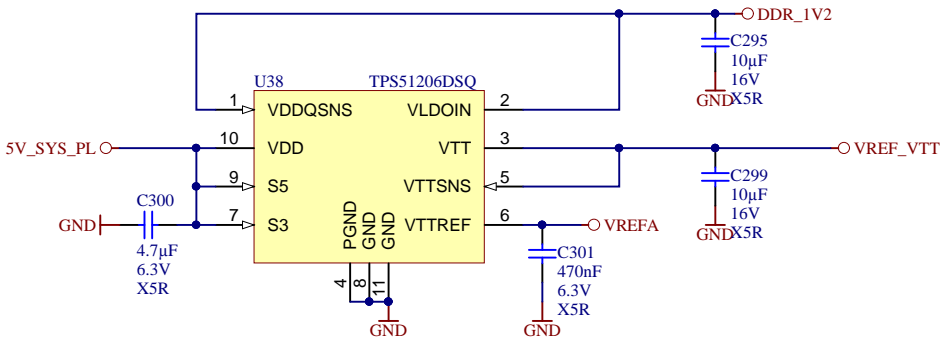
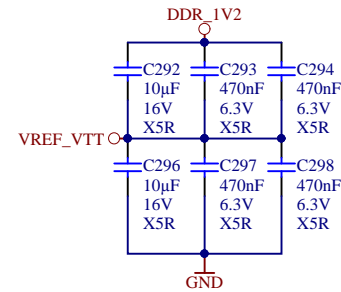
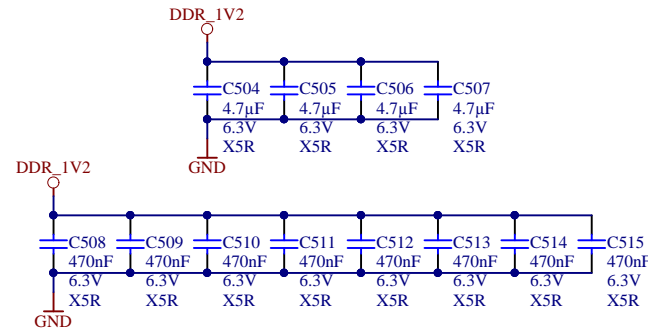
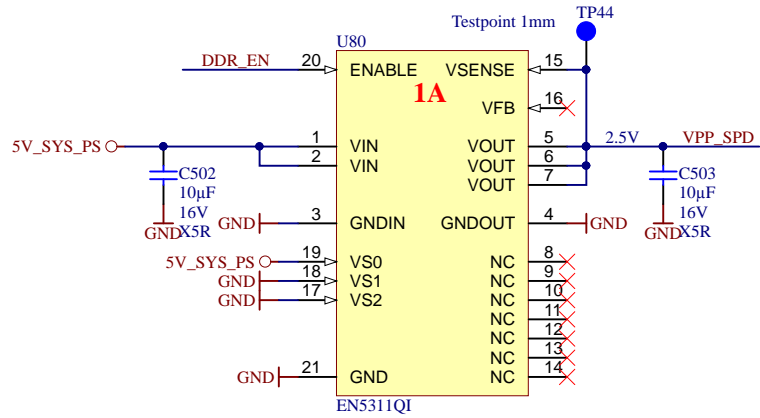




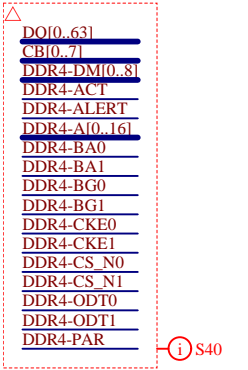
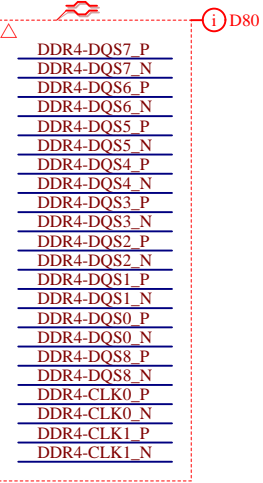
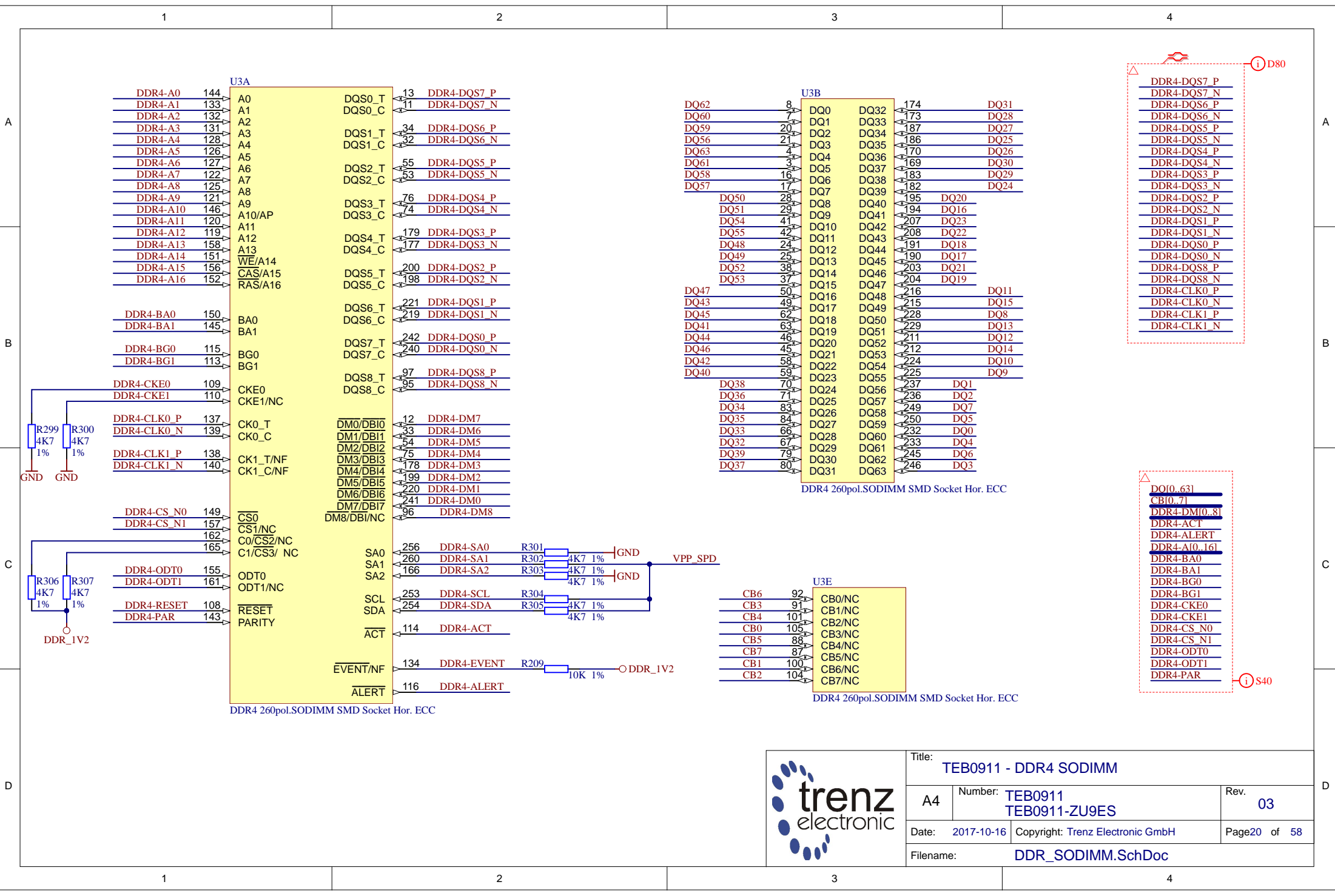
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A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	
Page <b>17</b> of <b>58</b>		Filename: <b>SFP.SchDoc</b>



Title: <b>TEB0911 - SFP</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>18</b> of <b>58</b>
Filename: <b>SFP_CTRL.SchDoc</b>		



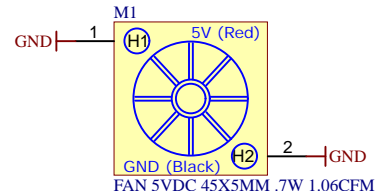
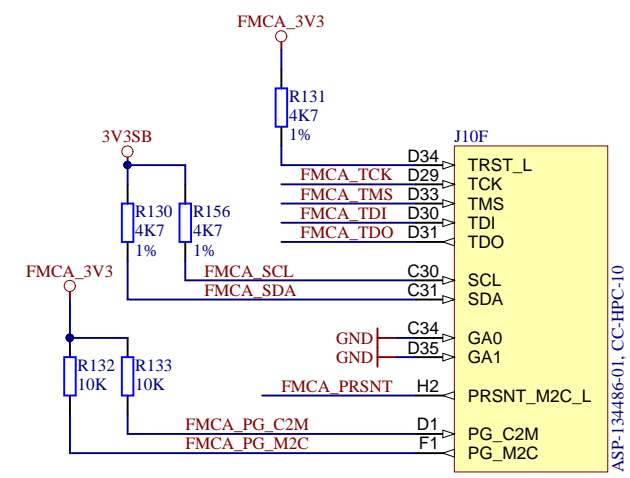
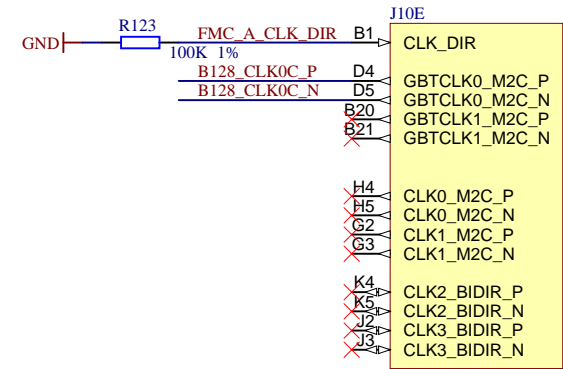
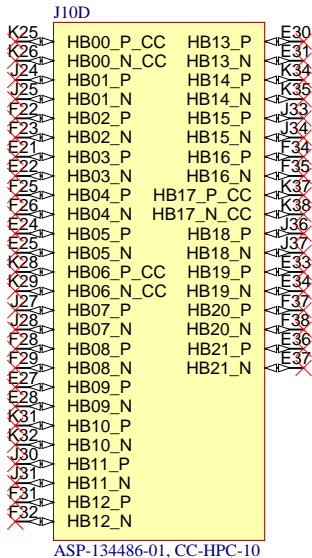
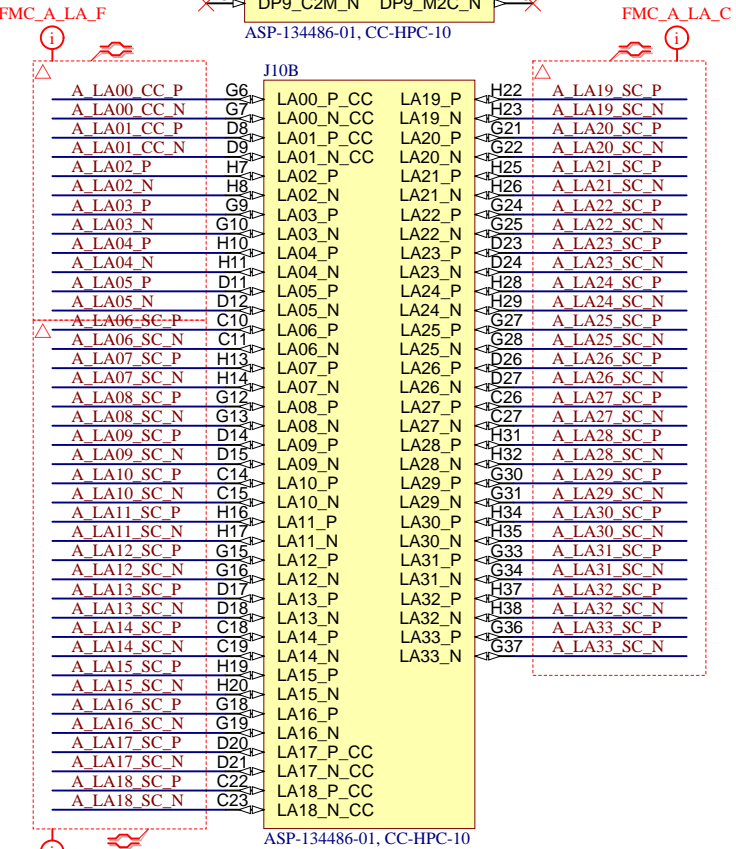
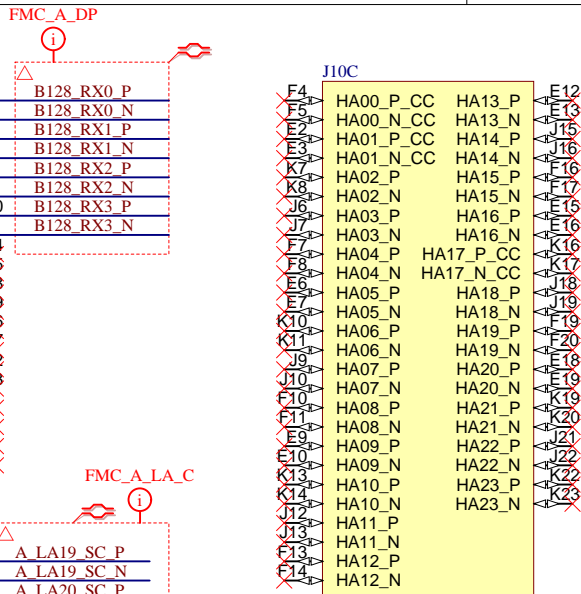
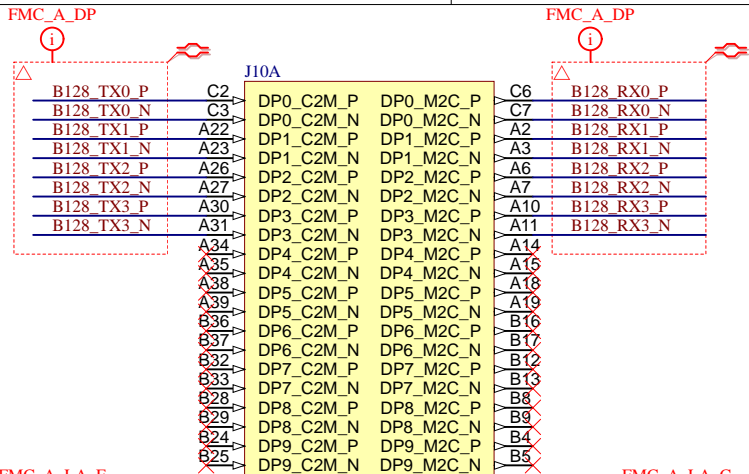
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Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>19</b> of <b>58</b>
Filename: <b>DDR_PWR.SchDoc</b>		



**trenz electronic**

Title: **TEB0911 - DDR4 SODIMM**

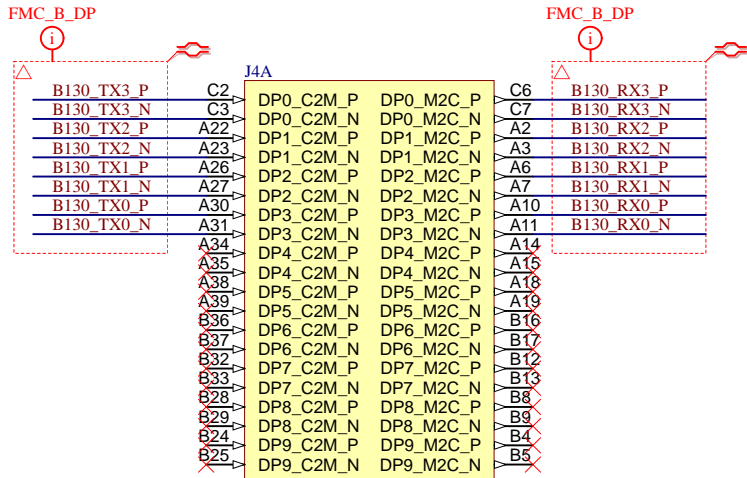
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Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>20</b> of <b>58</b>
Filename: <b>DDR_SODIMM.SchDoc</b>		



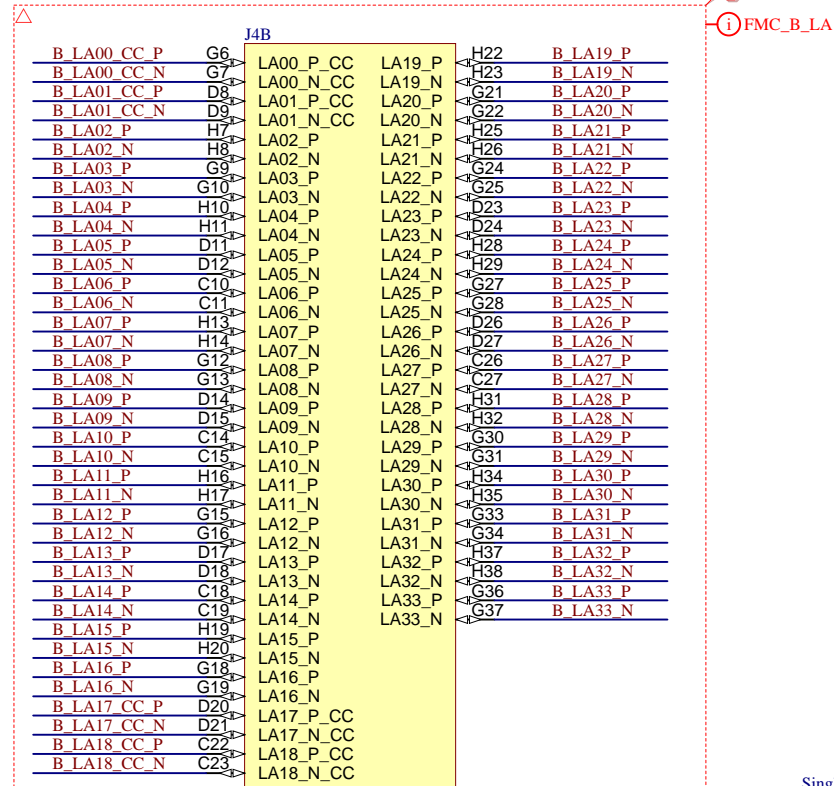
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Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>21</b> of <b>58</b>
Filename: <b>FMC_A.SchDoc</b>		



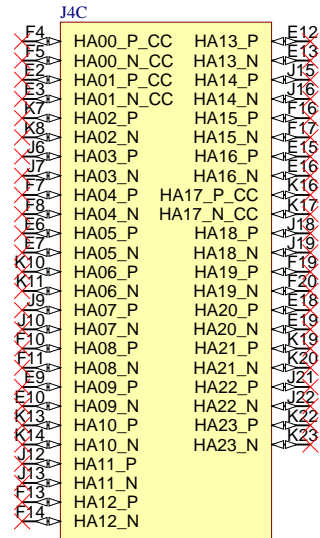
Single FMC Commercial Baseboard Snap



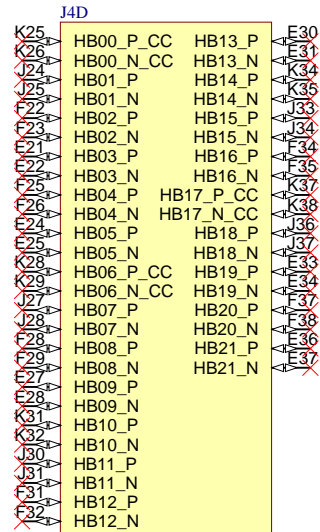
ASP-134486-01, CC-HPC-10



ASP-134486-01, CC-HPC-10



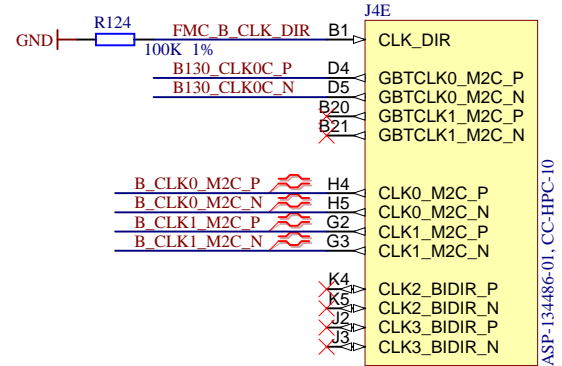
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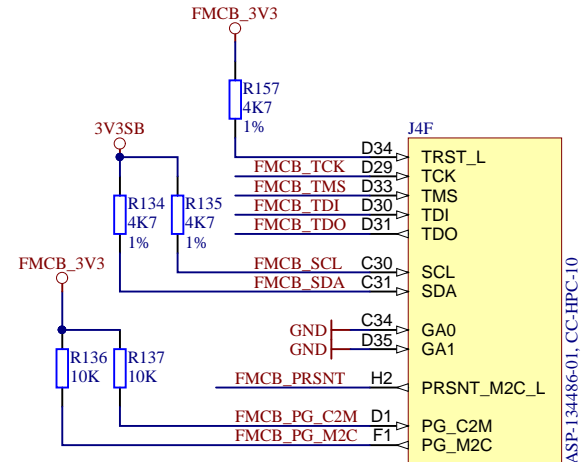
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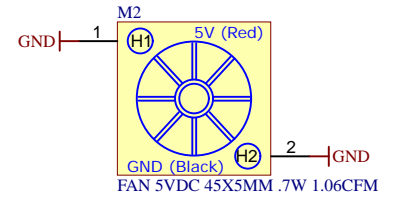
Single FMC Commercial Baseboard Snap



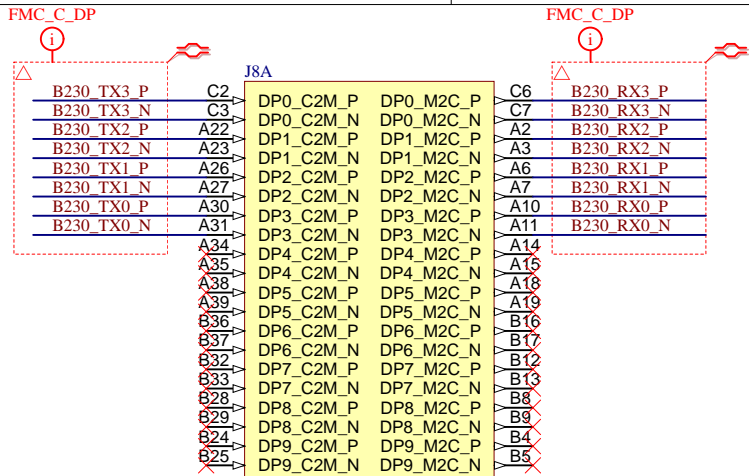
ASP-134486-01, CC-HPC-10



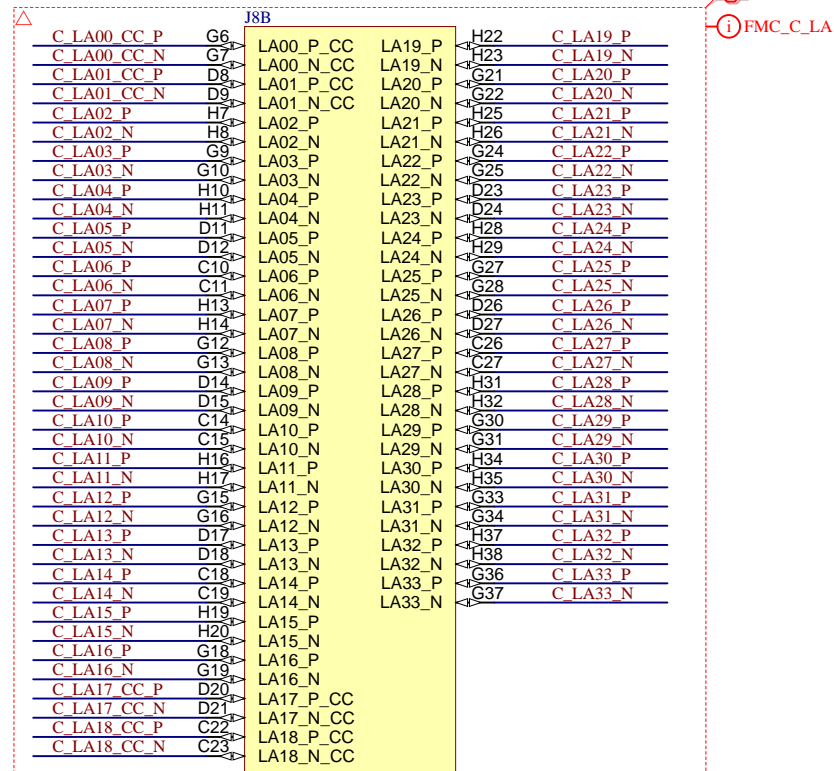
ASP-134486-01, CC-HPC-10



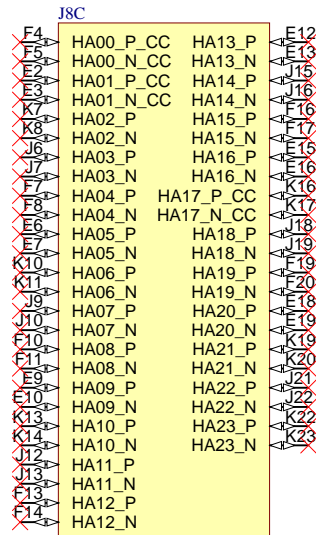
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Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 22 of 58
Filename: FMC_B.SchDoc		



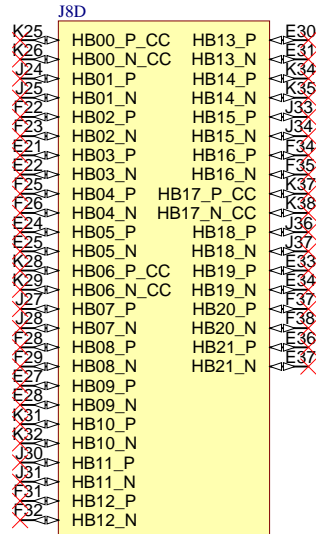
ASP-134486-01, CC-HPC-10



ASP-134486-01, CC-HPC-10



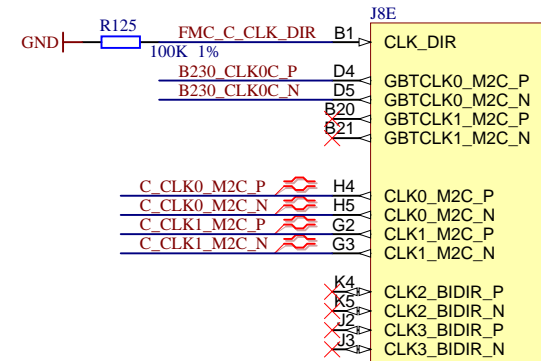
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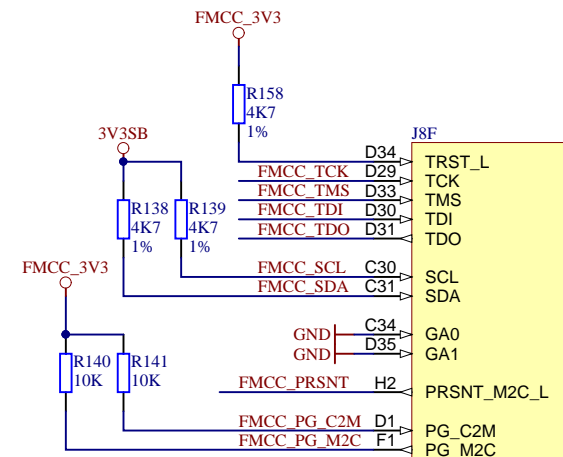
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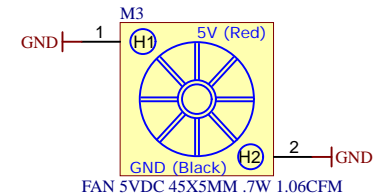
Single FMC Commercial Baseboard Snap



ASP-134486-01, CC-HPC-10



ASP-134486-01, CC-HPC-10



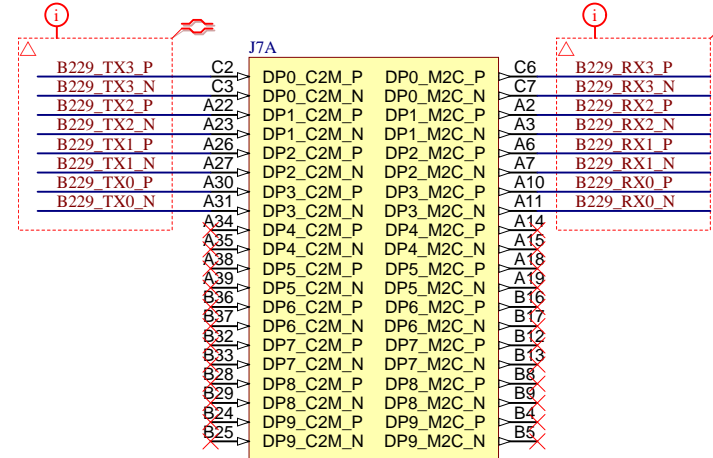
FAN 5VDC 45X5MM .7W 1.06CFM

Title: TEB0911 - FMC C		
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Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page23 of 58
Filename: FMC_C.SchDoc		

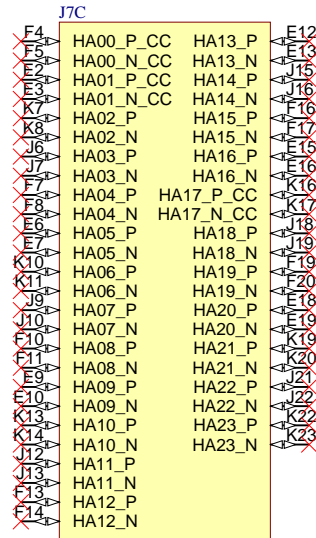


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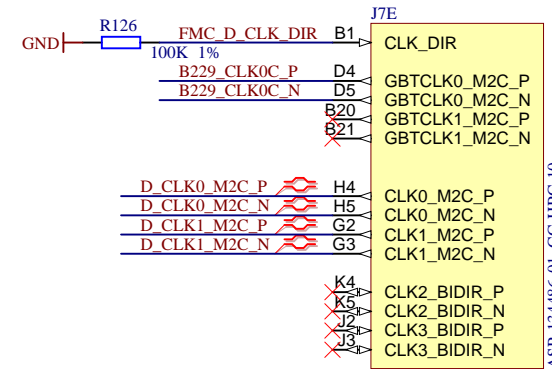
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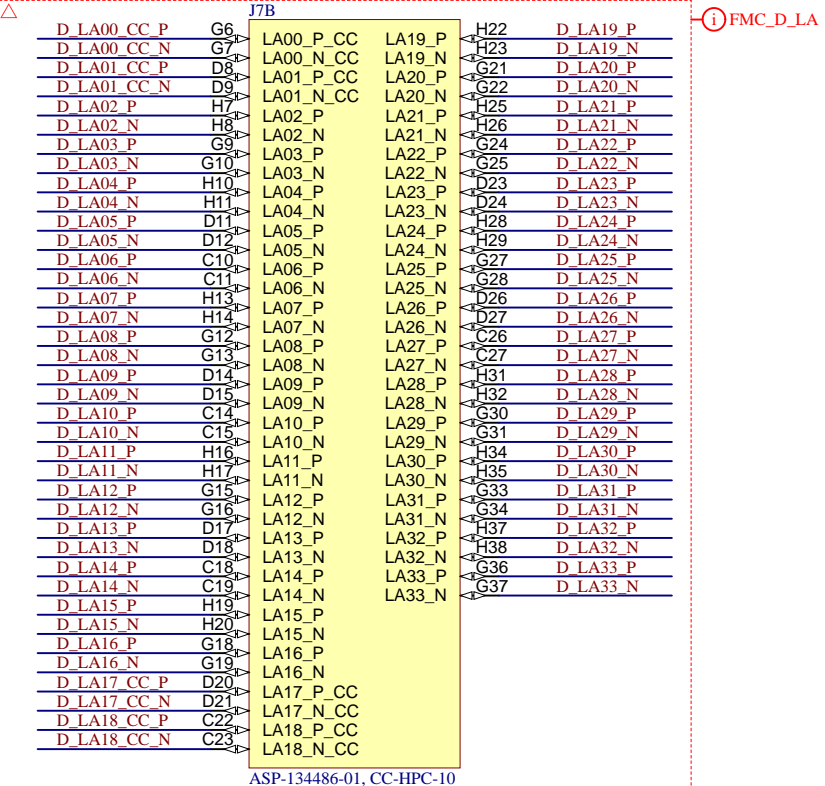
ASP-134486-01, CC-HPC-10



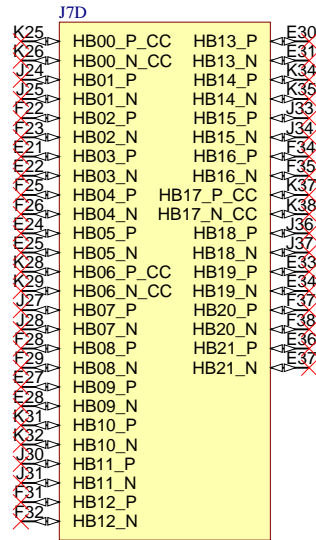
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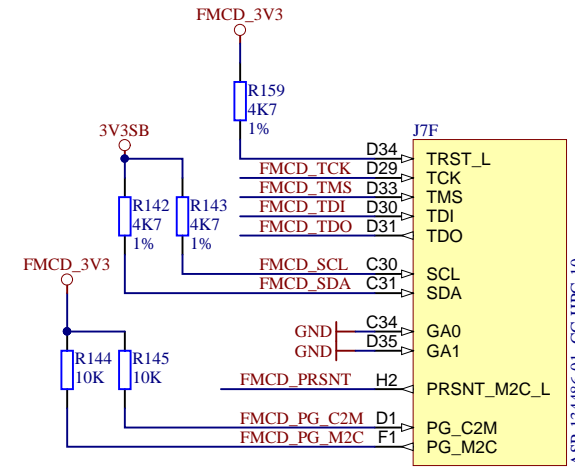
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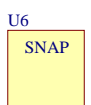
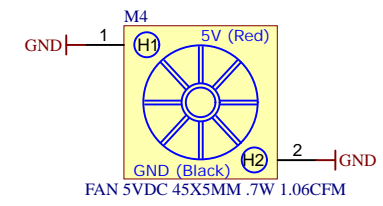
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ASP-134486-01, CC-HPC-10



ASP-134486-01, CC-HPC-10



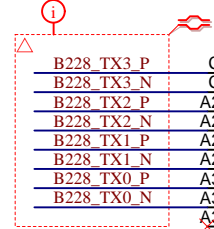
Single FMC Commercial Baseboard Snap



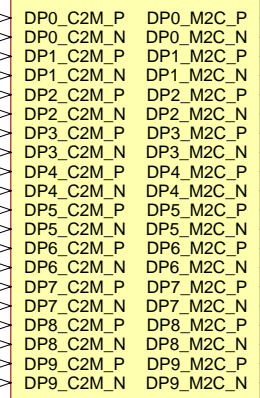
Title: TEB0911 - FMC D		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page24 of 58
Filename: FMC_D.SchDoc		



FMC\_E\_DP

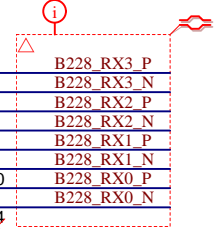


J6A

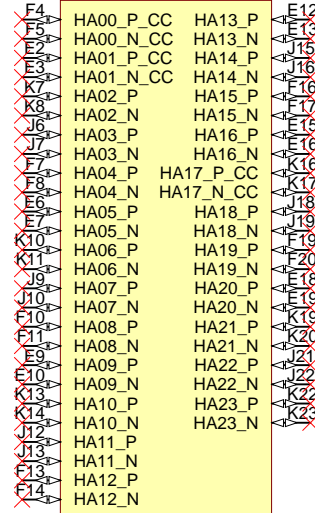


ASP-134486-01, CC-HPC-10

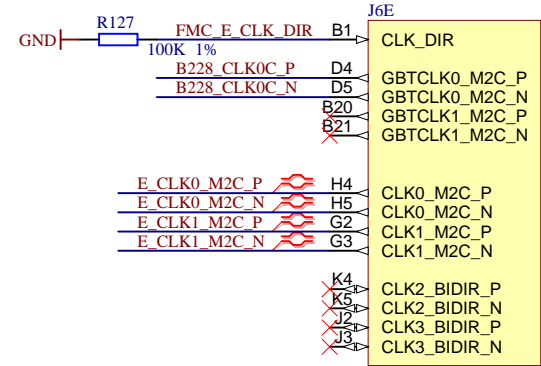
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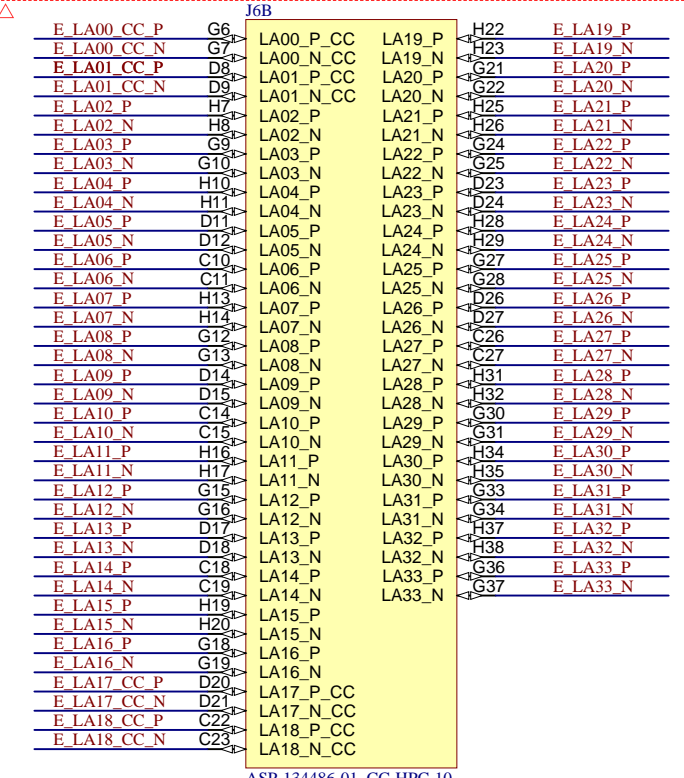
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ASP-134486-01, CC-HPC-10



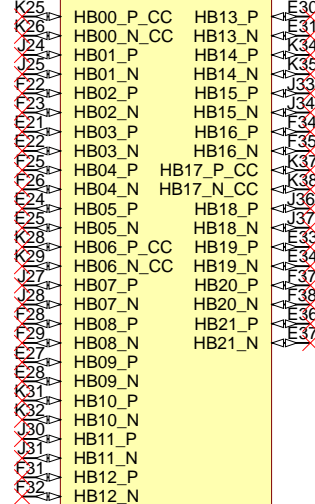
ASP-134486-01, CC-HPC-10



ASP-134486-01, CC-HPC-10

FMC\_E\_LA

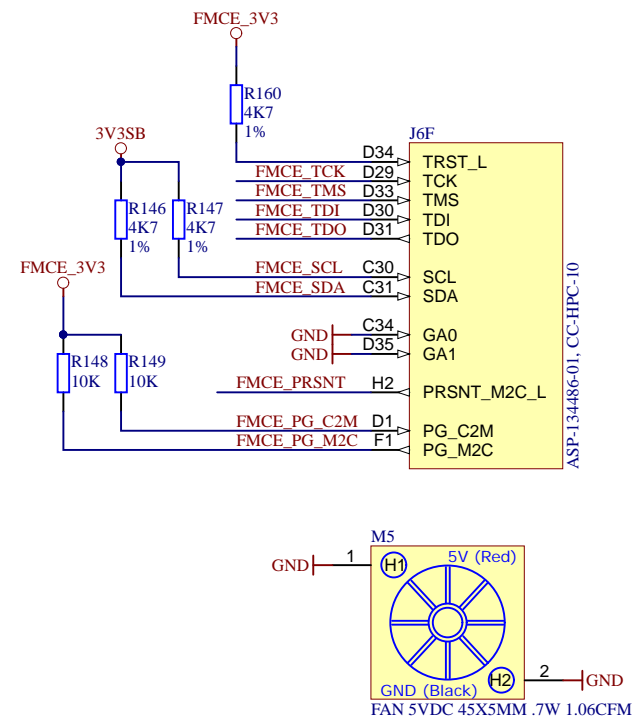
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ASP-134486-01, CC-HPC-10



Single FMC Commercial Baseboard Snap

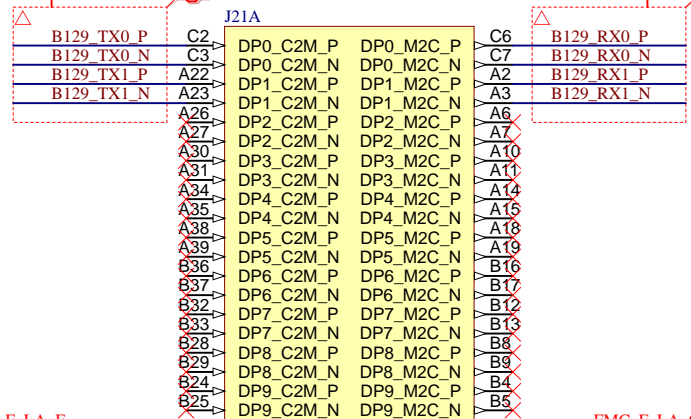


ASP-134486-01, CC-HPC-10

Title: TEB0911 - FMC E		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page25 of 58
Filename: FMC_E.SchDoc		

FMC\_F\_DP

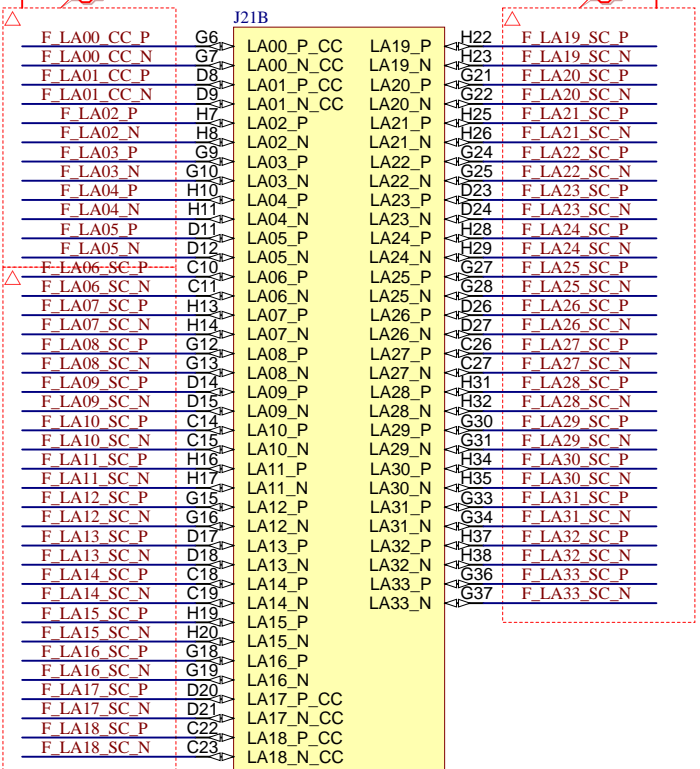
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ASP-134486-01, CC-HPC-10

FMC\_F\_LA\_C

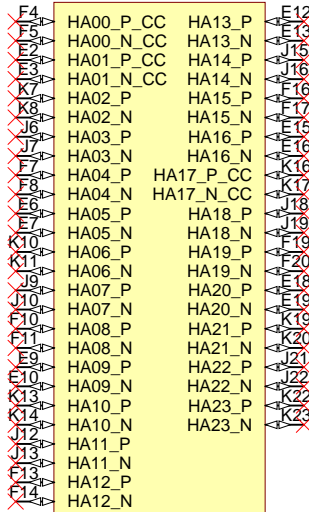
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ASP-134486-01, CC-HPC-10

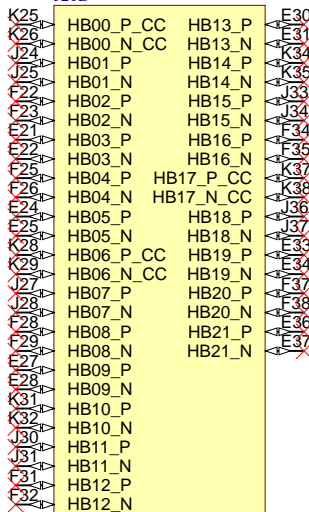
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J21C



ASP-134486-01, CC-HPC-10

J21D

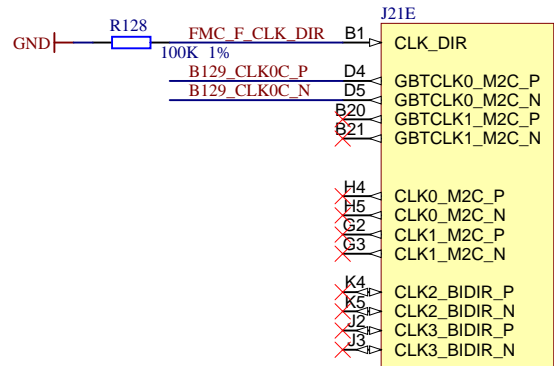


ASP-134486-01, CC-HPC-10

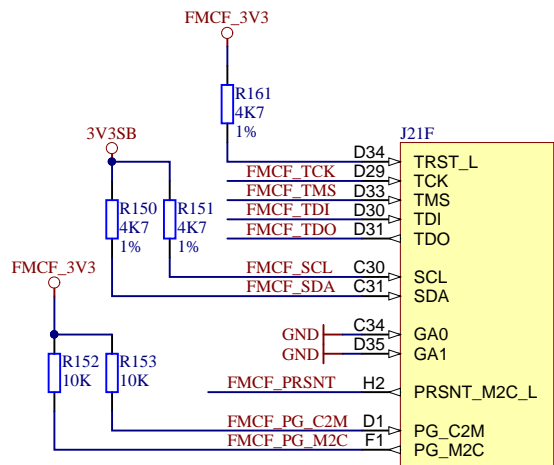
U19

SNAP

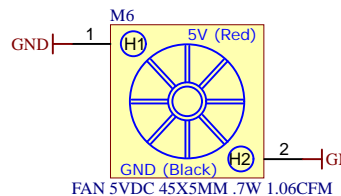
Single FMC Commercial Baseboard Snap



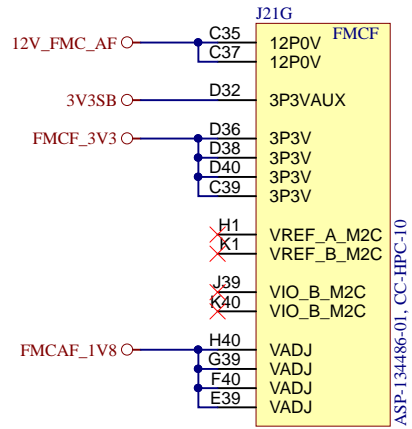
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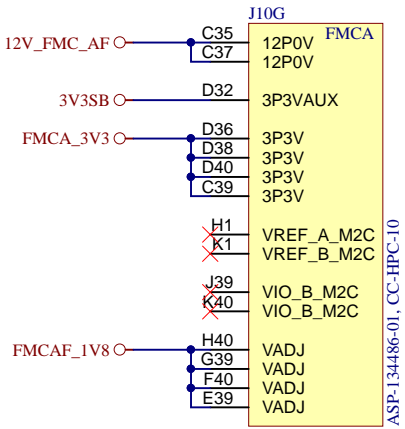
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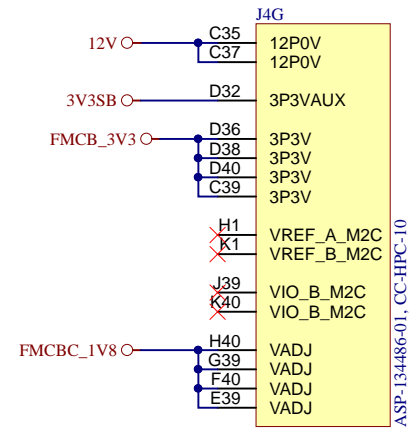
Title: TEB0911 - FMC F		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 26 of 58
Filename: FMC_F.SchDoc		



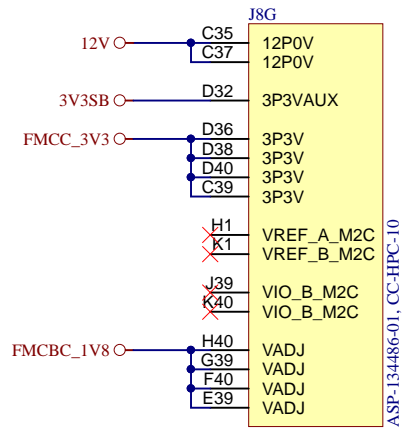
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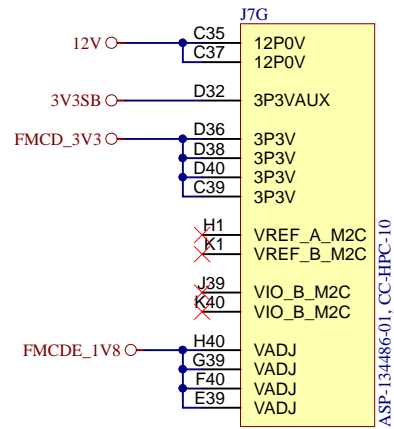
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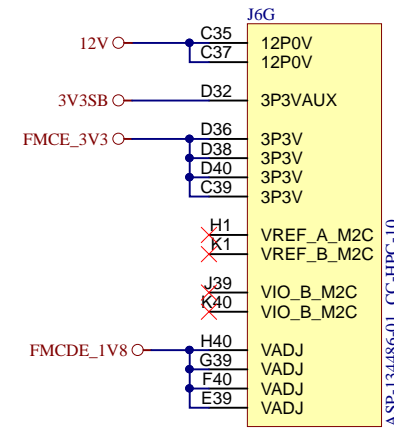
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ASP-134486-01, CC-HPC-10



ASP-134486-01, CC-HPC-10

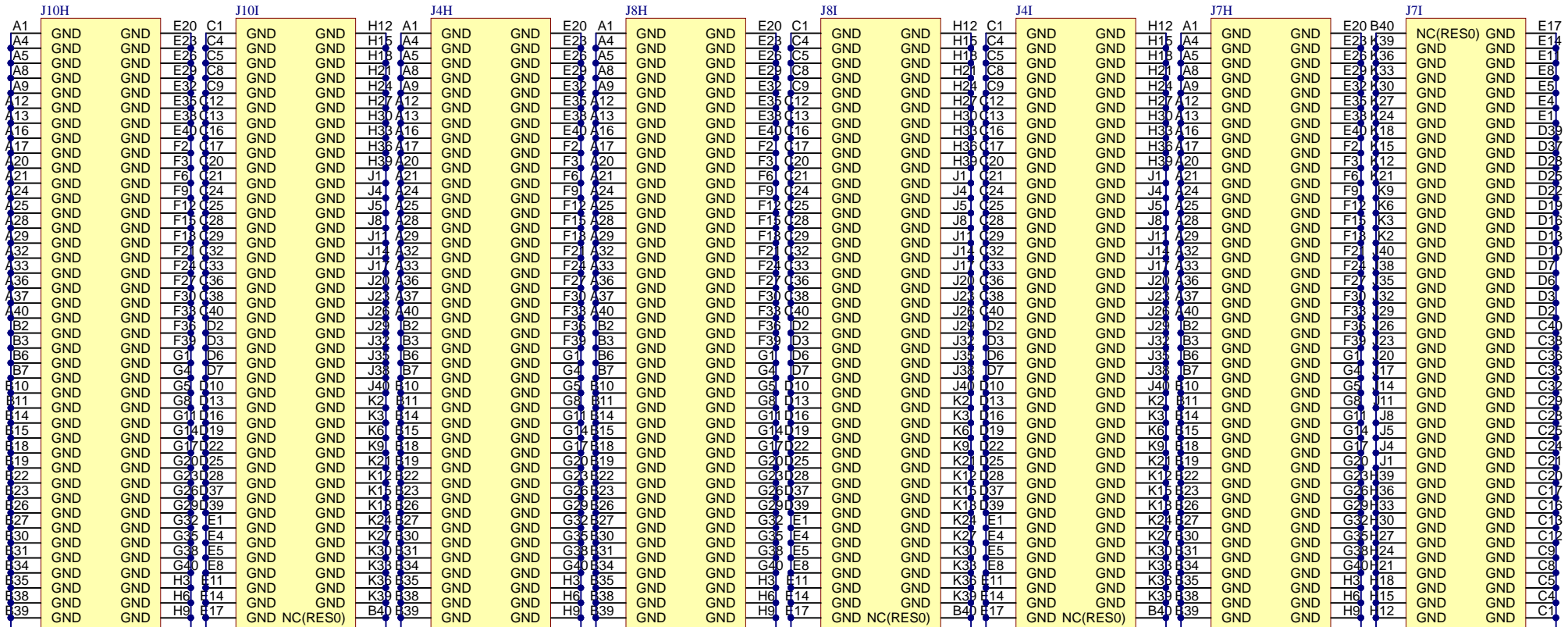


ASP-134486-01, CC-HPC-10

- FMC\_A  
FMC\_A.SchDoc
- FMC\_B  
FMC\_B.SchDoc
- FMC\_C  
FMC\_C.SchDoc
- FMC\_D  
FMC\_D.SchDoc
- FMC\_E  
FMC\_E.SchDoc
- FMC\_F  
FMC\_F.SchDoc
- FMC\_GND  
FMC\_GND.SchDoc
- FMC\_GND2  
FMC\_GND2.SchDoc
- FMC\_MECH  
FMC\_MECH.SchDoc



Title: <b>TEB0911 - FMC POWER</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>27</b> of <b>58</b>
Filename: <b>FMC PWR.SchDoc</b>		

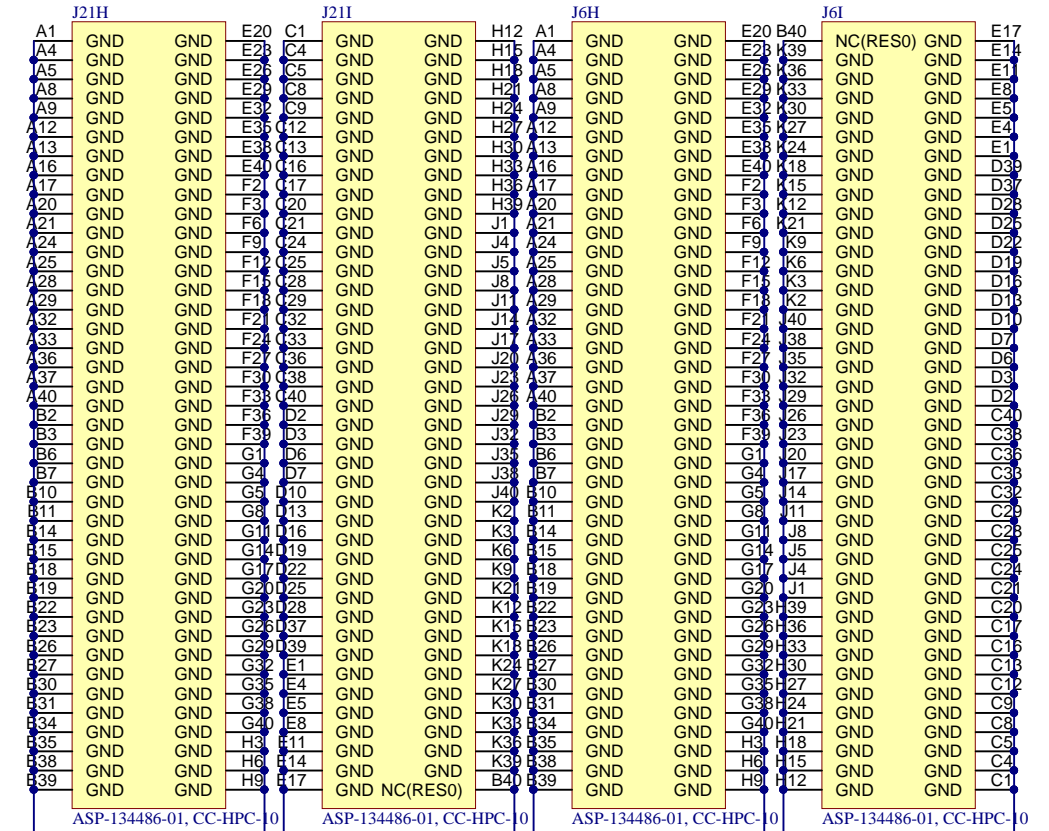
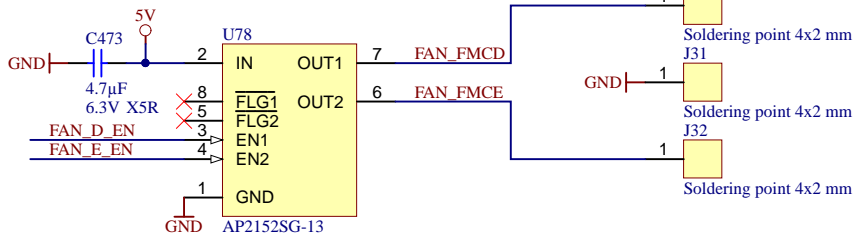
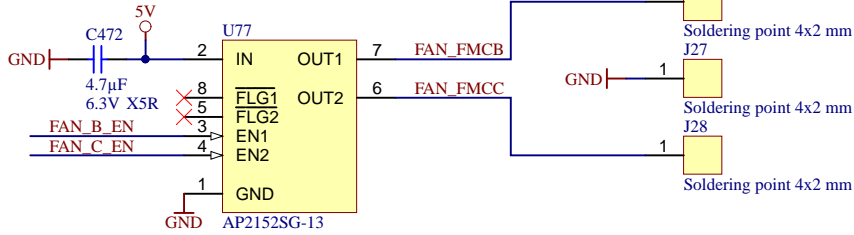
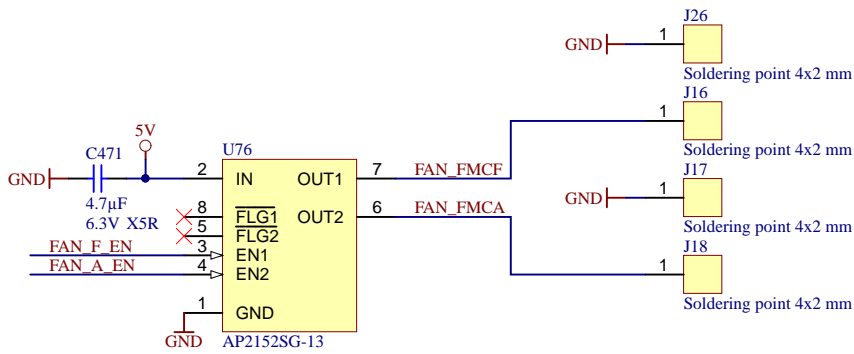


ASP-134486-01, CC-HPC-10    ASP-134486-01, CC-HPC-10    ASP-134486-01, CC-HPC-10    ASP-134486-01, CC-HPC-10    ASP-134486-01, CC-HPC-10    ASP-134486-01, CC-HPC-10    ASP-134486-01, CC-HPC-10

GND



Title: TEB0911 - FMC GND		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 28 of 58
Filename: FMC_GND.SchDoc		



Title: **TEB0911 - FMC GND FAN**

A4	Number: <b>TEB0911</b> <b>TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: Trenz Electronic GmbH	Page 29 of 58
Filename: <b>FMC GND2.SchDoc</b>		

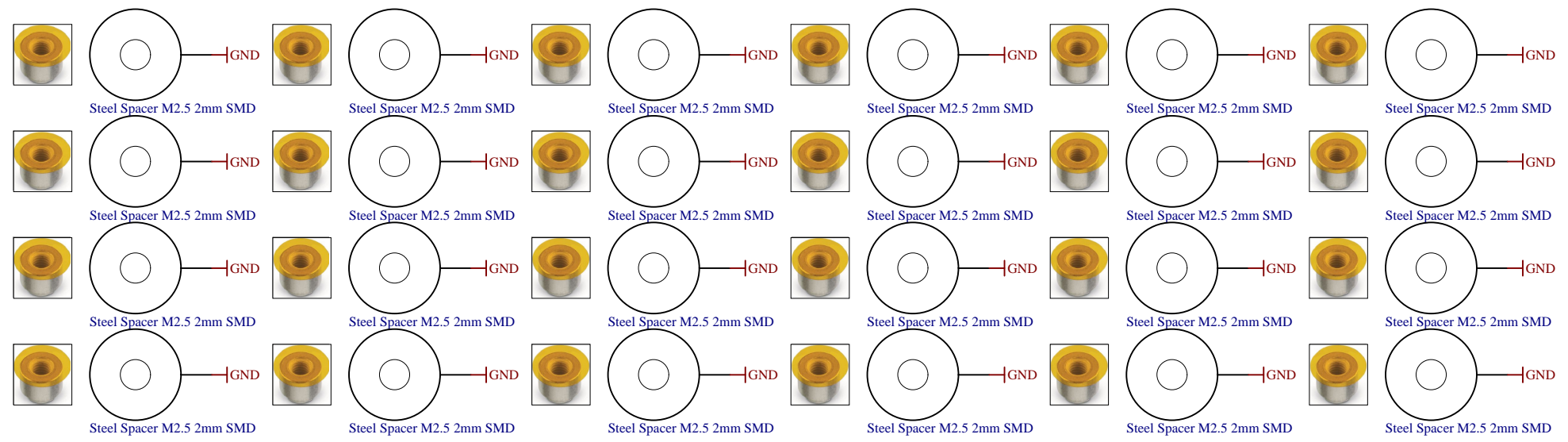
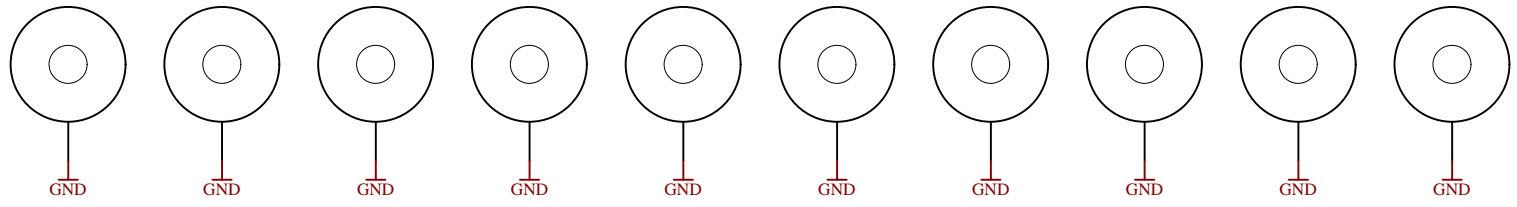
1


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Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm Mount.Hole 3.2mm



	Title: <b>TEB0911 - FMC MECH</b>		
	A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
	Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>30</b> of <b>58</b>
	Filename: <b>FMC_MECH.SchDoc</b>		

1

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4

A

B

C

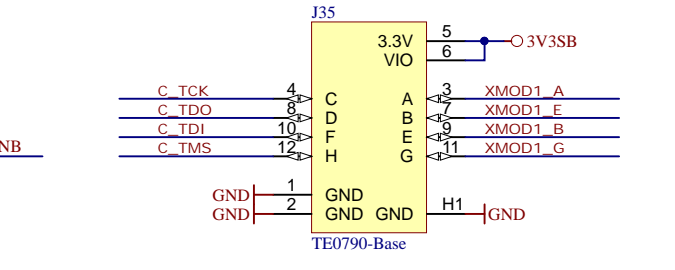
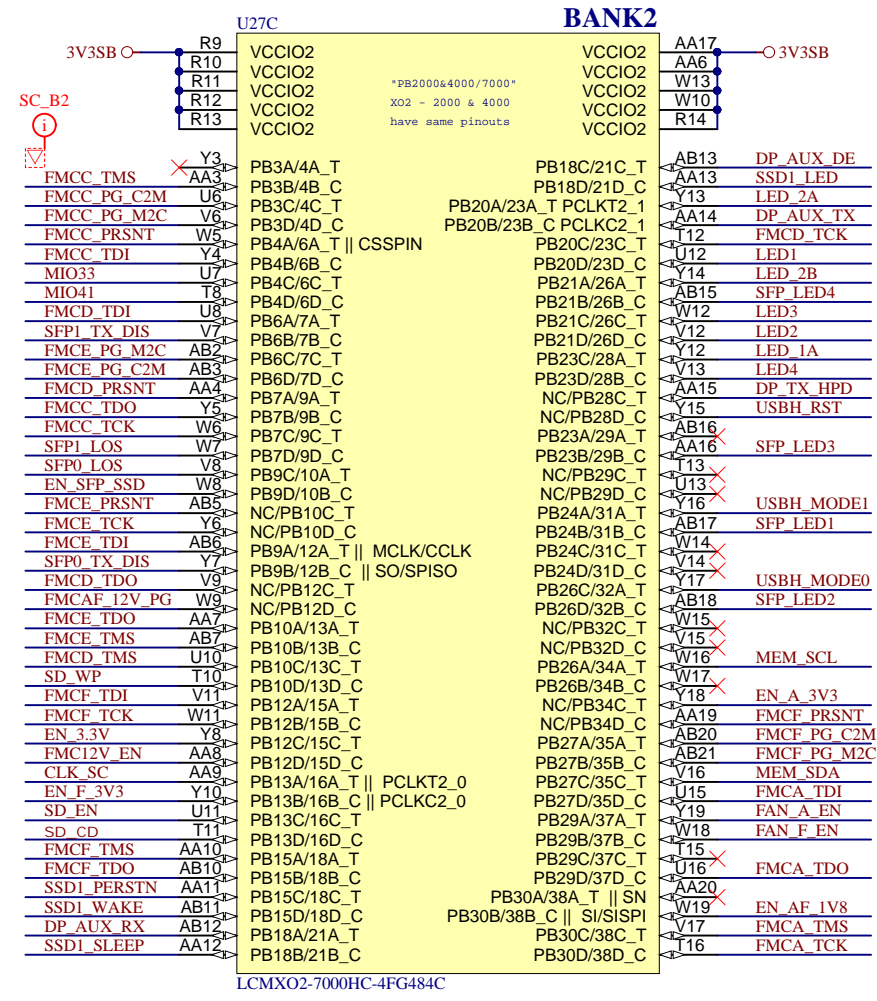
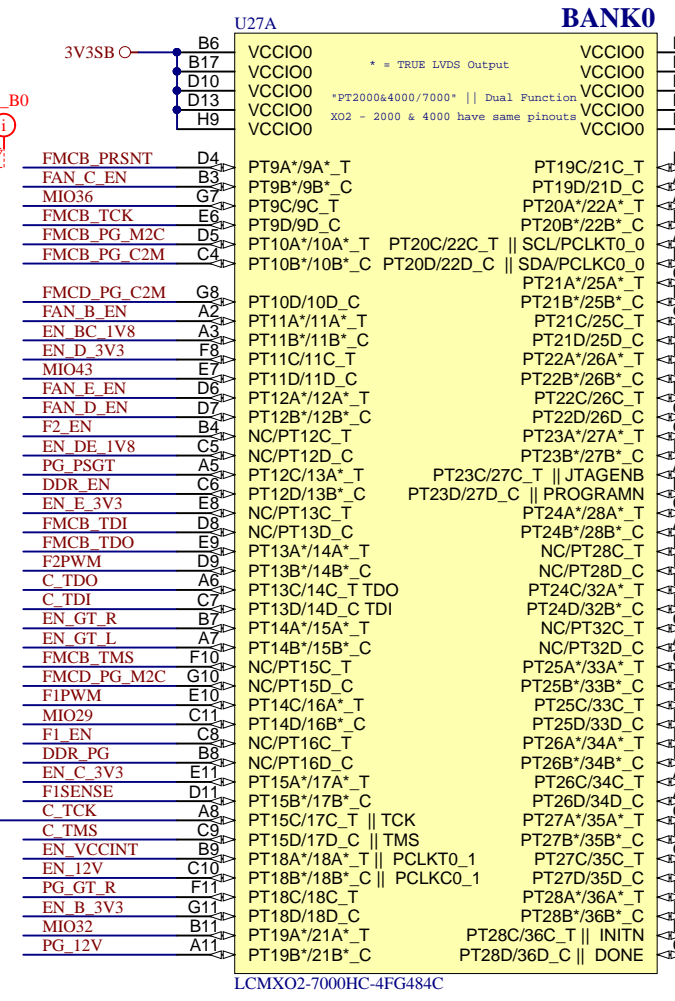
D

A

B

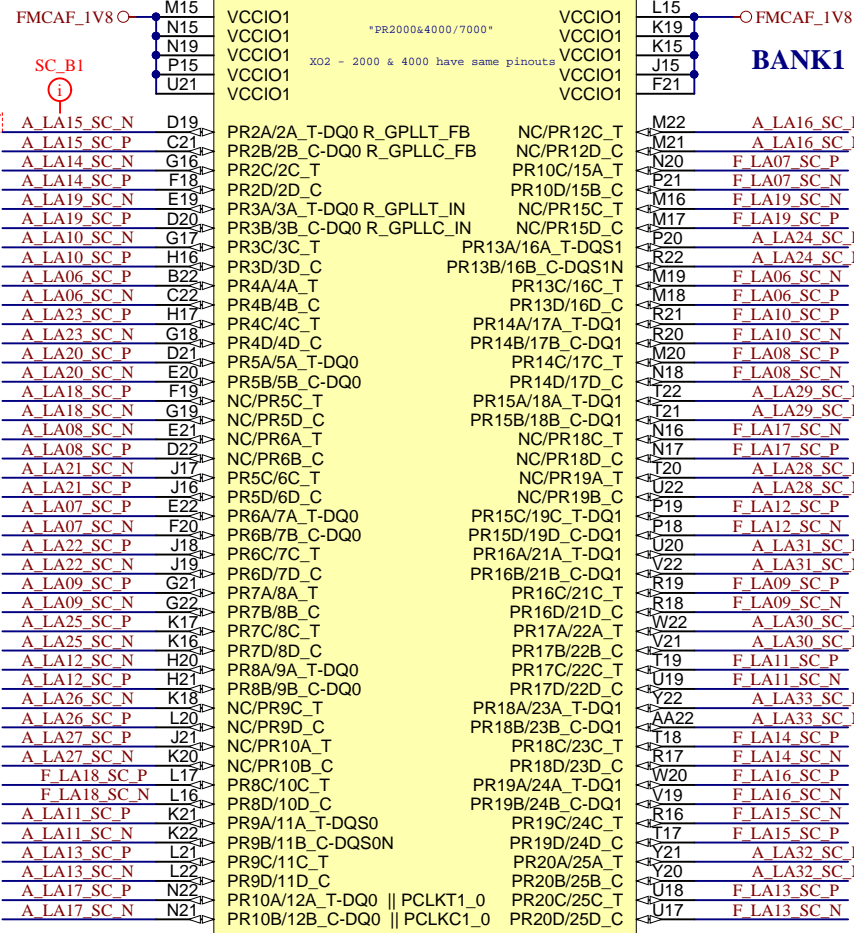
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D



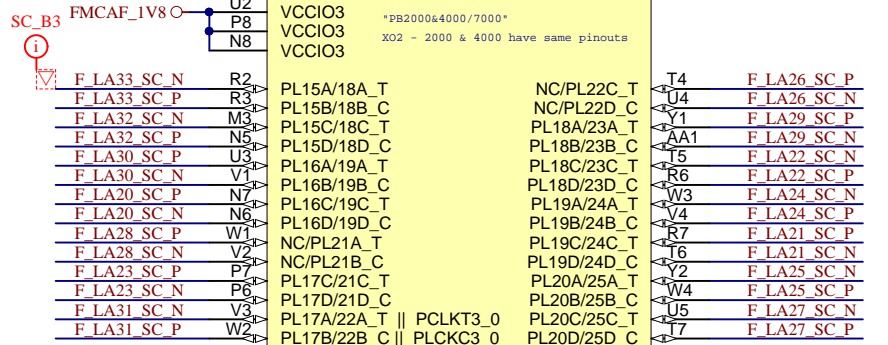
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A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>31</b> of <b>58</b>
Filename: <b>SC.schdoc</b>		

U27B



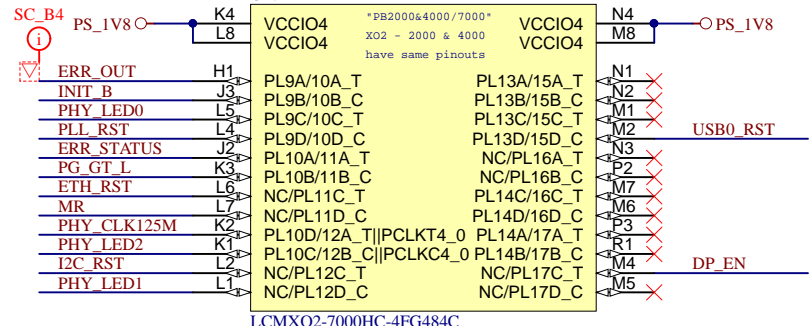
LCMX02-7000HC-4FG484C

U27D



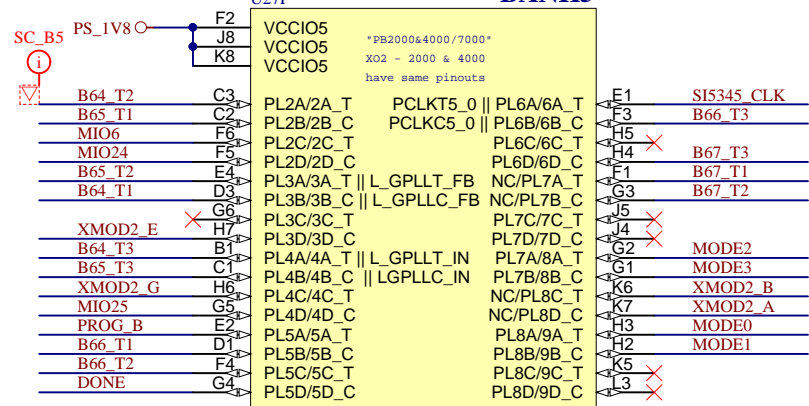
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U27E

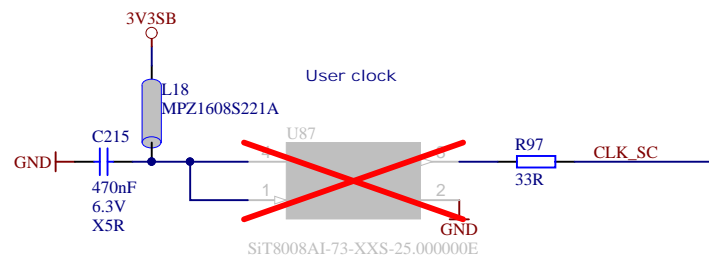


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U27F

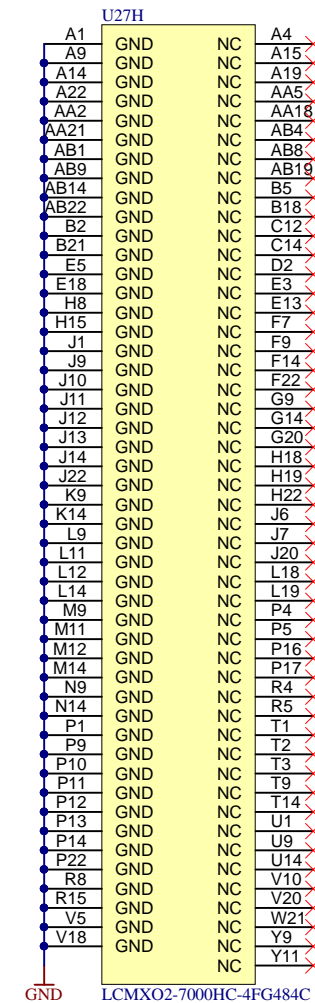
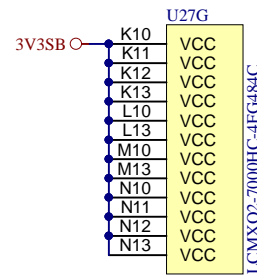
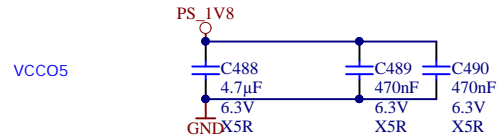
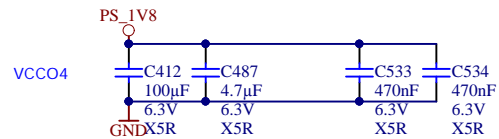
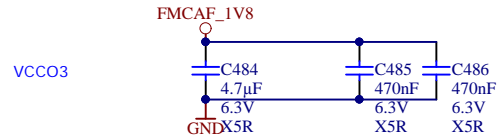
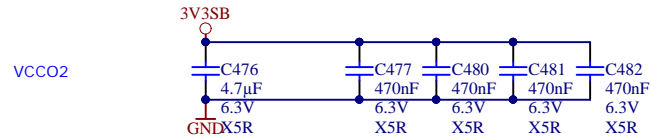
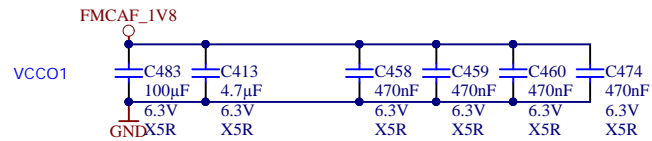
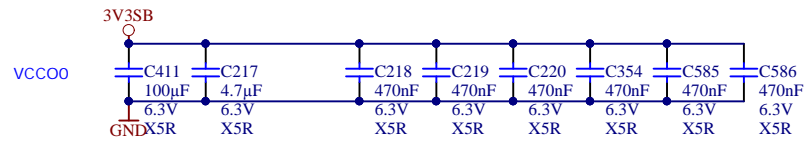
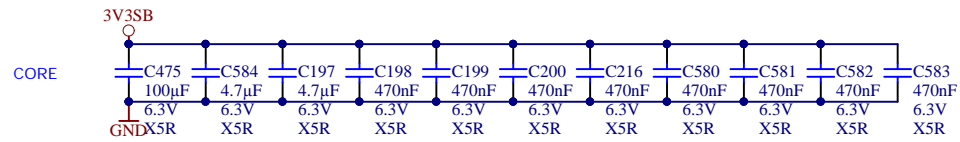


LCMX02-7000HC-4FG484C

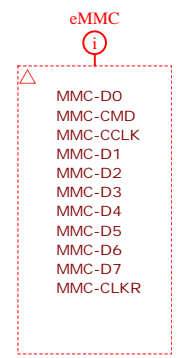
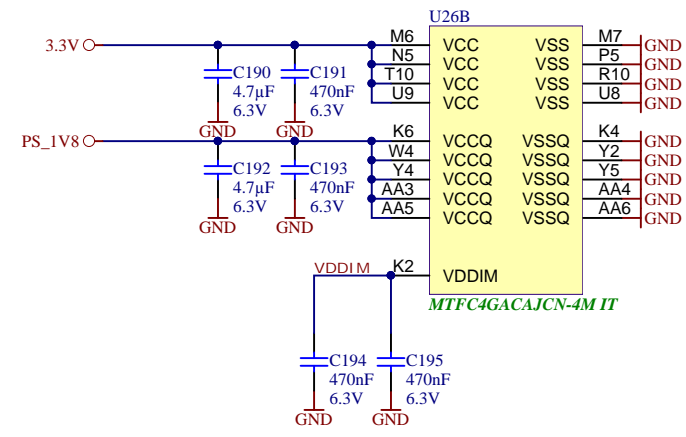
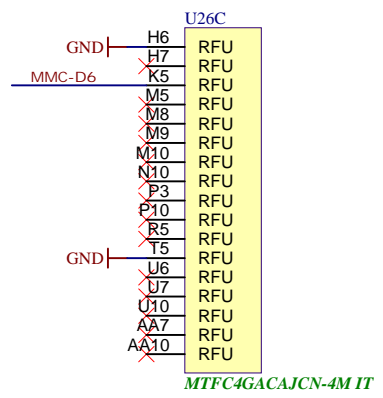
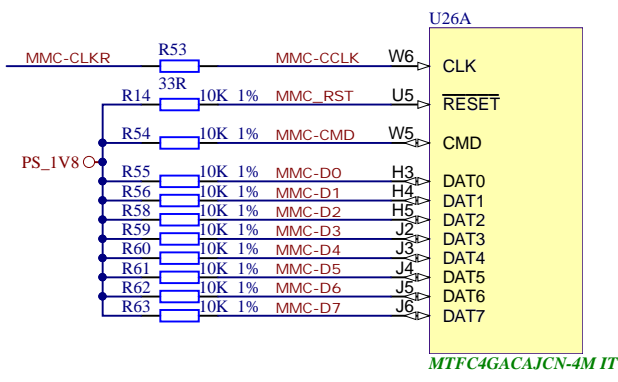
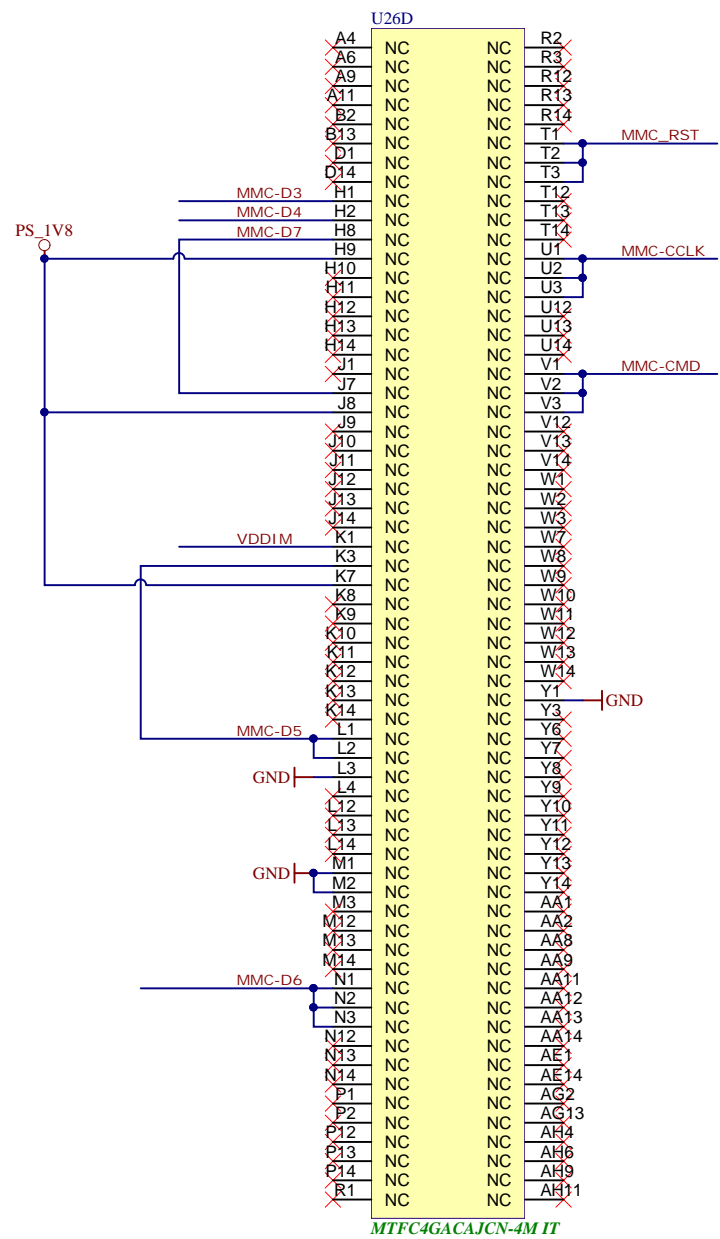


Title: <b>TEB0911 - CPLD</b>		Rev. <b>03</b>
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Page 32 of 58
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	
Filename: <b>SC2.schdoc</b>		

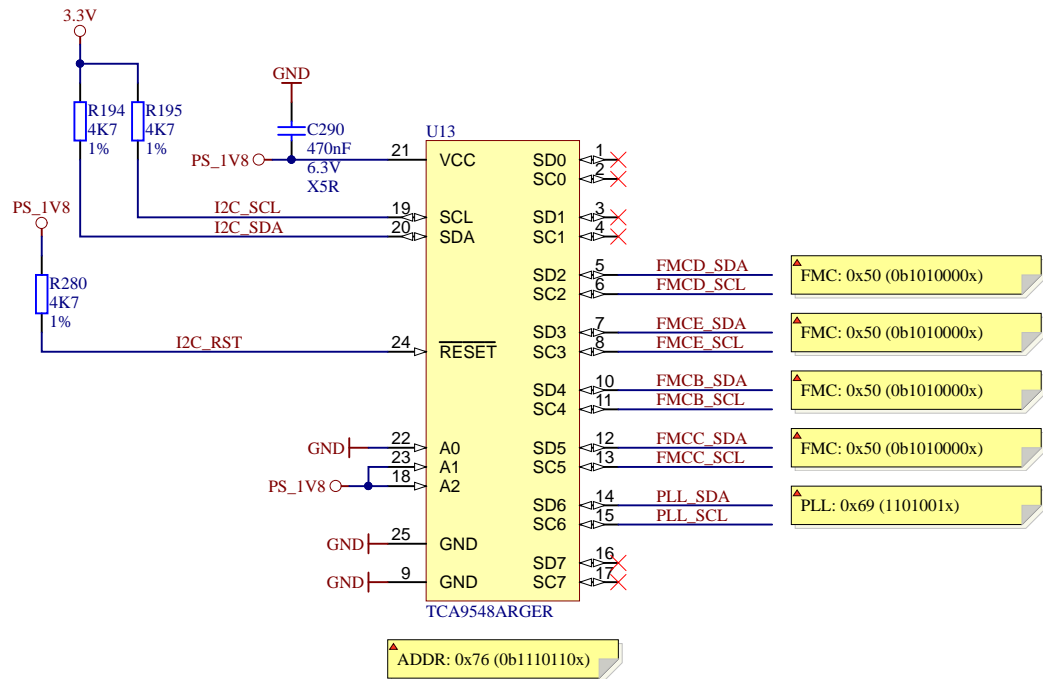




Title: TEB0911 - CPLD		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page33 of 58
Filename: SC_POWER.schdoc		

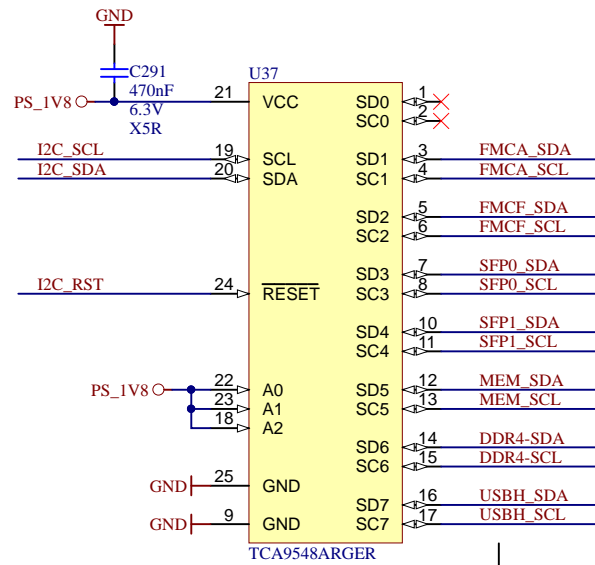


Title: TEB0911 - eMMC		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 34 of 58
Filename: eMMC.SchDoc		



▲ ADDR: 0x76 (0b1110110x)

- ▲ FMC: 0x50 (0b1010000x)
- ▲ FMC: 0x50 (0b1010000x)
- ▲ FMC: 0x50 (0b1010000x)
- ▲ FMC: 0x50 (0b1010000x)
- ▲ FMC: 0x50 (0b1010000x)



▲ ADDR: 0x77 (0b1110111x)

- ▲ FMC: 0x50 (0b1010000x)
- ▲ FMC: 0x50 (0b1010000x)
- ▲ SFP0\_SDA: 0x50 (0b1010000x)
- ▲ SFP0\_SCL: 0x51 (0b1010001x)
- ▲ SFP1\_SDA: 0x50 (0b1010000x)
- ▲ SFP1\_SCL: 0x51 (0b1010001x)
- ▲ MEM\_SDA: 0x52 (0b1010010x) ?
- ▲ MEM\_SCL: 0x52 (0b1010010x) ?
- ▲ DDR4\_SDA: 0x52 (0b1010010x) ?
- ▲ DDR4\_SCL: 0x52 (0b1010010x) ?
- ▲ SMB\_ADDR: 0x58

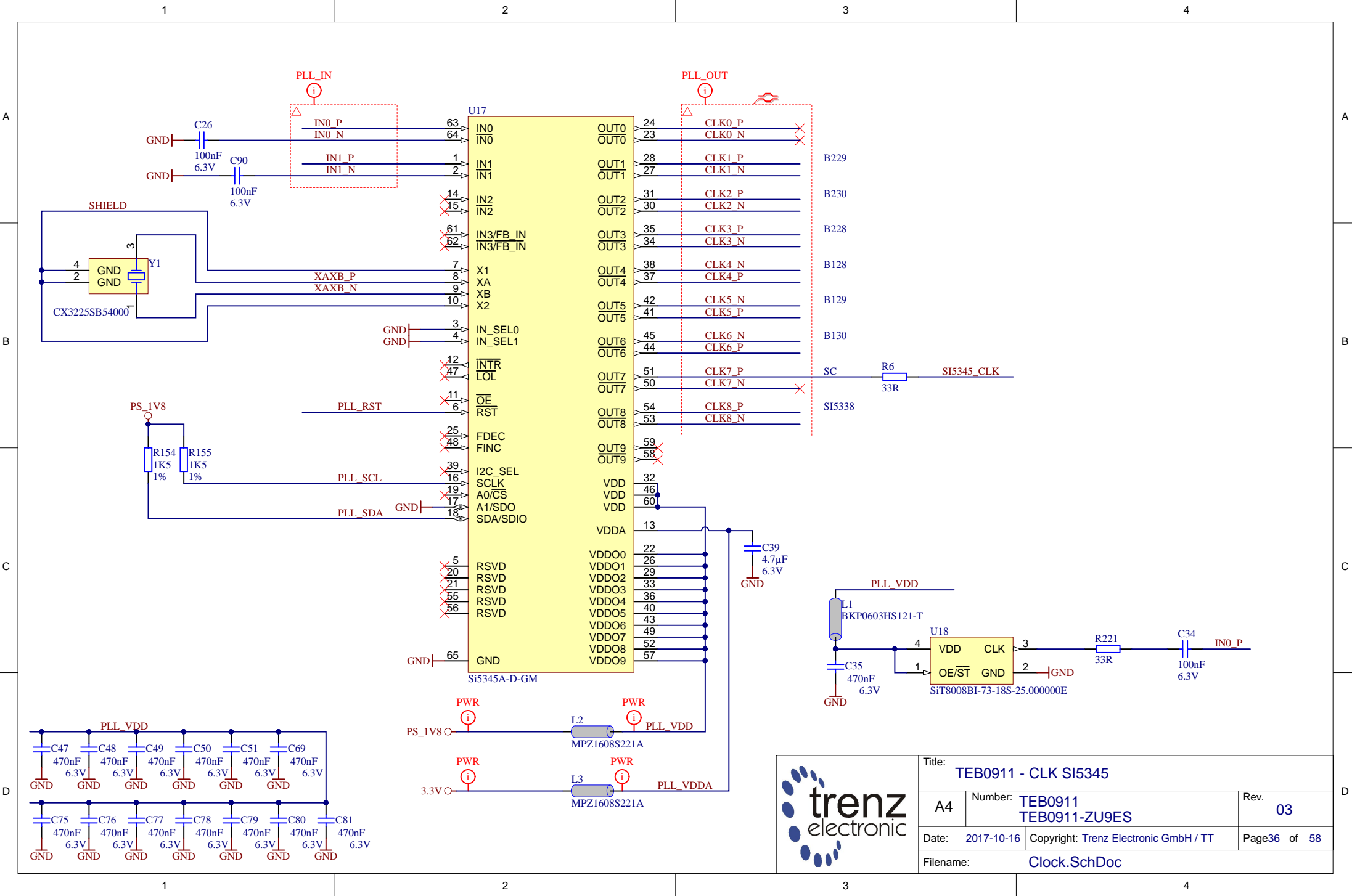
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0x51 (0b1010001x)


▲ SFP2\_CTRL: 0x27  
(0b0100111x)

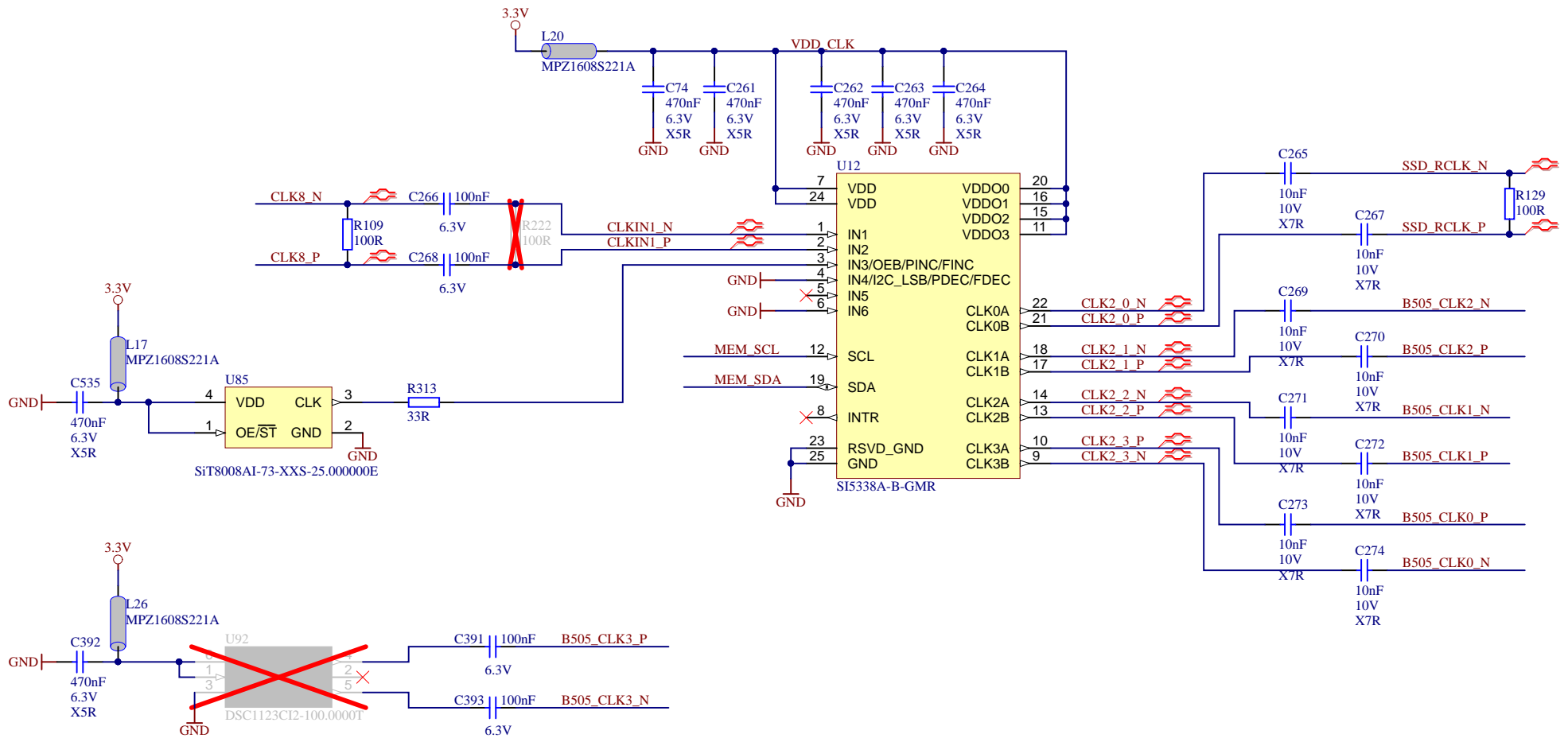
- ▲ CLK: 0x70 (0b1110000x)
- ▲ EEPROM: 0x51 (0b1010001x)
- ▲ EEPROM: 0x52 (0b1010010x)
- ▲ EEPROM: 0x53 (0b1010011x)
- ▲ EEPROM: 0x57 (0b1010111x)
- ▲ CPLD:




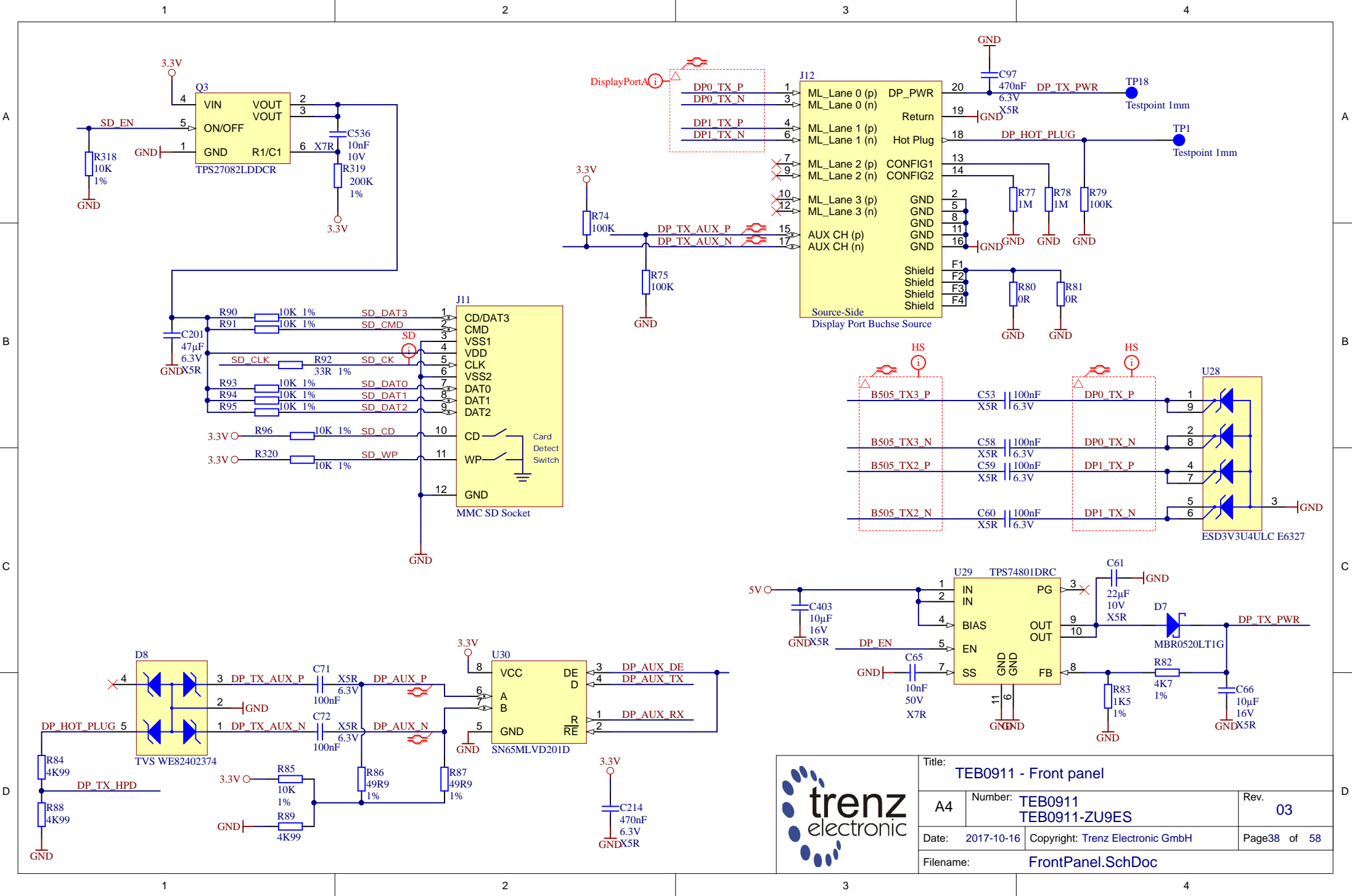
Title: TEB0911 - I2C System		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 35 of 58
Filename: I2C_system.schdoc		



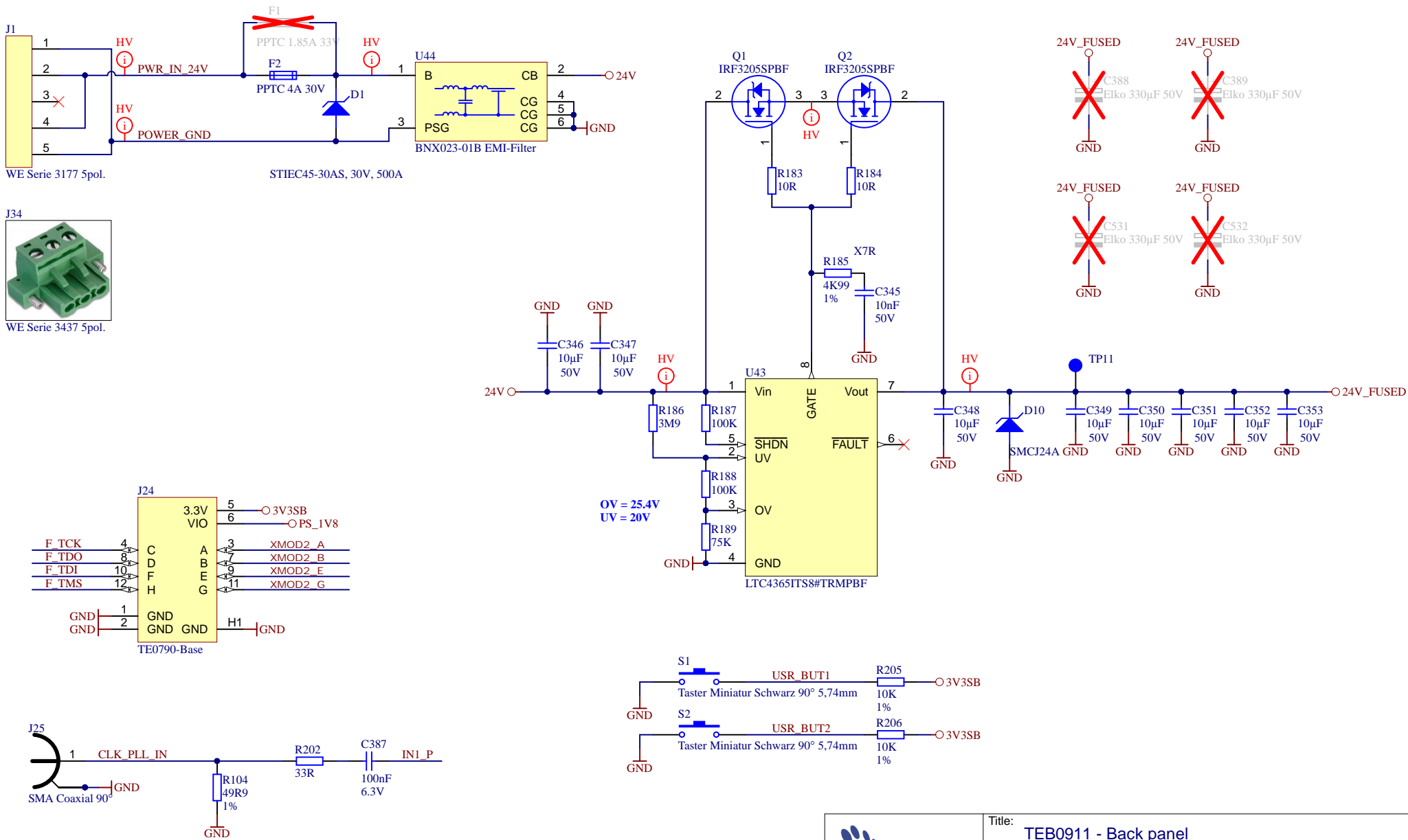
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A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>		Rev. <b>03</b>	
Date: <b>2017-10-16</b>		Copyright: <b>Trenz Electronic GmbH / TT</b>		Page <b>36</b> of <b>58</b>
Filename: <b>Clock.SchDoc</b>				



		Title: TEB0911 - CLK SI5338	
		A4	Number: TEB0911 TEB0911-ZU9ES
Date: 2017-10-16		Copyright: Trenz Electronic GmbH	
Filename: Clock2.SchDoc		Page 37 of 58	



Title: TEB0911 - Front panel		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page38 of 58
Filename: FrontPanel.SchDoc		



Title: TEB0911 - Back panel		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 39 of 58
Filename: BackPanel.SchDoc		

A

B

C

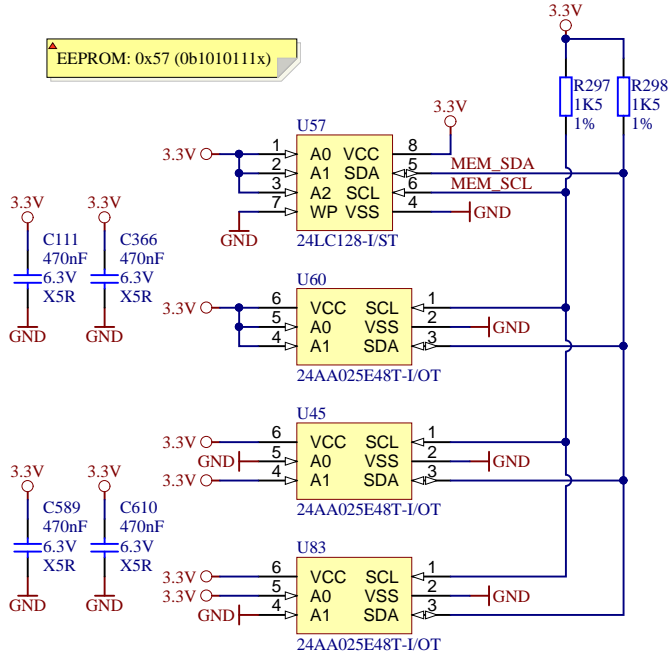
D

A

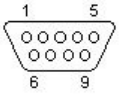
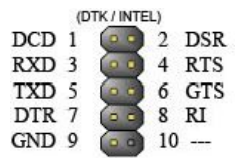
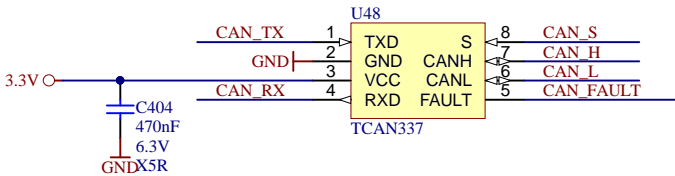
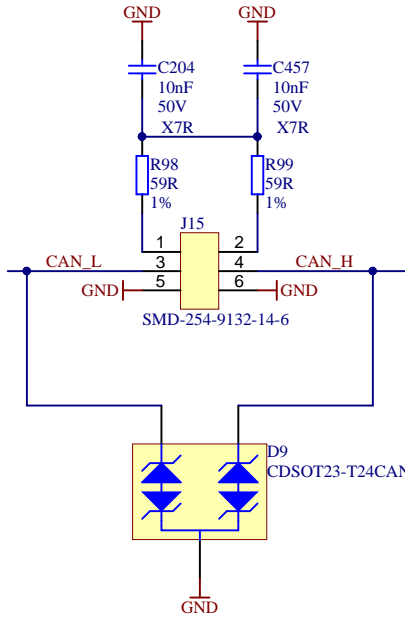
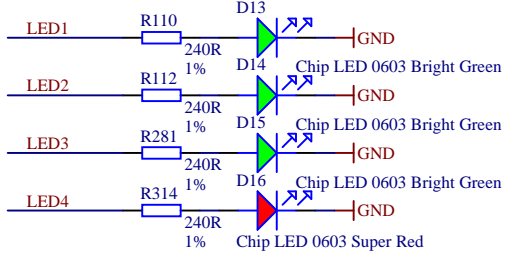
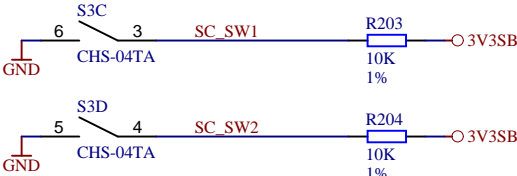
B

C

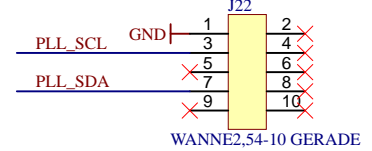
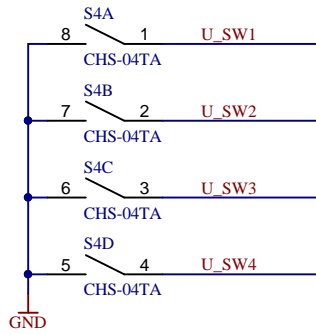
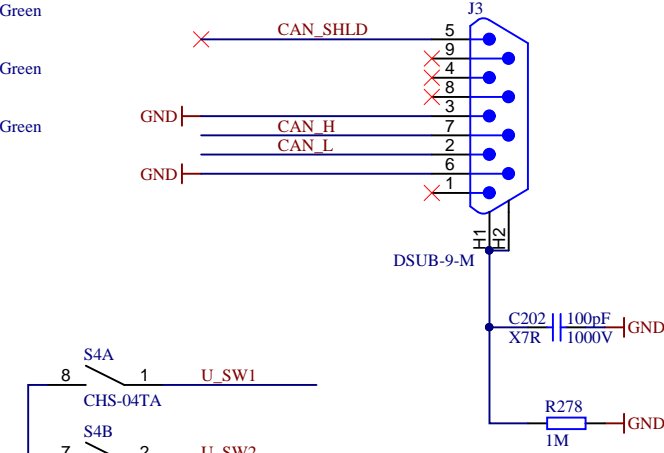
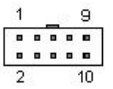
D



- EEPROM: 0x57 (0b1010111x)
- EEPROM: 0x53 (0b1010011x)
- EEPROM: 0x52 (0b1010010x)
- EEPROM: 0x51 (0b1010001x)

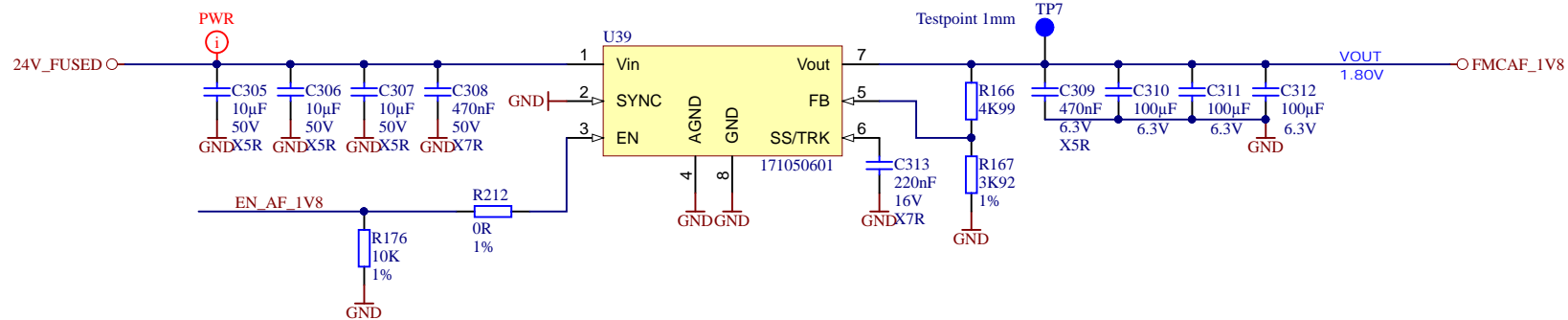
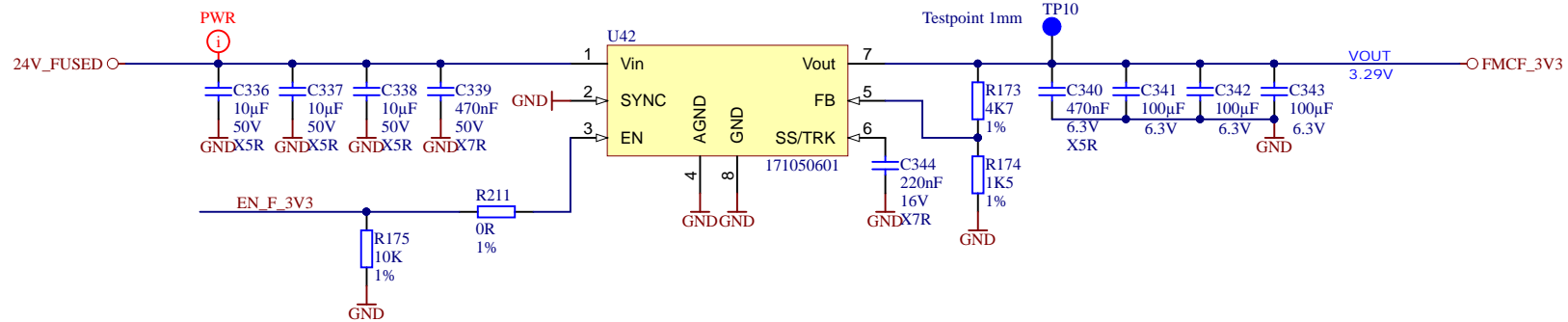
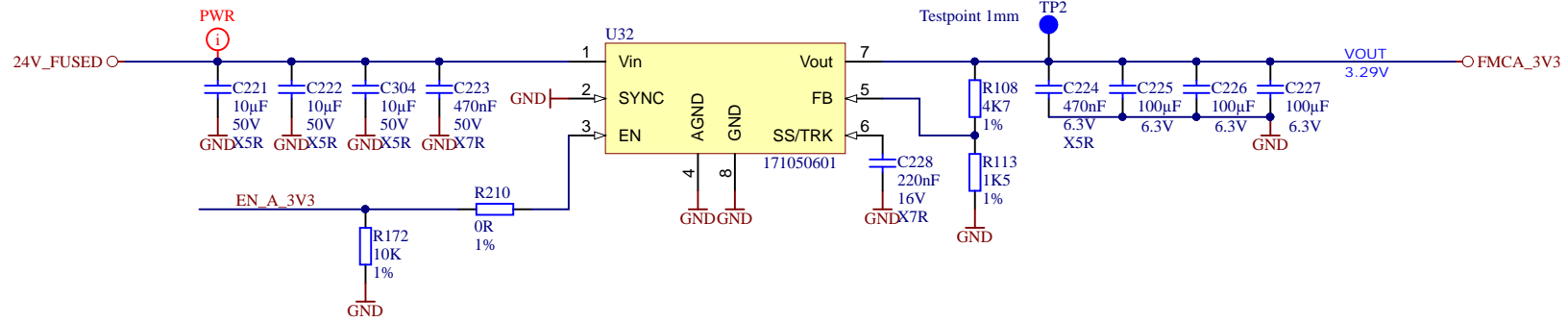



- 1-1
- 2-3
- 3-5
- 4-7
- 5-9
- 6-2
- 7-4
- 8-6
- 9-8
- 10--



Title: TEB0911 - MISC		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 40 of 58
Filename: MISC.schdoc		





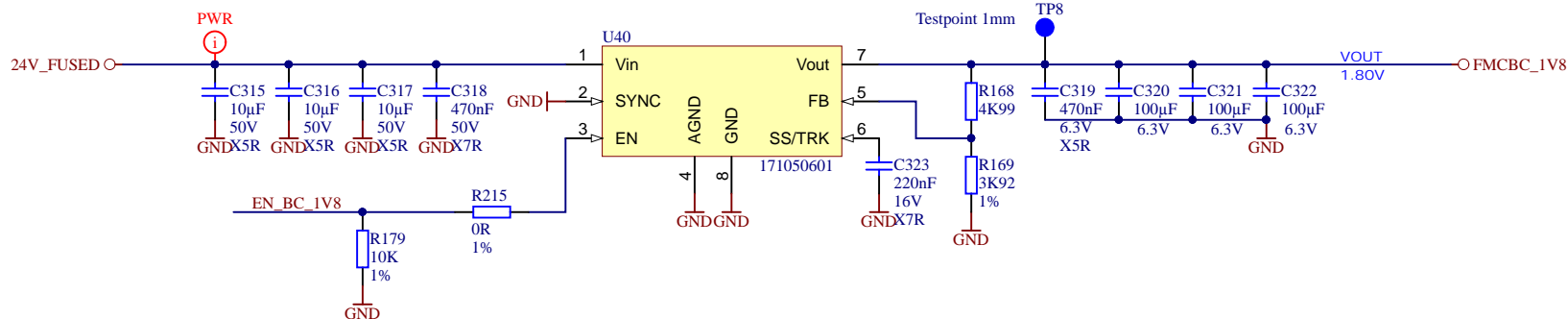
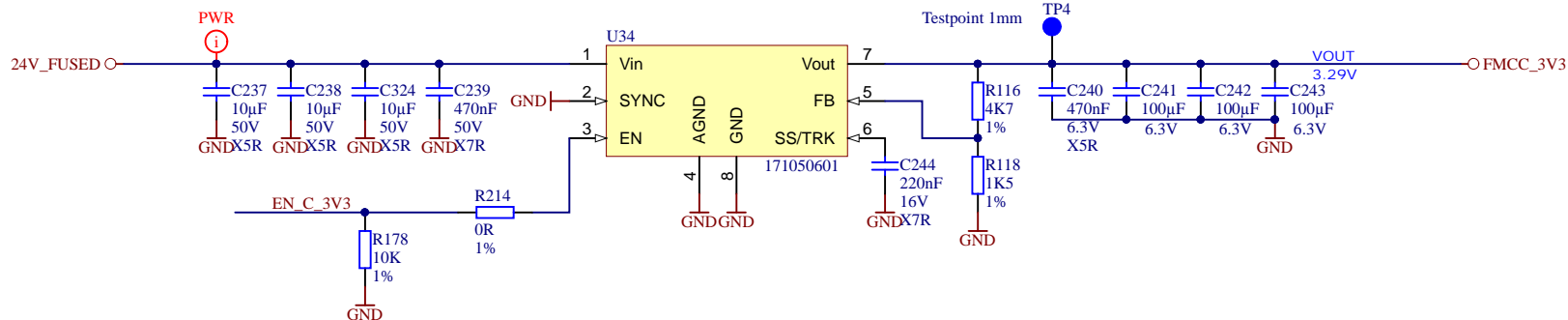
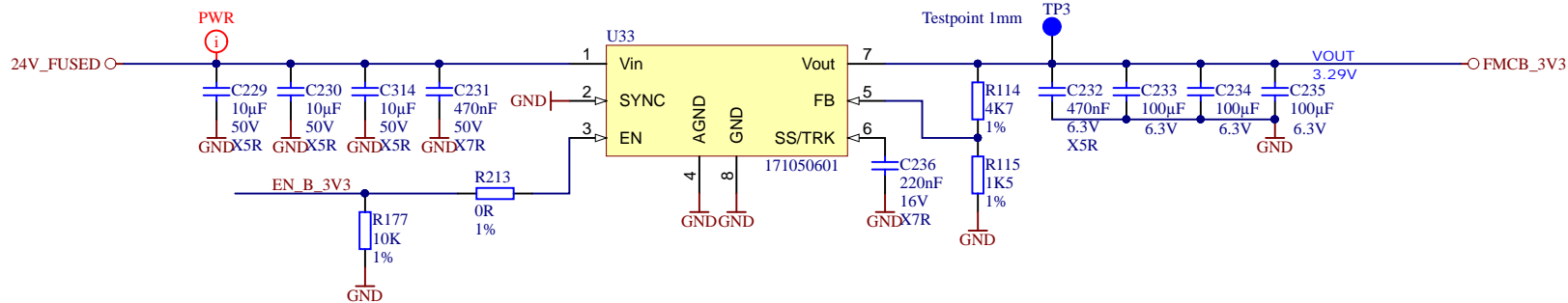
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		A4	Number: TEB0911 TEB0911-ZU9ES
Date: 2017-10-16		Copyright: Trenz Electronic GmbH	
Filename: POWER_1.schdoc		Page 41 of 58	


1

2

3

4



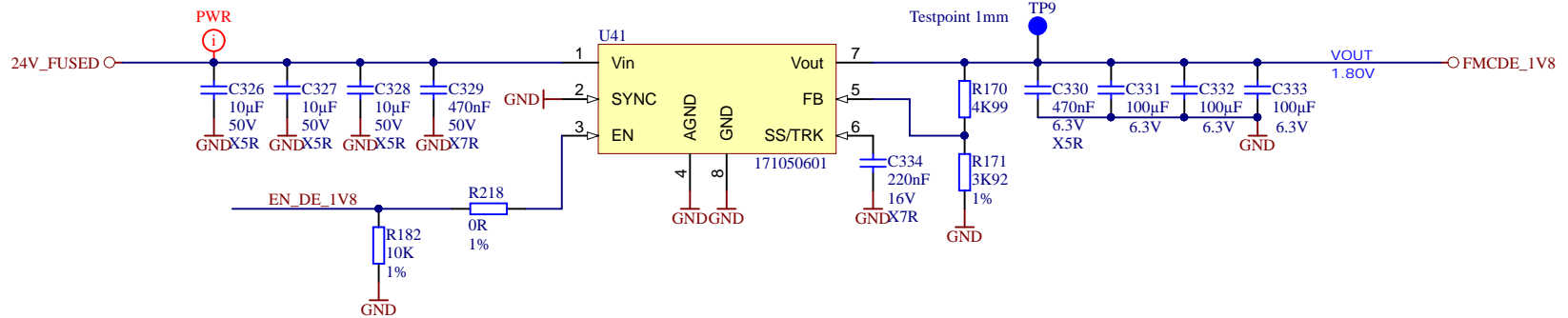
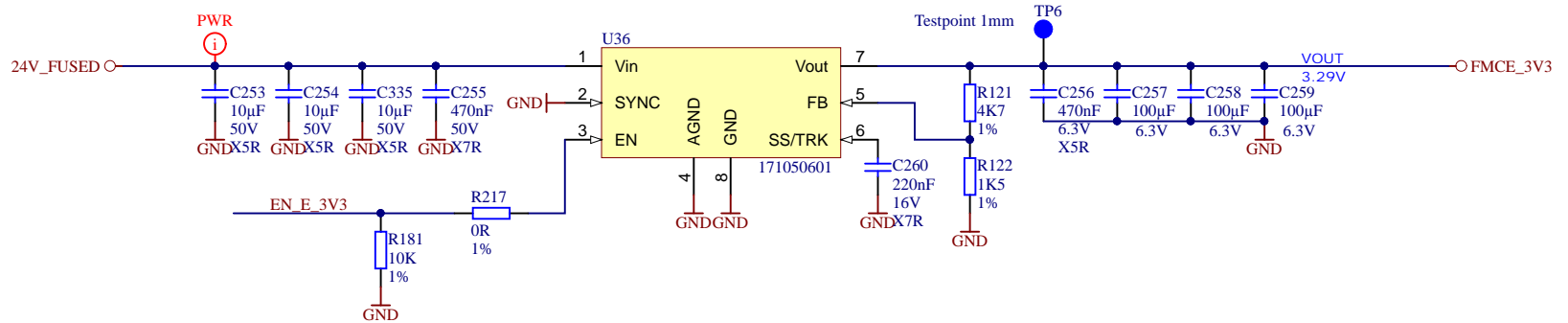
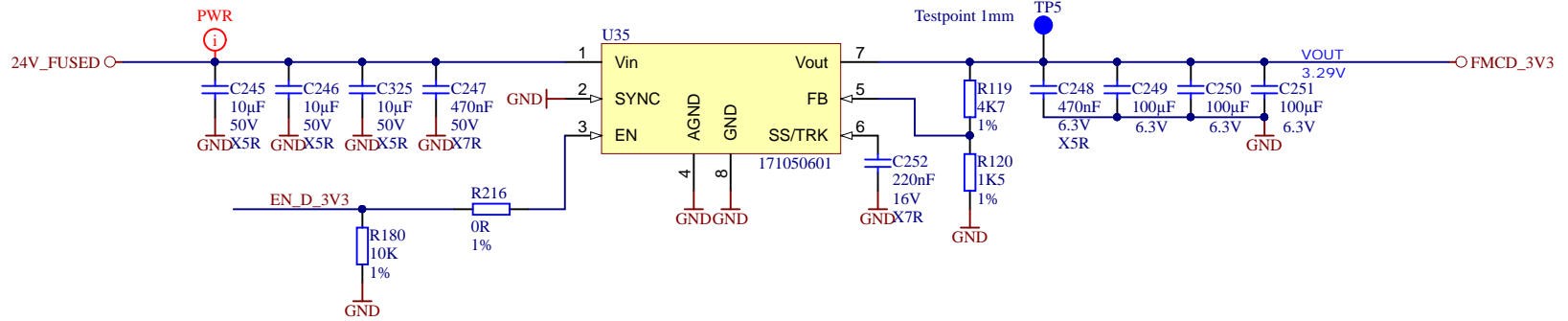
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			A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>
Date: 2017-10-16		Copyright: Trenz Electronic GmbH		Page 42 of 58
Filename: <b>POWER_2.schdoc</b>				


1

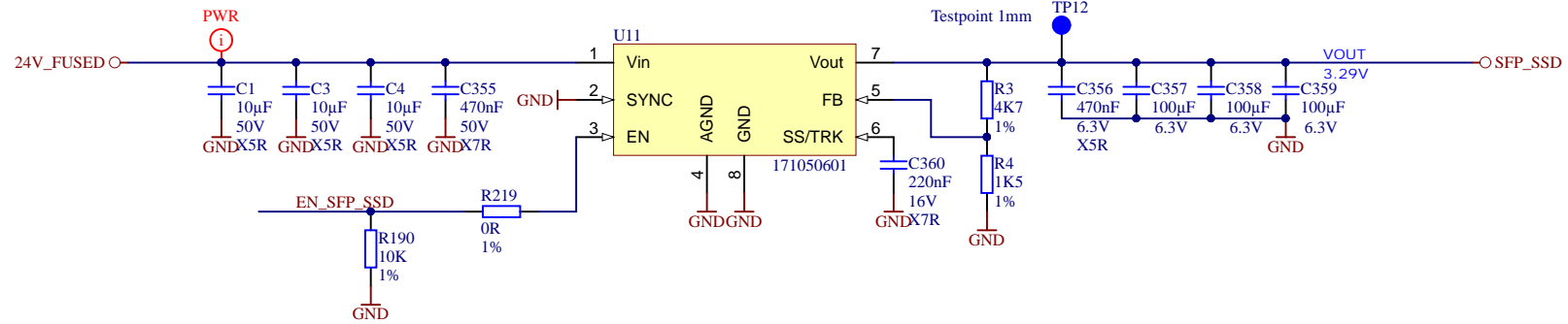
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3

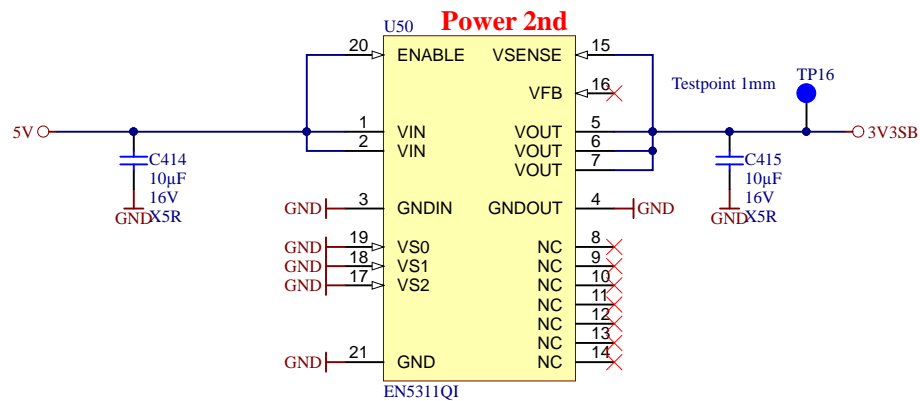
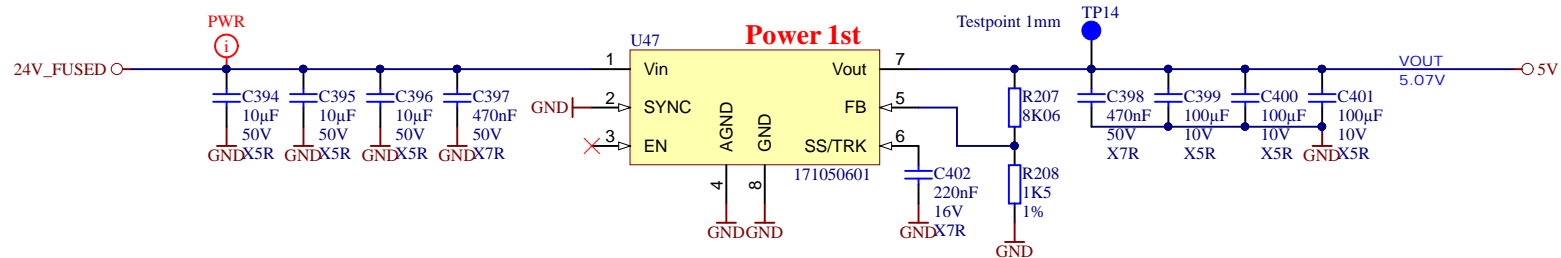
4




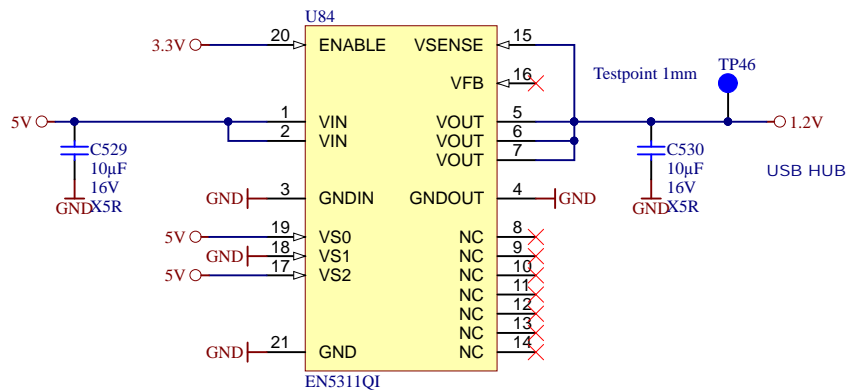
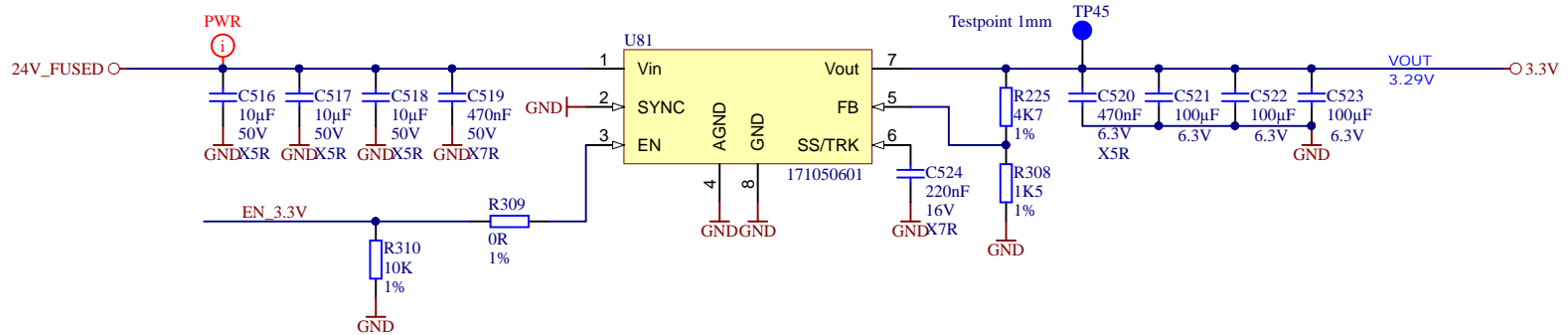
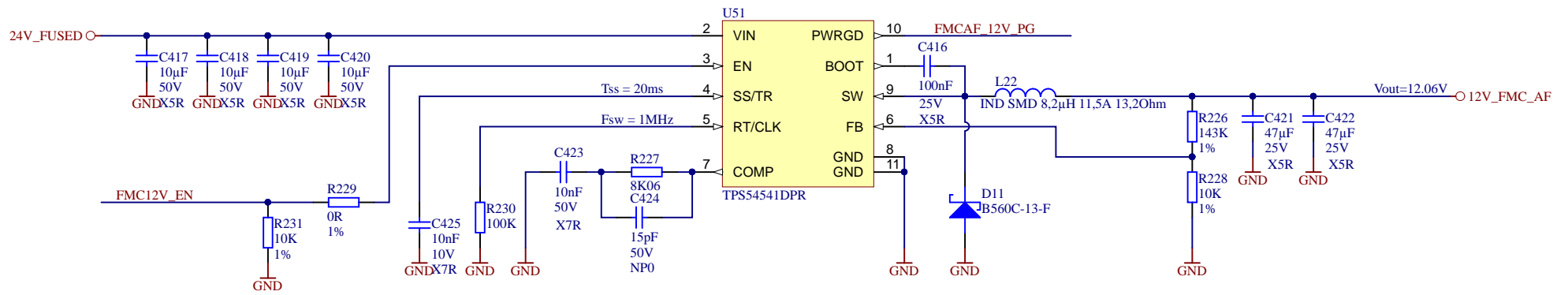
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			A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>
Date: <b>2017-10-16</b>		Copyright: <b>Trenz Electronic GmbH</b>		Page <b>43</b> of <b>58</b>
Filename: <b>POWER_3.schdoc</b>				



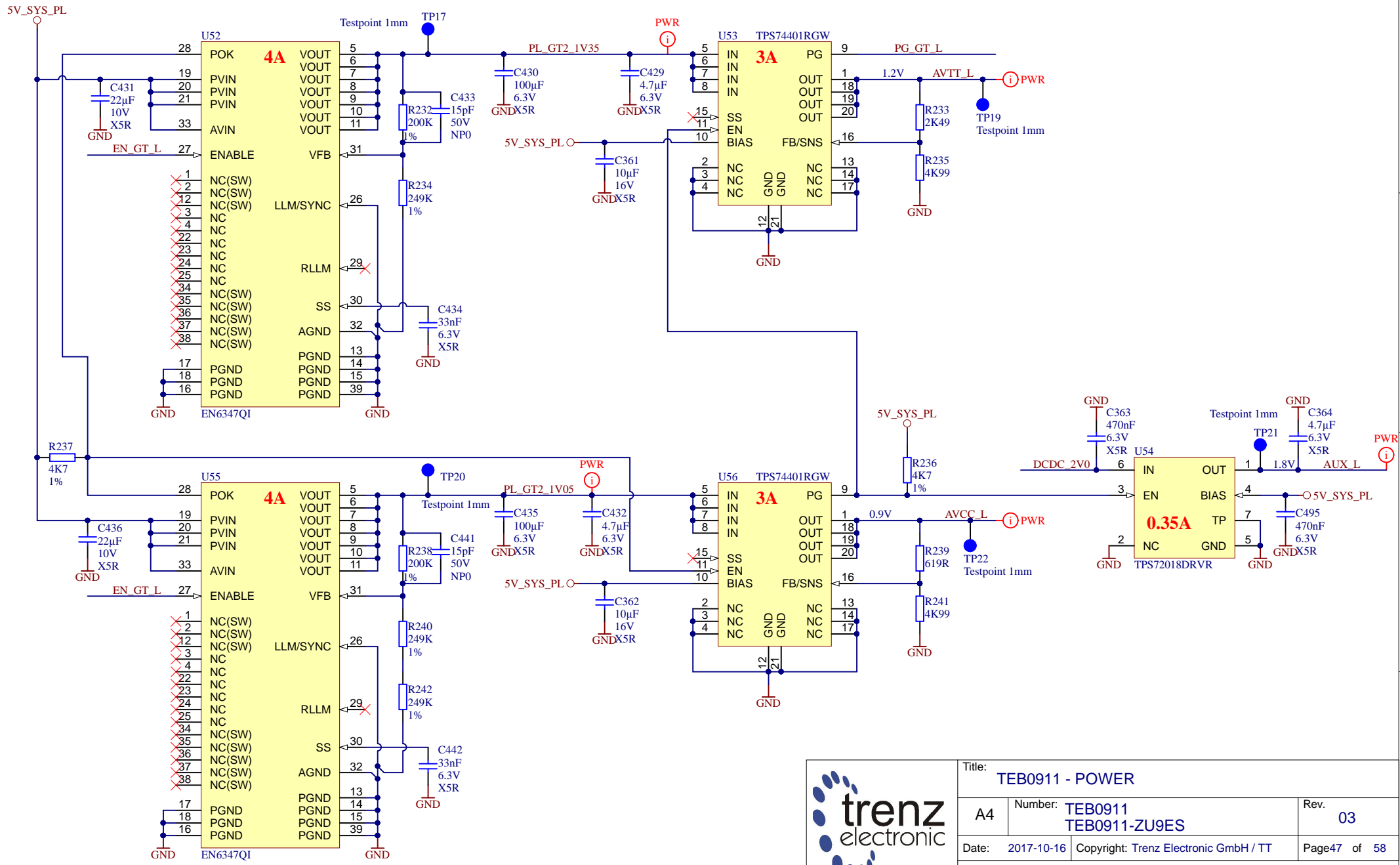
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			A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>
Date: 2017-10-16		Copyright: Trenz Electronic GmbH		Page 44 of 58
Filename: <b>POWER_4.schdoc</b>				



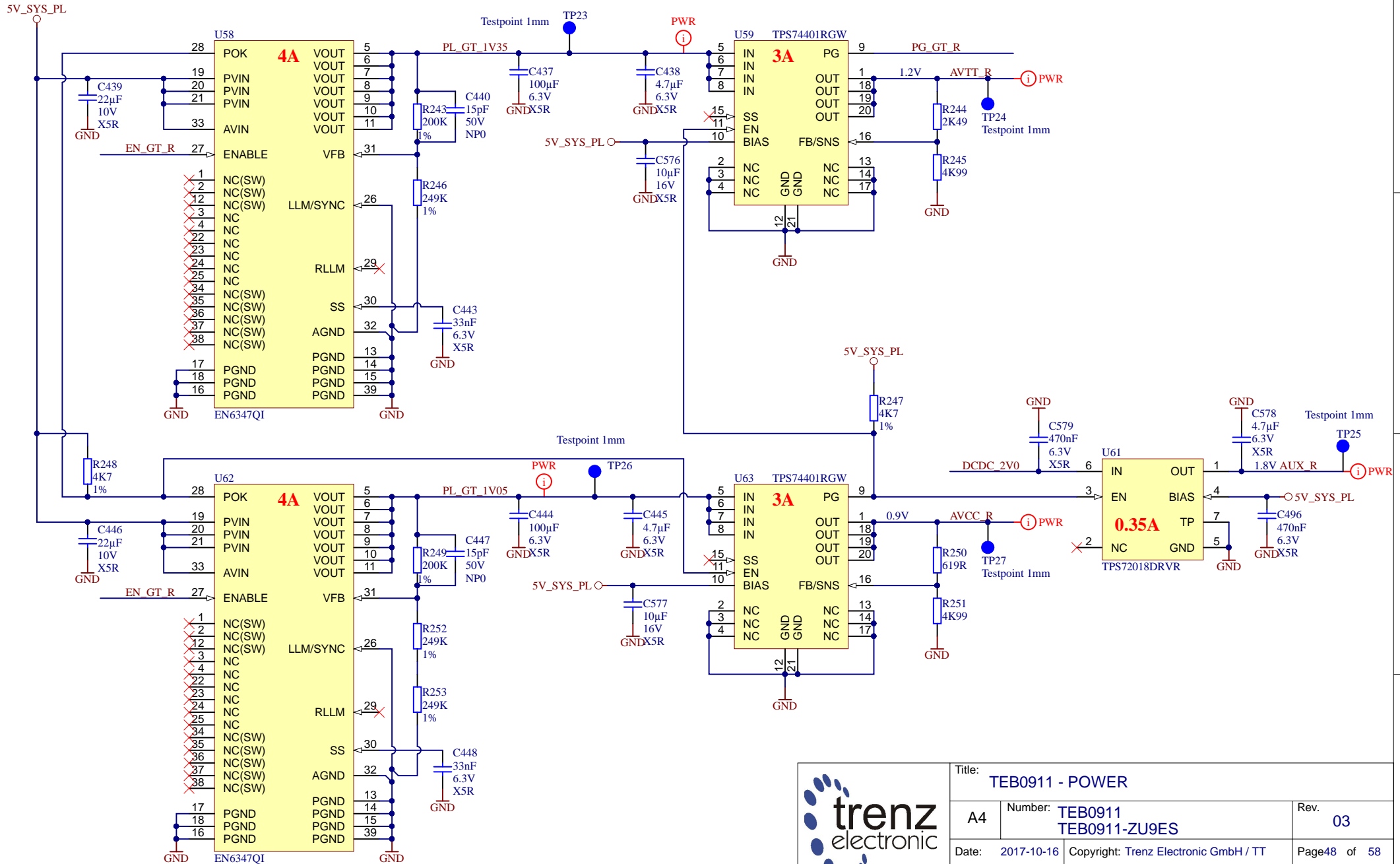
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		A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>
Date: <b>2017-10-16</b>		Copyright: <b>Trenz Electronic GmbH</b>	
Filename: <b>POWER_5.schdoc</b>		Page <b>45</b> of <b>58</b>	



Title: TEB0911 - POWER		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 46 of 58
Filename: POWER_6.SchDoc		

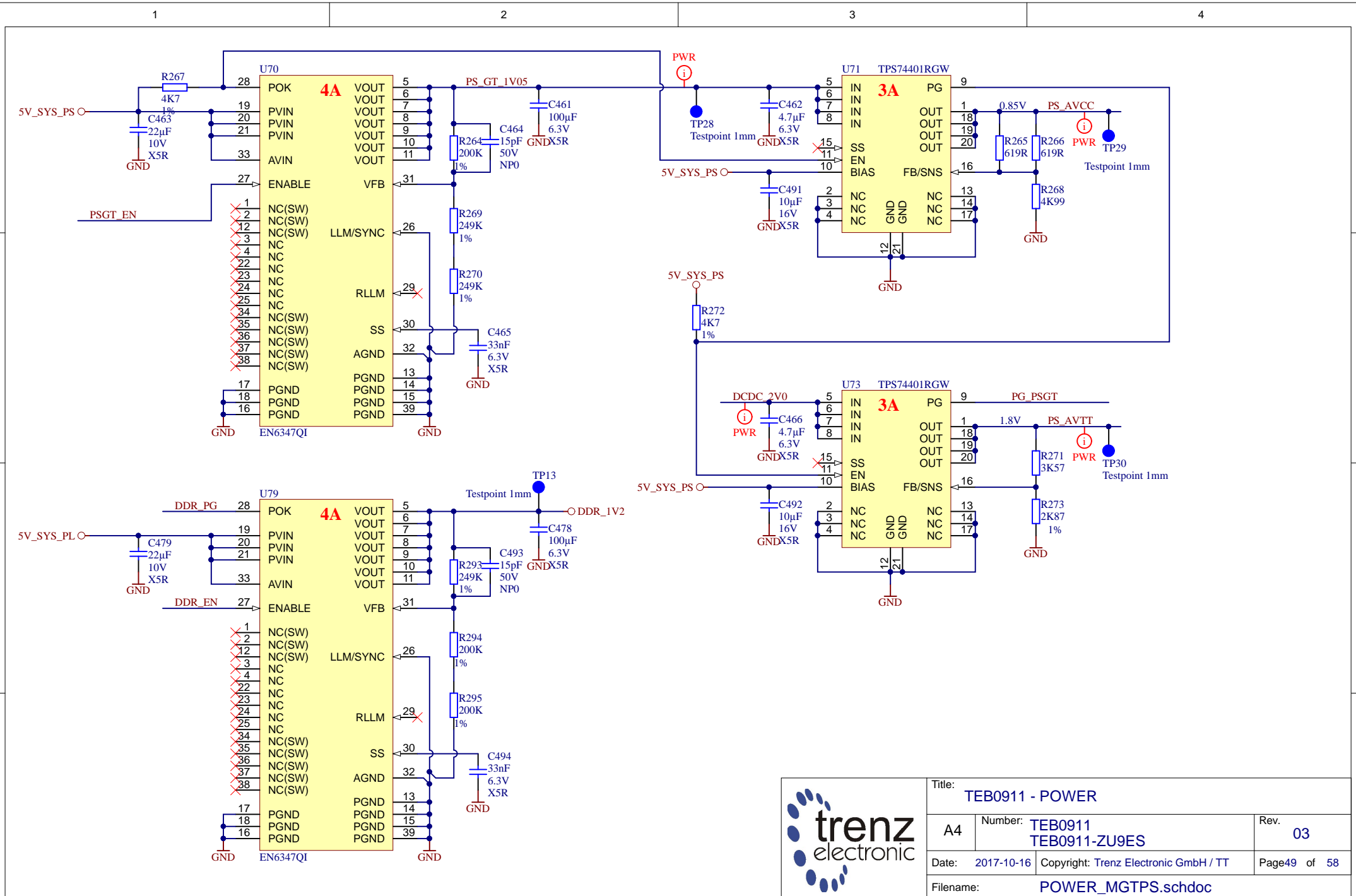


Title: TEB0911 - POWER		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH / TT	Page 47 of 58
Filename: POWER_MGTPLL.schdoc		

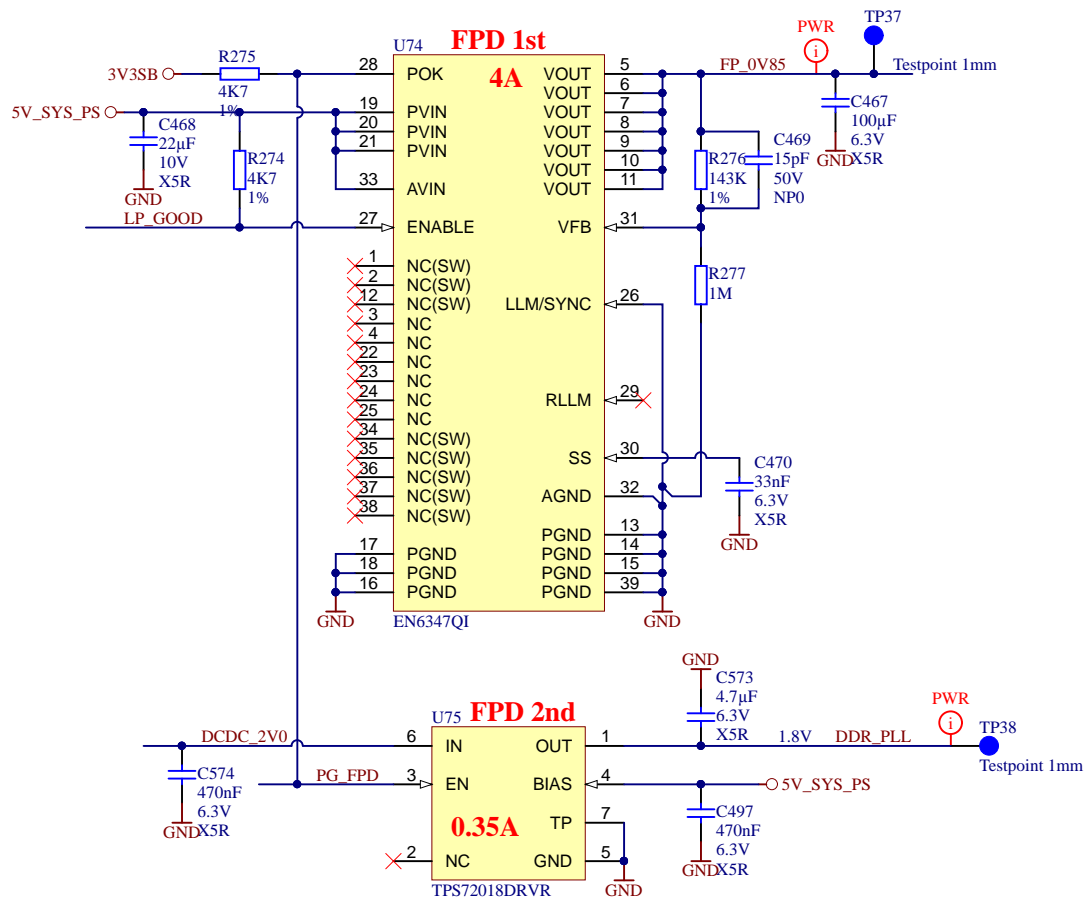



Title: TEB0911 - POWER		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH / TT	Page 48 of 58
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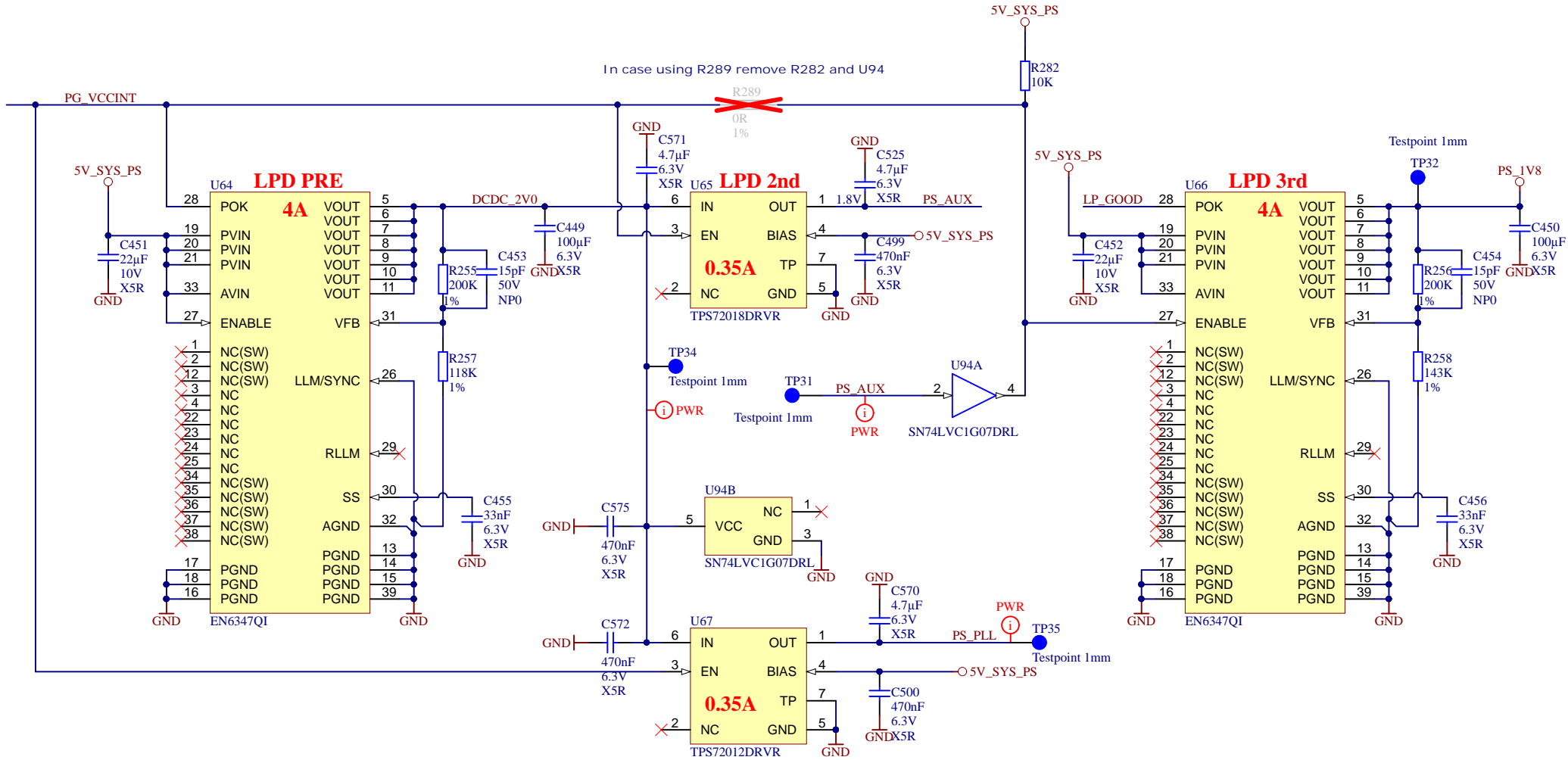




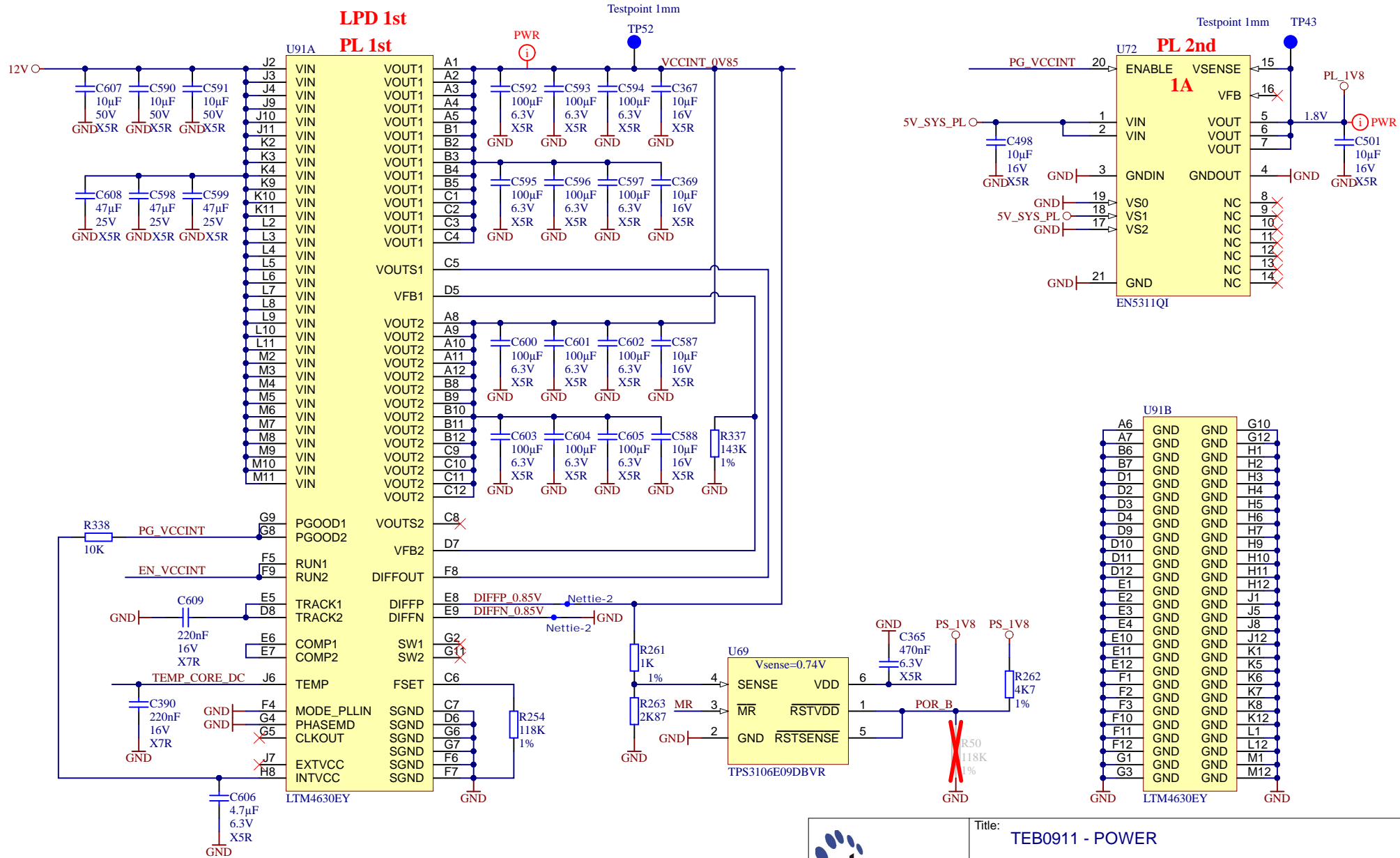

Title: TEB0911 - POWER		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH / TT	Page 49 of 58
Filename: POWER_MGTPS.schdoc		



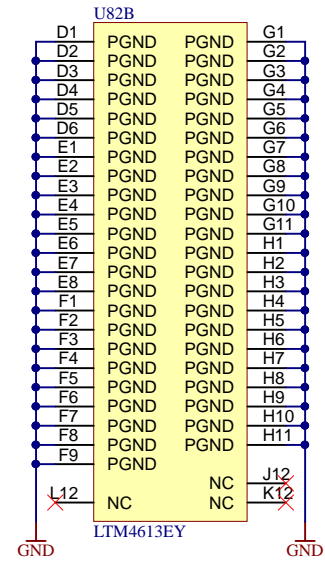
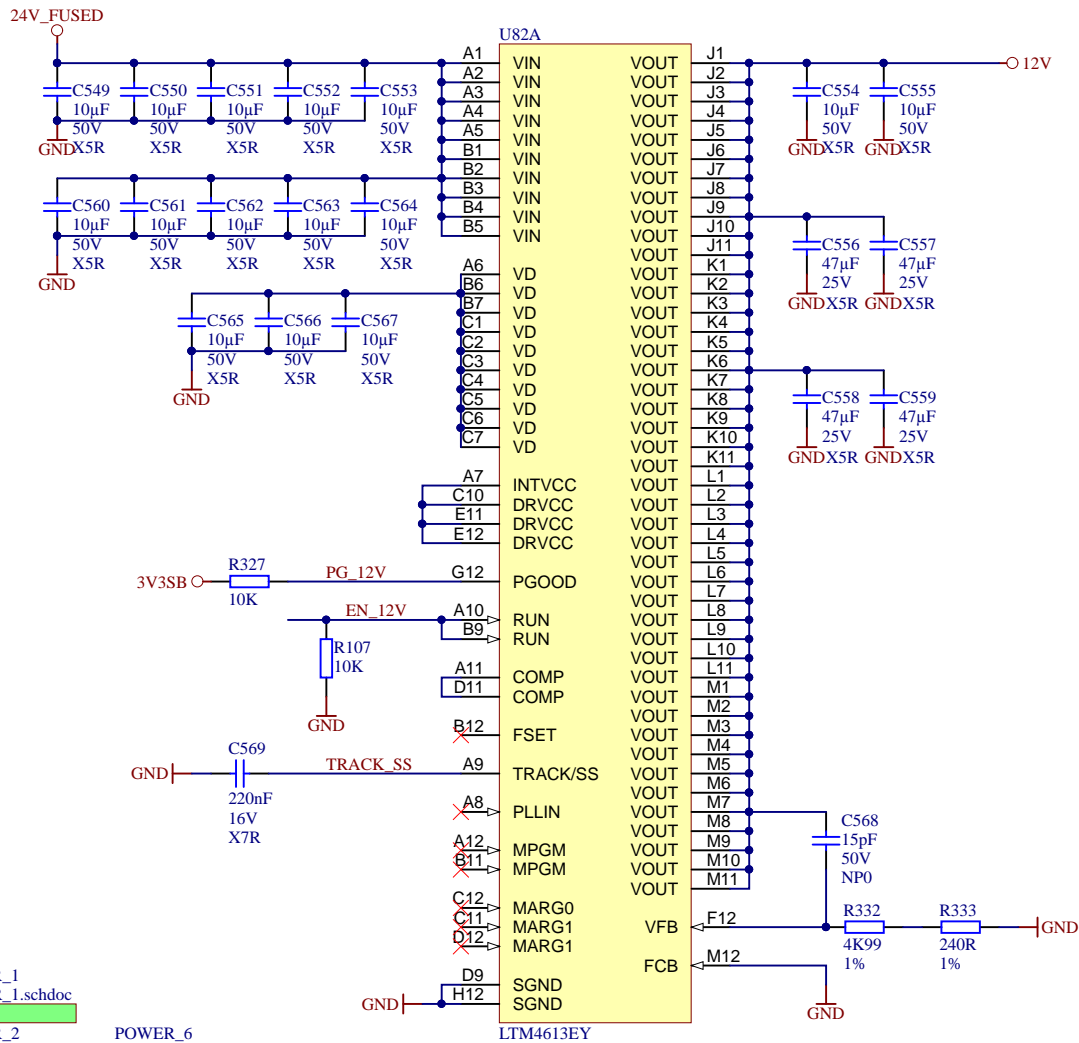
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Date: <b>2017-10-16</b>		Copyright: <b>Trenz Electronic GmbH / TT</b>		Page <b>50</b> of <b>58</b>
Filename: <b>POWER_PSFP.schdoc</b>				



Title: <b>TEB0911 - POWER</b>		
A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>	Rev. <b>03</b>
Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH / TT</b>	Page <b>51</b> of <b>58</b>
Filename: <b>POWER_PSLP.schdoc</b>		

Title: TEB0911 - POWER		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 52 of 58
Filename: PWR_CORE.SchDoc		



- POWER\_1  
POWER\_1.schdoc
- POWER\_2  
POWER\_2.schdoc
- POWER\_3  
POWER\_3.schdoc
- POWER\_4  
POWER\_4.schdoc
- POWER\_5  
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- PWR\_CORE  
PWR\_CORE.SchDoc



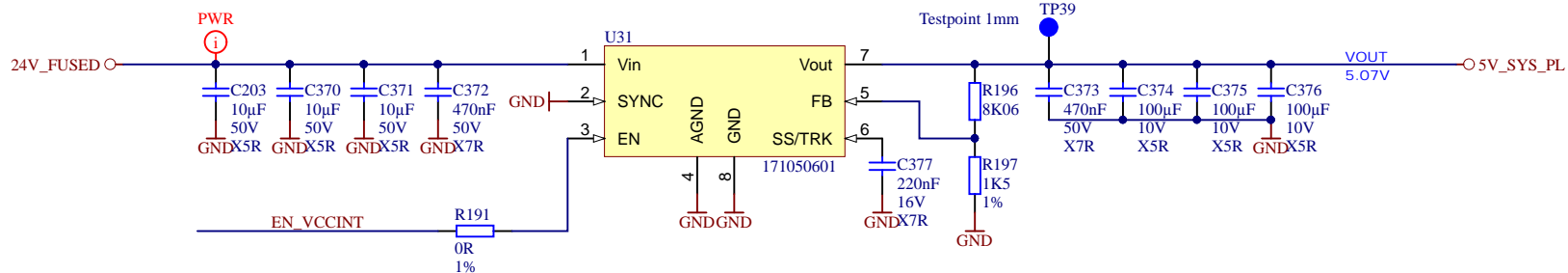
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Date: <b>2017-10-16</b>	Copyright: <b>Trenz Electronic GmbH</b>	Page <b>53</b> of <b>58</b>
Filename: <b>PWR_IN.SchDoc</b>		

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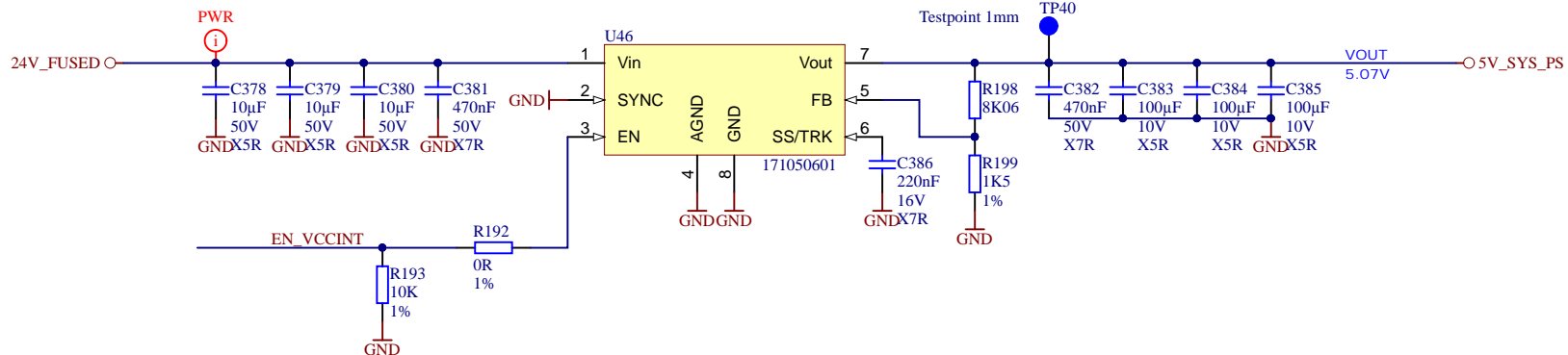
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- POWER\_MGTPS  
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- POWER\_MGTPLR  
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- POWER\_MGTPLL  
POWER\_MGTPLL.schdoc
- POWER\_PSF  
POWER\_PSF.schdoc
- POWER\_PSLP  
POWER\_PSLP.schdoc



Title: TEB0911 - POWER		
A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 54 of 58
Filename: PWR_SYS.SchDoc		

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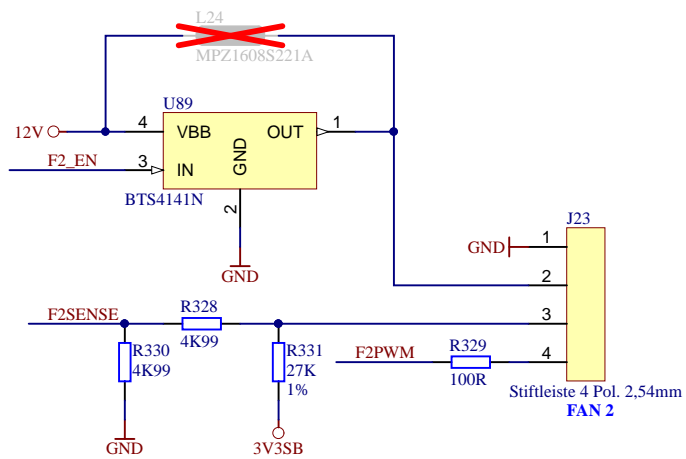
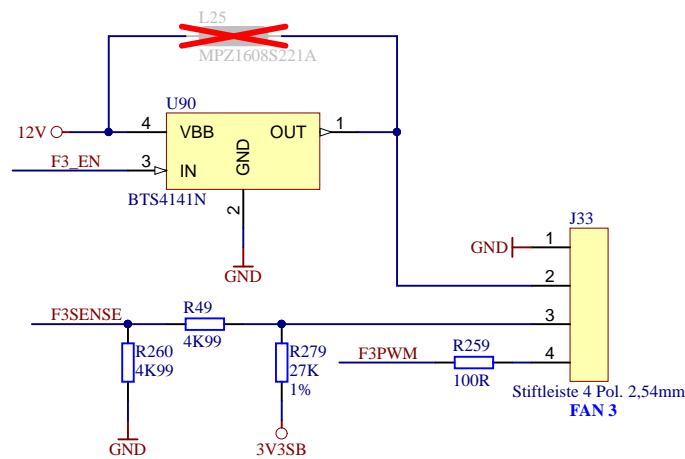
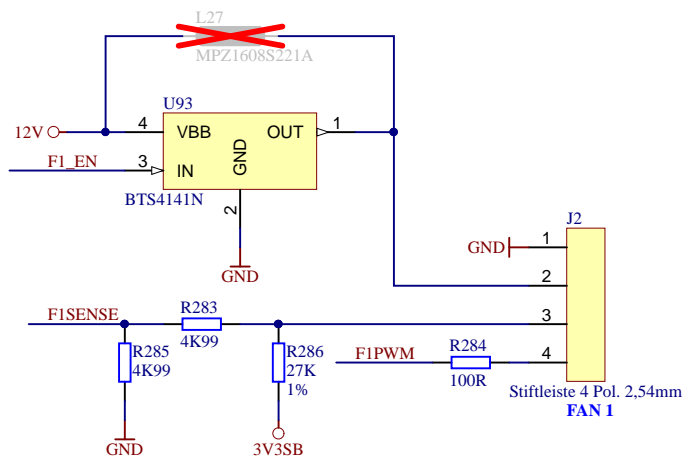
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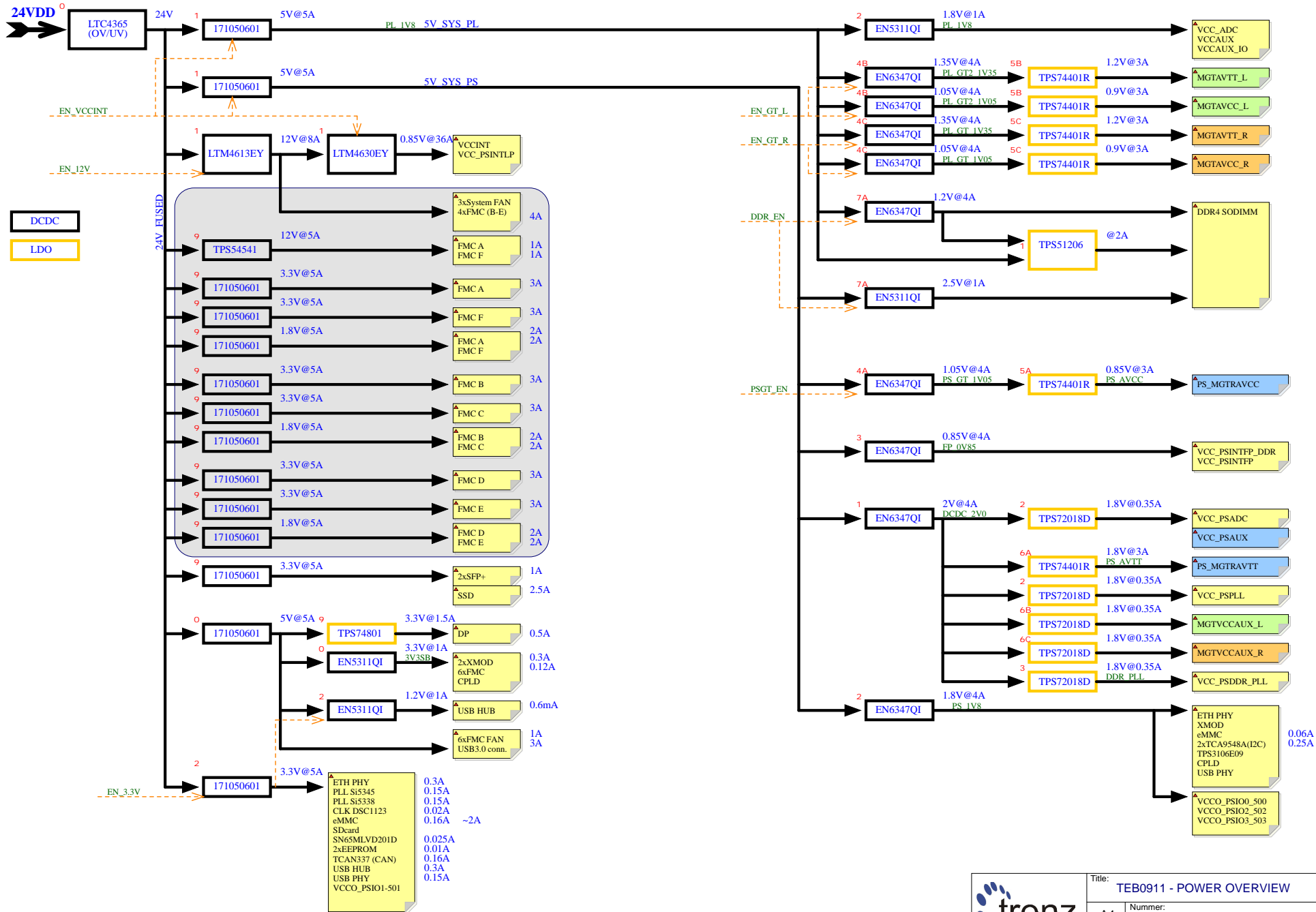
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	A4	Number: TEB0911 TEB0911-ZU9ES	Rev. 03
	Date: 2017-10-16	Copyright: Trenz Electronic GmbH	Page 55 of 58
	Filename: FAN_CON.schdoc		

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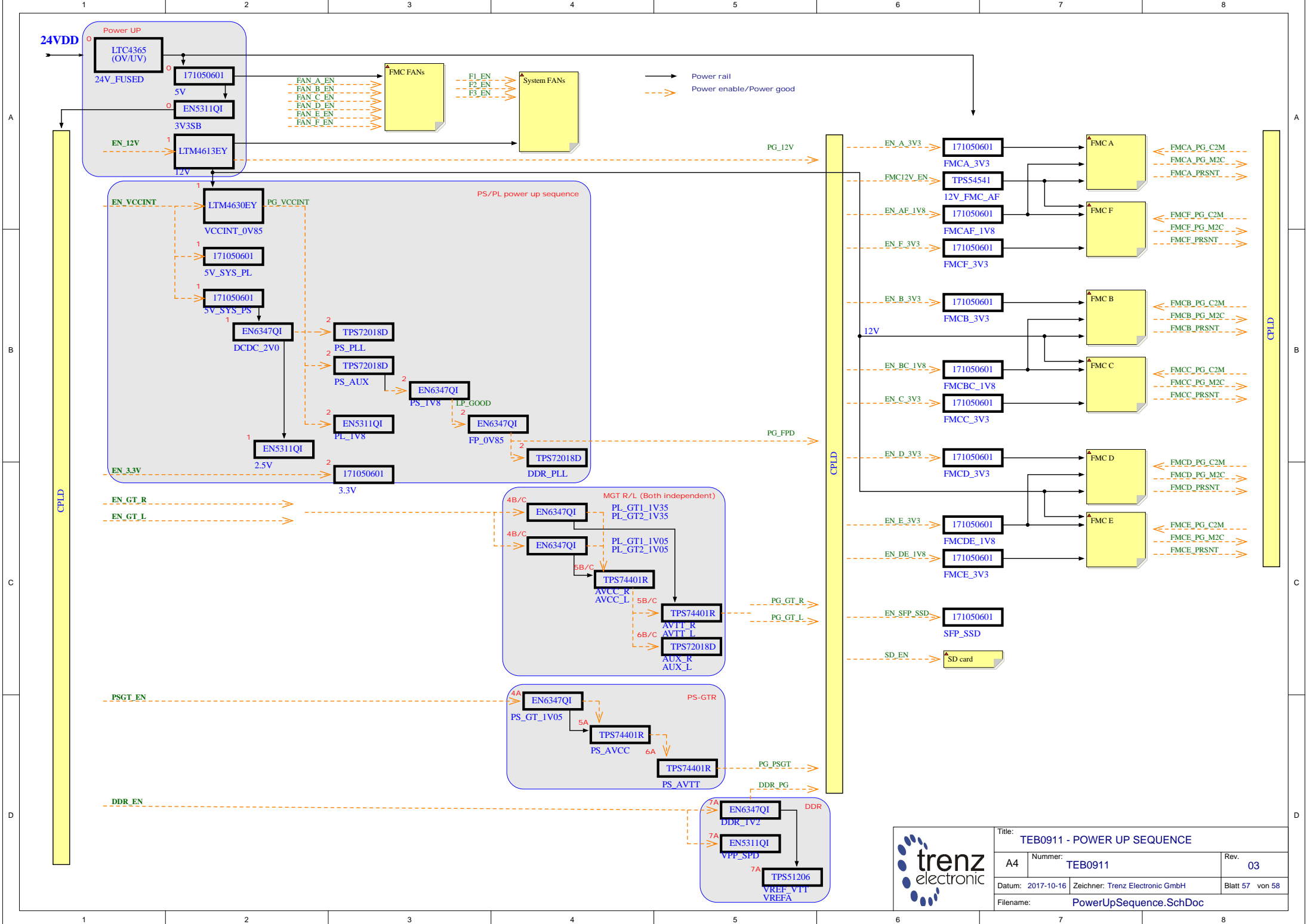
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Title: TEB0911 - POWER UP SEQUENCE		
A4	Number: TEB0911	Rev. 03
Datum: 2017-10-16	Zeichner: Trenz Electronic GmbH	Blatt 57 von 58
Filename: PowerUpSequence.SchDoc		

REV02:


- 1. 2 CPLDs replaced with LCMXO2-7000HC-4FG484C (U27)
- 2. Single SFP connector removed. MGT lanes B129\_TX/RX\_1 connected to FMC F
- 3. DCDC U45 (power supply of 2xSFP and 1xSFP connectors) removed. 2xSFP powered by U11.
- 4. HDMI: lane B505\_TX2 connected to DP1\_TX and lane B505\_TX3 to DP0\_TX.
- 5. Supervisor U69 TPS3106E33 replaced with TPS3106E09
- 6. U17 (SI5345): IN\_SELO/1 disconnected from CPLD and connected to GND
- 7. Added new clock source U87 (SiT8008AI-73-XXS-25.000000E). Connected to CPLD. Not fitted
- 8. I2C pull-ups R154/R155: changed from 4.7k to 1.5kOhm
- 9. FAN: R285, R330, R260 changed to 27K (F\*SENSE)
- 10. Added fuse F2 (4A). Fuse F1 (1.85A) "not fitted"
- 11. C354 (PWR\_IN\_24V/GND) deleted
- 12. Removed clock loop-back OUT9P/N - IN2P/N (U17, SI5345)
- 13. OUT7 (P) of U17 (clock source SI5345) connected to CPLD U27 Bank 5.
- 14. Signal SD Card detect SD\_CD connected to CPLD, MIO45 connected to CPLD
- 15. Signals FMC\*\_PG\_C2M(M2C) pulled-up to 3V3SB (was FMC\*\_3V3)
- 16. CLK\_OUT U15 (USB PHY), serial resistor value R13 changed from 33 to 0 Ohm
- 17. EN5311QI: Cout value changed from 22uF to 10uF
- 18. BOM optimization
- 19. Added connections from CPLD to FMC A and F (x\_LA06\_SC - x\_LA33\_SC)
- 20. Net EN\_VCCINT connected also to DCDC U31 (5V\_SYS\_PL) and U46 (5V\_SYS\_PS)
- 21. Added 2 2kb EEPROM (U45/U43)
- 22. Added power-up sequencing
- 23. MIO6 connected to CPLD
- 24. Signals EN\_SFP was renamed to EN\_SFP\_SSD, 12V\_FMC was renamed to 12V\_FMC\_AF, FMC12V\_PG to FMCAF\_12V\_PG
- 25. Nets names F\_LA02/03/04 was swapped.

REV03:

- 1. Signals C\_LA27\_P/N swapped: C\_LA27\_P connected to pin R10 (IO\_L11P\_TIU\_N8\_GC\_67), C\_LA27\_N connected to R9 (IO\_L11N\_TIU\_N9\_GC\_67) of U1 (XCZU9EG-1FFVB1156)

REV03a (17.11.2017):

- 1) Flash N25Q256A11E1240E changed to N25Q512A11G1240E.

		Title: <b>TEB0911 - REVISION CHANGES</b>	
		A4	Number: <b>TEB0911 TEB0911-ZU9ES</b>
Date:	2017-10-16	Copyright: Trenz Electronic GmbH	Page 58 of 58
Filename:		<b>Revision_changes.SchDoc</b>	