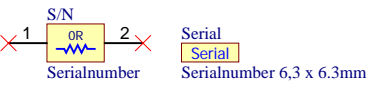
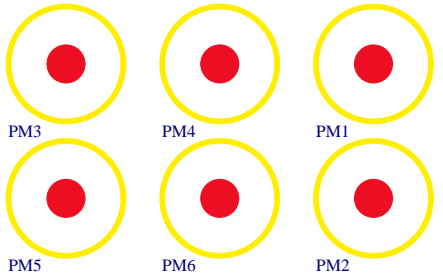
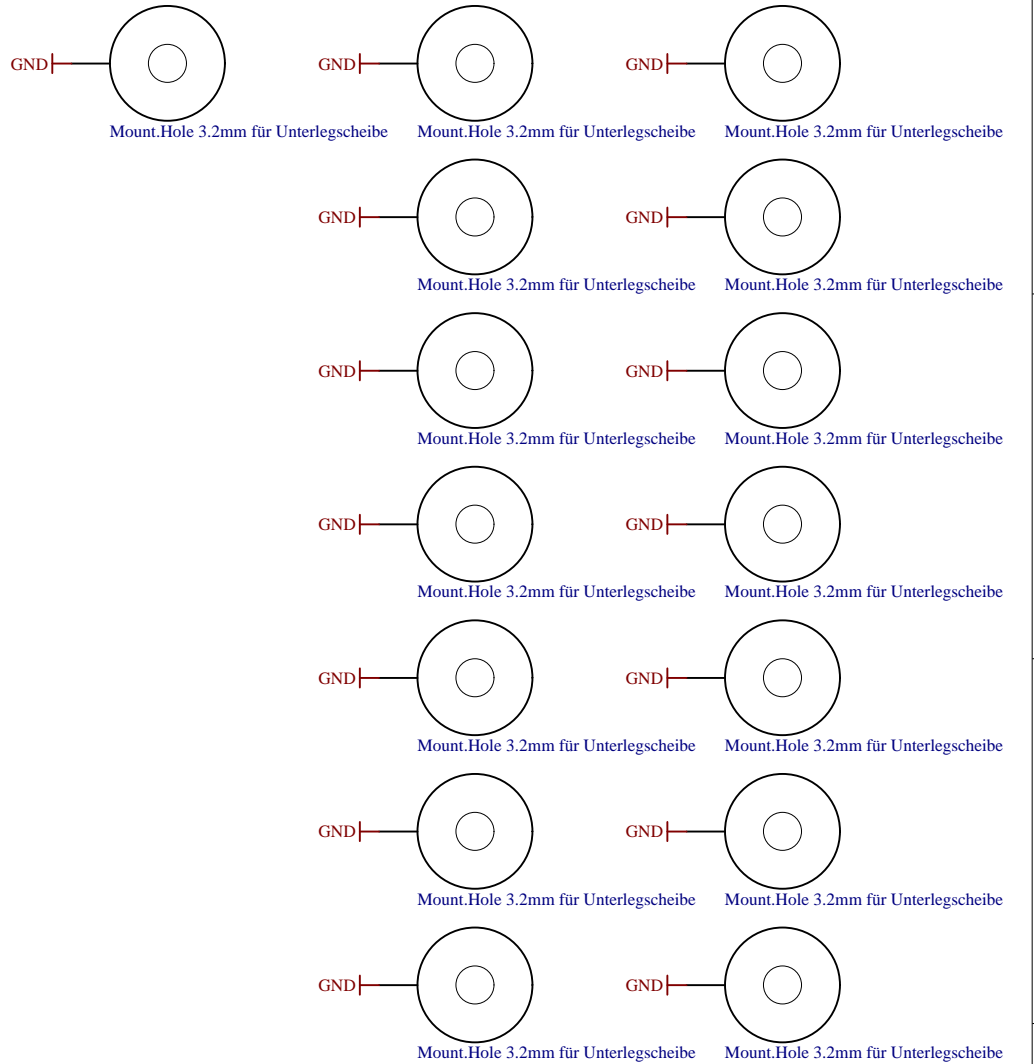


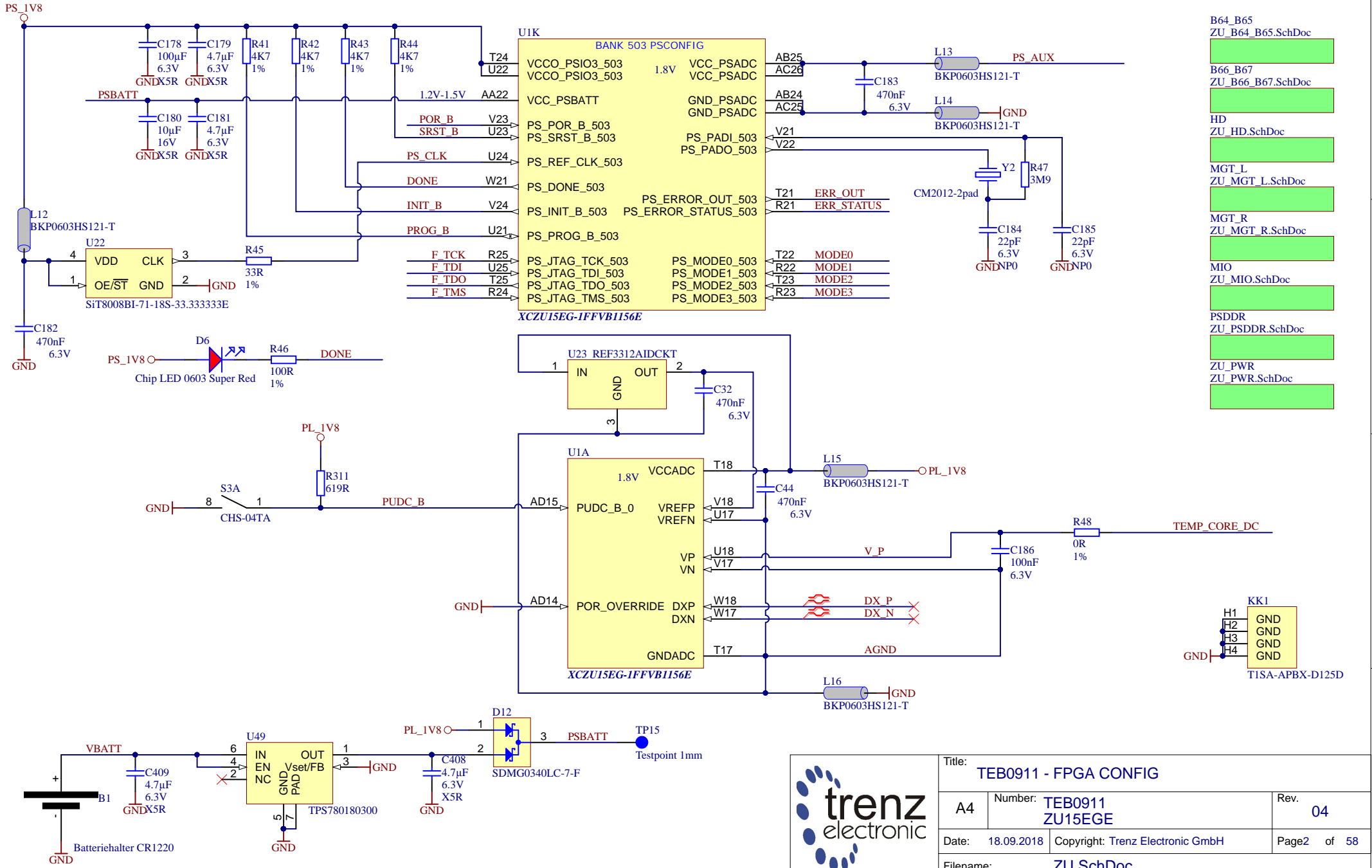
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| Ethernet Ethernet.SchDoc | U_USBP USB-PHY_SchDoc | U_SC_P SC_POWER.schdoc |
| U_SFP SFP.SchDoc | U_USBH USB3-HUB.SchDoc | U_POWER_OVERVIEW Power_overview.SchDoc |
| U_SSD SSD.SchDoc | U_CLK Clock.SchDoc | U_POWER_SEQ PowerUpSequence.SchDoc |
| U_FrontPanel 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



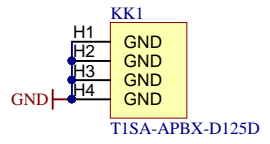
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| Title: TEB0911 | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page1 of 58 |
| Filename: TEB0911.SchDoc | | |



- 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 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page2 of 58 |
| Filename: ZU.SchDoc | | |



A

B

C

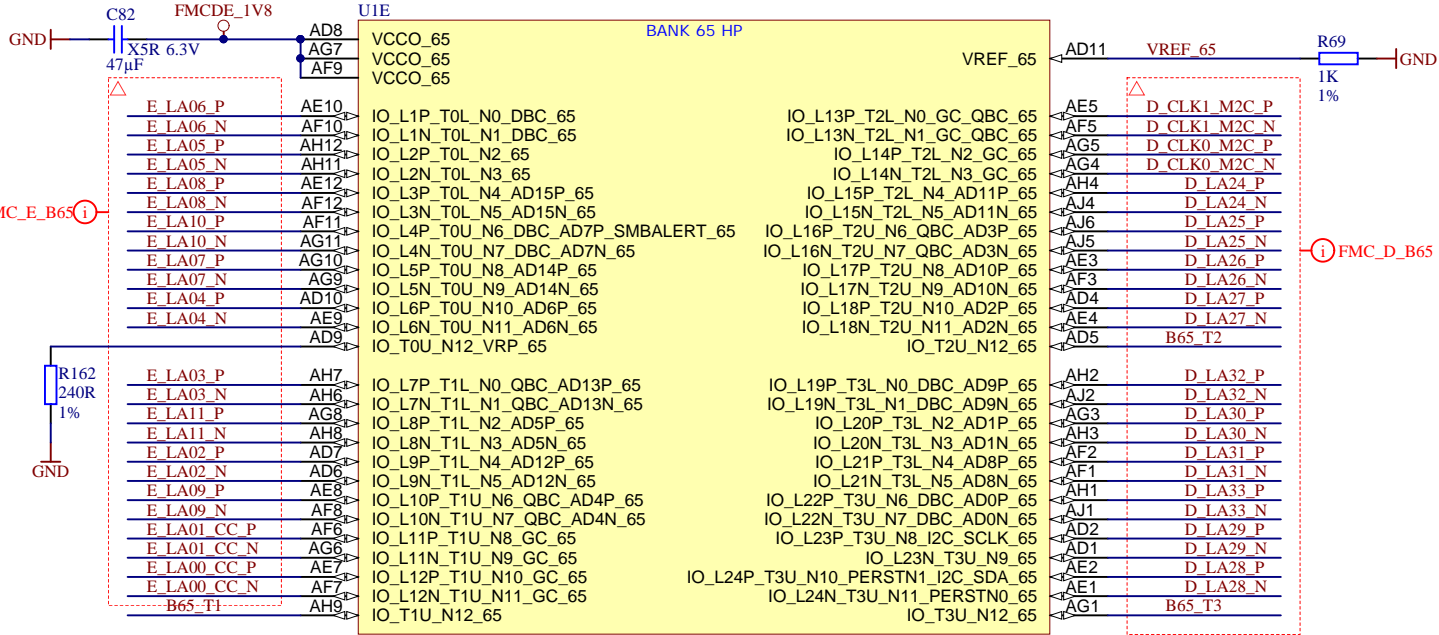
D

A

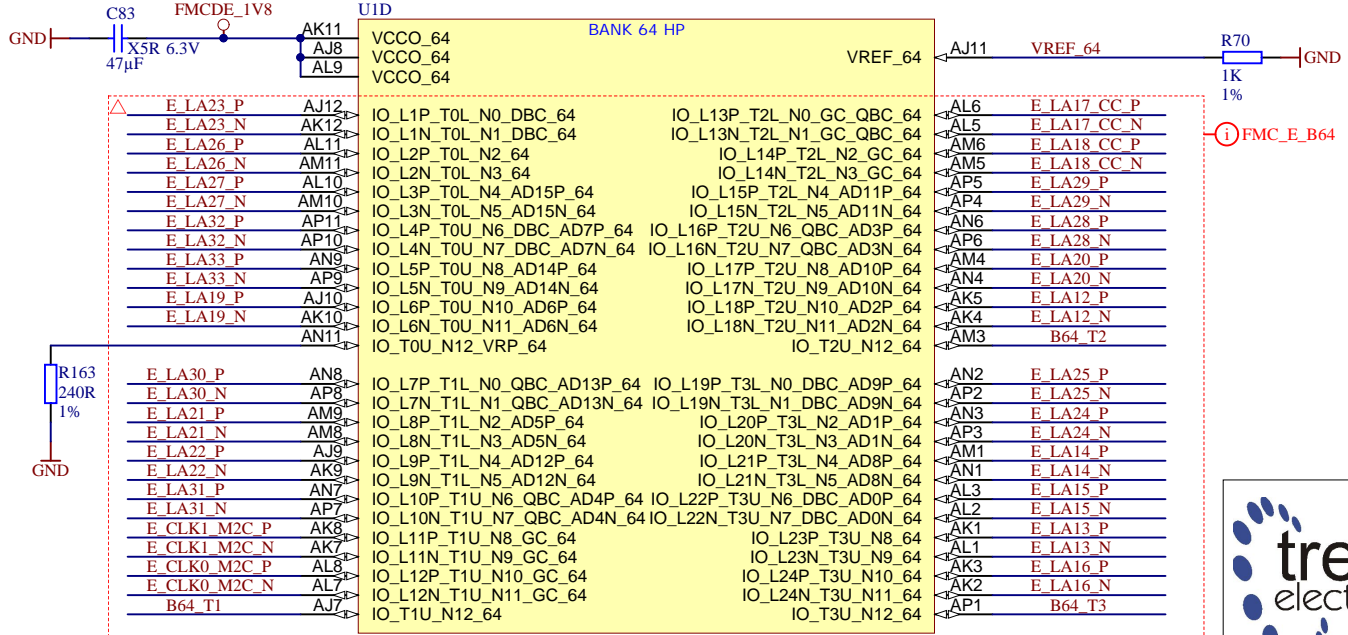
B

C

D



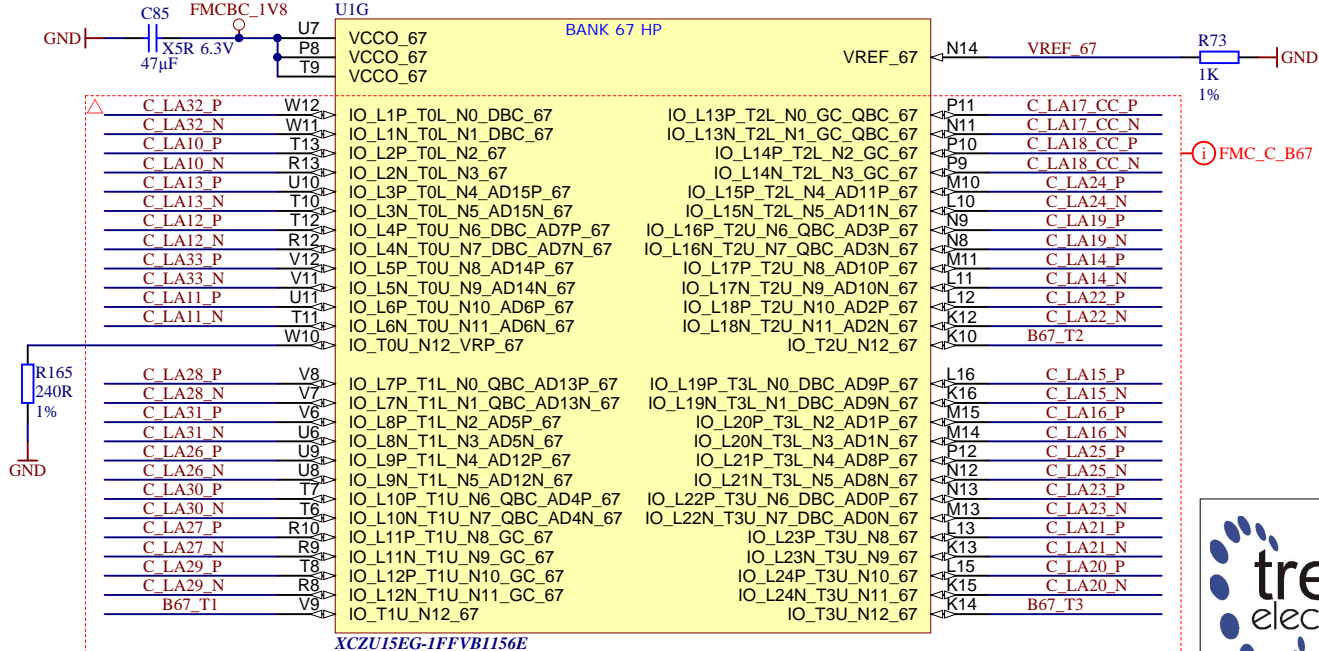
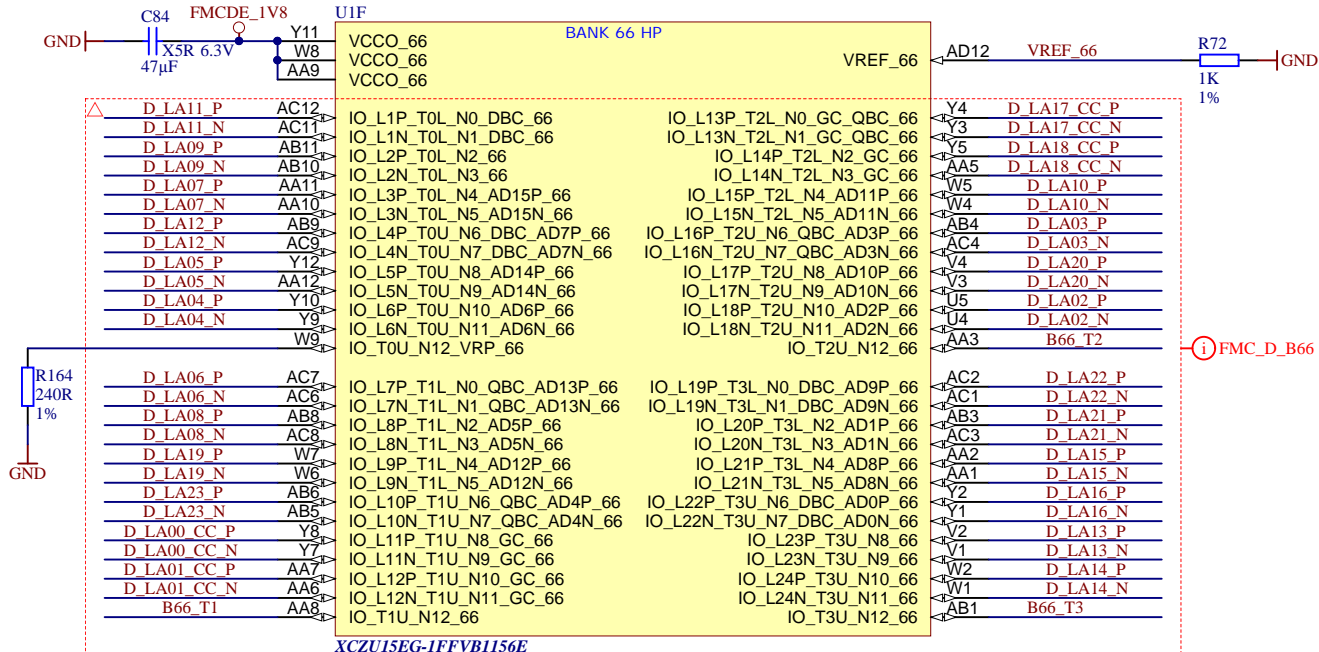
XCZU15EG-1FFVB1156E



XCZU15EG-1FFVB1156E



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| Title: TEB0911 - FPGA B64 B65 | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page3 of 58 |
| Filename: ZU_B64_B65.SchDoc | | |



| | | |
|--------------------------------------|---|----------------------------|
| Title: TEB0911 - FPGA B66 B67 | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 4 of 58 |
| Filename: ZU_B66_B67.SchDoc | | |

1

2

3

4

A

A

B

B

C

C

D

D



XCZU15EG-1FFVB1156E

XCZU15EG-1FFVB1156E



| | | |
|----------------------------------|----------------------------------|-------------|
| Title: TEB0911 - FPGA B44 B47-50 | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page5 of 58 |
| Filename: ZU_HD.SchDoc | | |

1

2

3

4

A

B

C

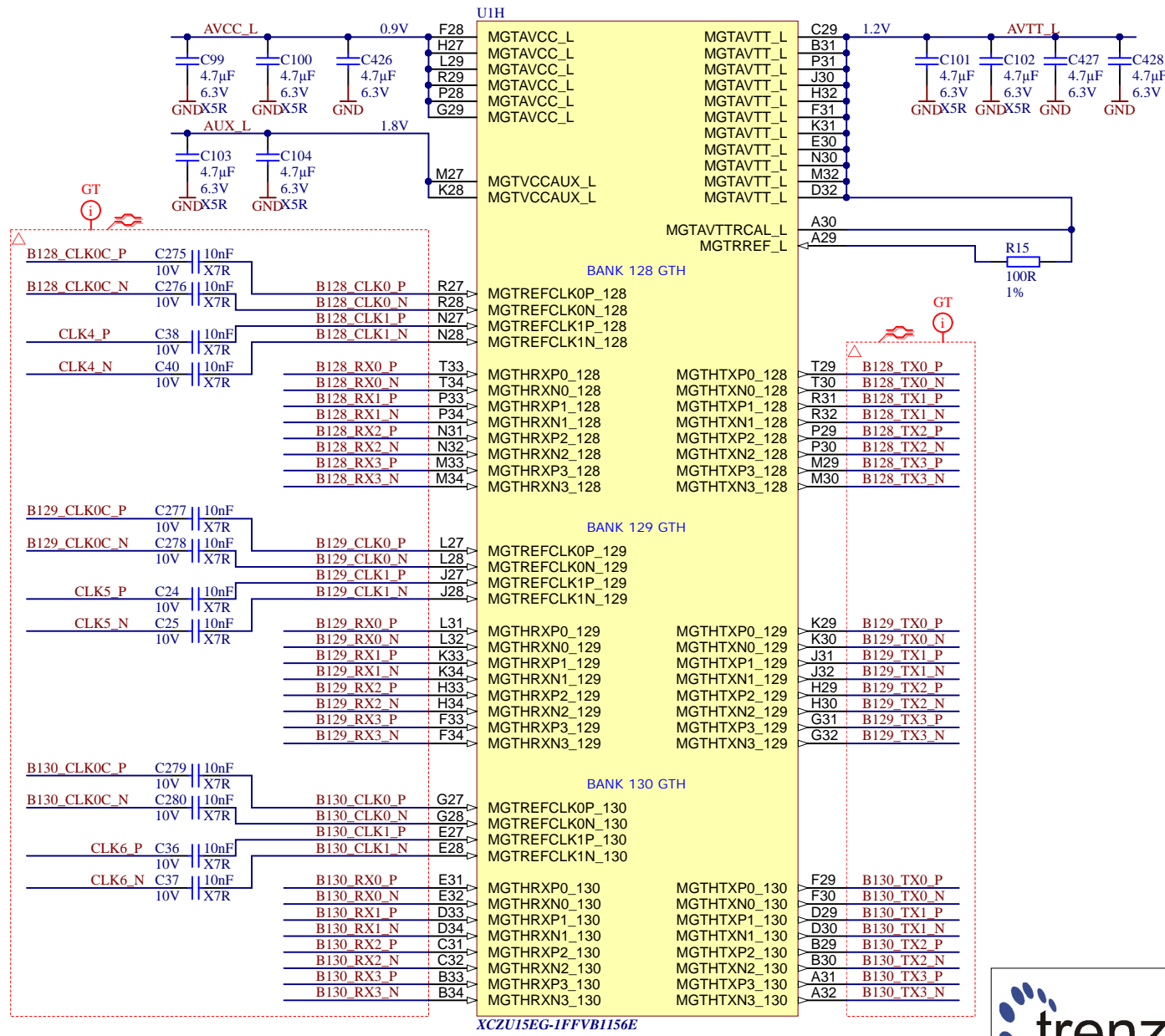
D

A

B

C

D



| | | |
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| Title: TEB0911 - FPGA B128-130 | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 6 of 58 |
| Filename: ZU_MGT_L.SchDoc | | |

A

B

C

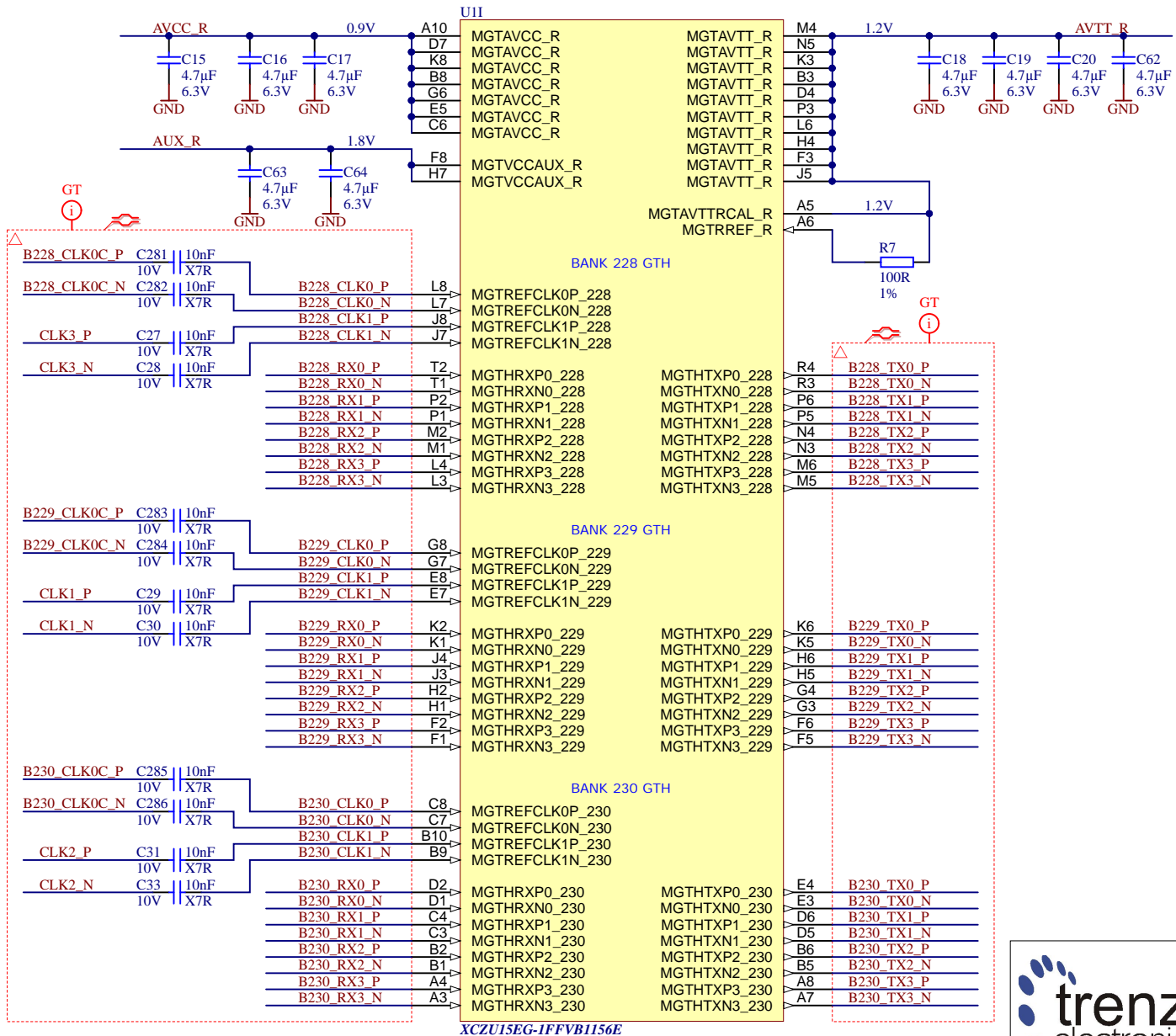
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A

B

C

D



UI1

BANK 228 GTH

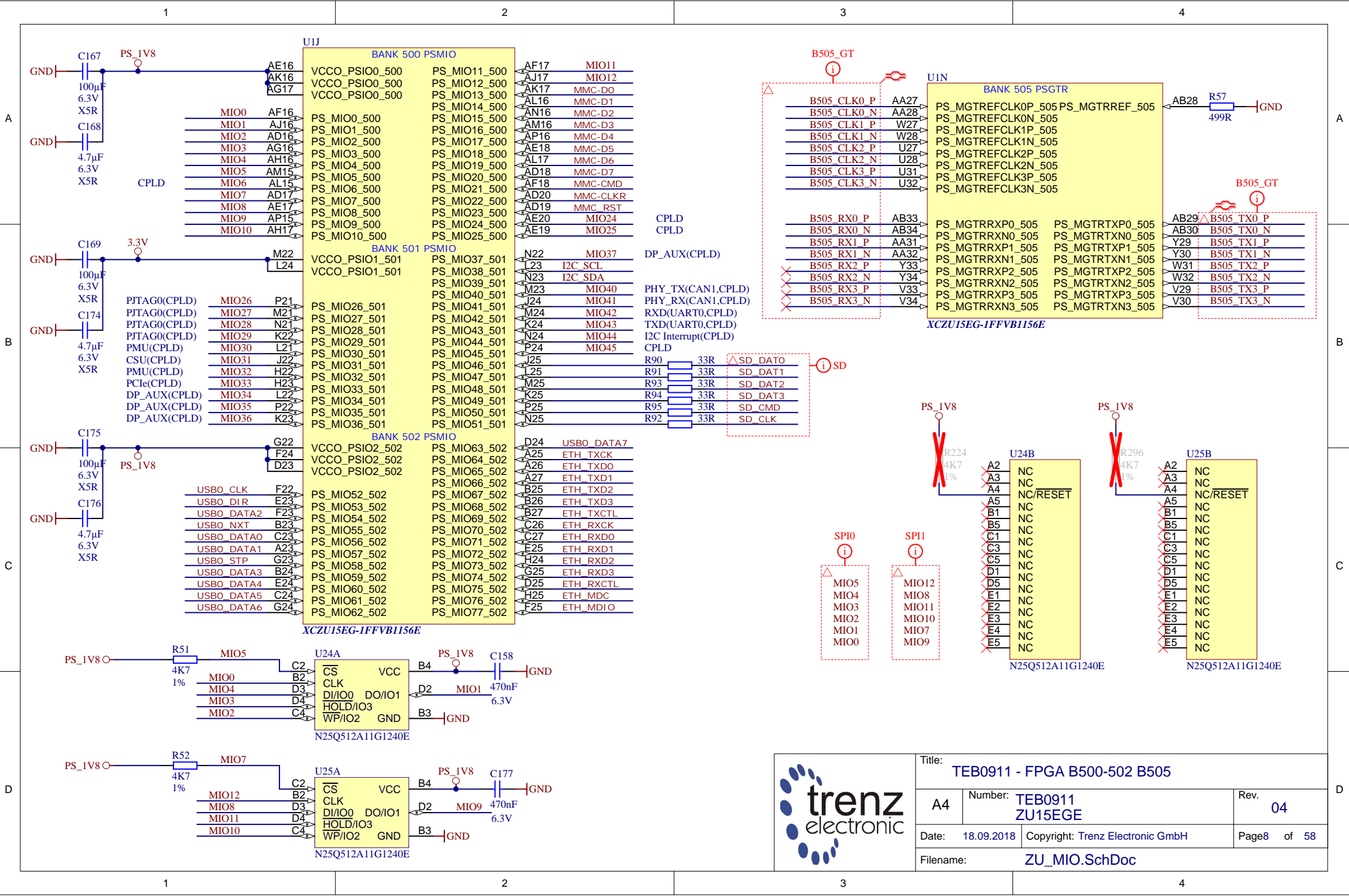
BANK 229 GTH

BANK 230 GTH

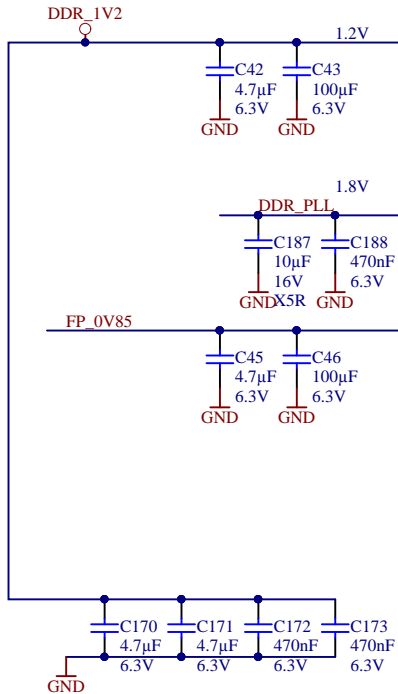
XCZU15EG-1FFVB1156E



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| Title: TEB0911 - FPGA B228-230 | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 7 of 58 |
| Filename: ZU_MGT_R.SchDoc | | |



| | | |
|--|---|----------------------------|
| Title: TEB0911 - FPGA B500-502 B505 | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 8 of 58 |
| Filename: ZU_MIO.SchDoc | | |



U1L

| BANK 504 PSDDR | |
|----------------------|------------------|
| VCCO_PSDDR_504 | PS_DDR_CK0_504 |
| VCCO_PSDDR_504 | PS_DDR_CK_NO_504 |
| VCCO_PSDDR_504 | PS_DDR_CKE0_504 |
| VCCO_PSDDR_504 | PS_DDR_CK1_504 |
| VCCO_PSDDR_504 | PS_DDR_CK_N1_504 |
| VCCO_PSDDR_504 | PS_DDR_CKE1_504 |
| VCC_PSDDR_PLL | PS_DDR_A0_504 |
| VCC_PSDDR_PLL | PS_DDR_A1_504 |
| VCC_PSDDR_PLL | PS_DDR_A2_504 |
| VCC_PSDDR_PLL | PS_DDR_A3_504 |
| VCC_PSDDR_PLL | PS_DDR_A4_504 |
| VCC_PSDDR_PLL | PS_DDR_A5_504 |
| VCC_PSDDR_PLL | PS_DDR_A6_504 |
| VCC_PSDDR_PLL | PS_DDR_A7_504 |
| VCC_PSDDR_PLL | PS_DDR_A8_504 |
| VCC_PSDDR_PLL | PS_DDR_A9_504 |
| VCC_PSDDR_PLL | PS_DDR_A10_504 |
| VCC_PSDDR_PLL | PS_DDR_A11_504 |
| VCC_PSDDR_PLL | PS_DDR_A12_504 |
| VCC_PSDDR_PLL | PS_DDR_A13_504 |
| VCC_PSDDR_PLL | PS_DDR_A14_504 |
| VCC_PSDDR_PLL | PS_DDR_A15_504 |
| VCC_PSDDR_PLL | PS_DDR_A16_504 |
| VCC_PSDDR_PLL | PS_DDR_A17_504 |
| PS_DDR_CS_N0_504 | |
| PS_DDR_CS_N1_504 | |
| PS_DDR_BA0_504 | |
| PS_DDR_BA1_504 | |
| PS_DDR_BG0_504 | |
| PS_DDR_BG1_504 | |
| PS_DDR_PARITY_504 | |
| PS_DDR_RAM_RST_N_504 | |
| PS_DDR_ACT_N_504 | |
| PS_DDR_ALERT_N_504 | |
| PS_DDR_ZQ_504 | |
| PS_DDR_ODT0_504 | |
| PS_DDR_ODT1_504 | |

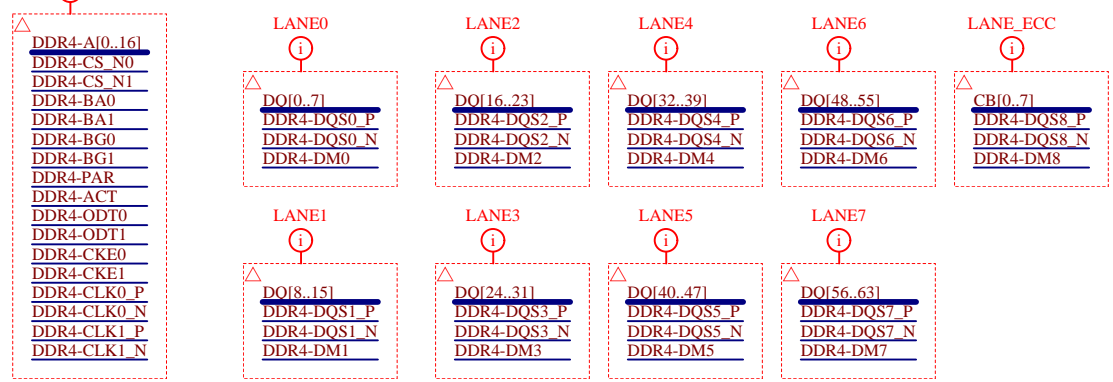
XCZU15EG-1FFVB1156E

U1M

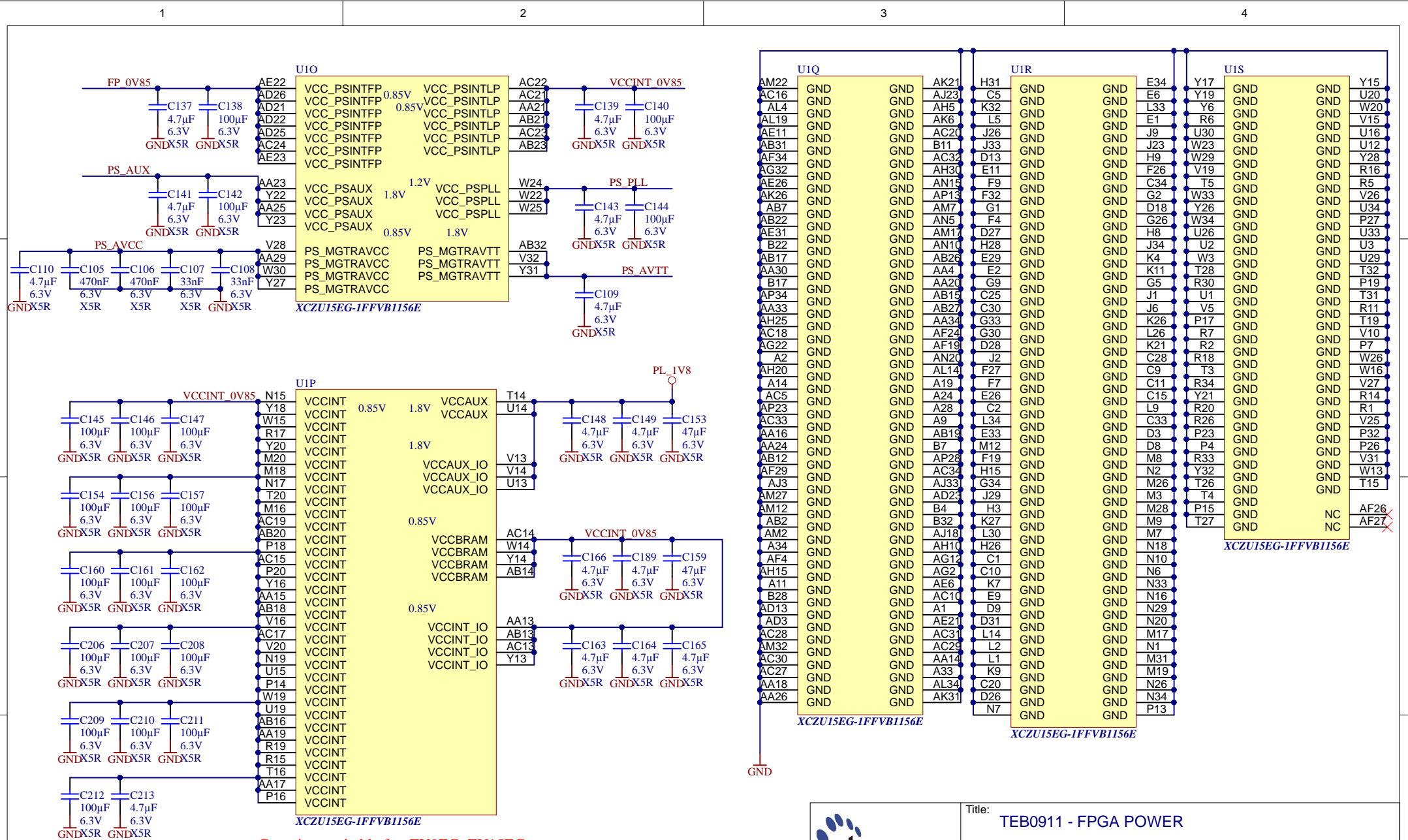
| BANK 504 PSDDR | | | | | |
|----------------|------|-----------------|-----------------|------|----------|
| DQ0 | AP20 | PS_DDR_DQ0_504 | PS_DDR_DQ32_504 | AG31 | DQ32 |
| DQ1 | AP18 | PS_DDR_DQ1_504 | PS_DDR_DQ33_504 | AG30 | DQ33 |
| DQ2 | AP19 | PS_DDR_DQ2_504 | PS_DDR_DQ34_504 | AG29 | DQ34 |
| 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 |

XCZU15EG-1FFVB1156E

ADDR_CMD_CTRL



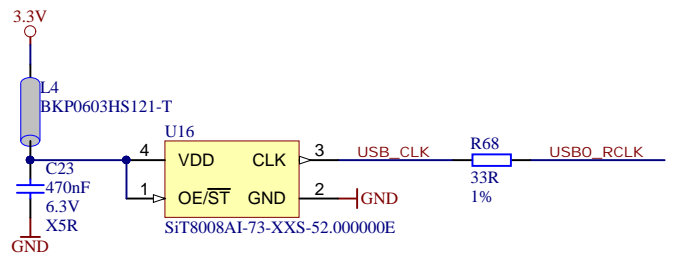
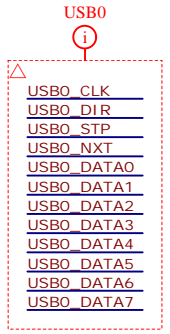
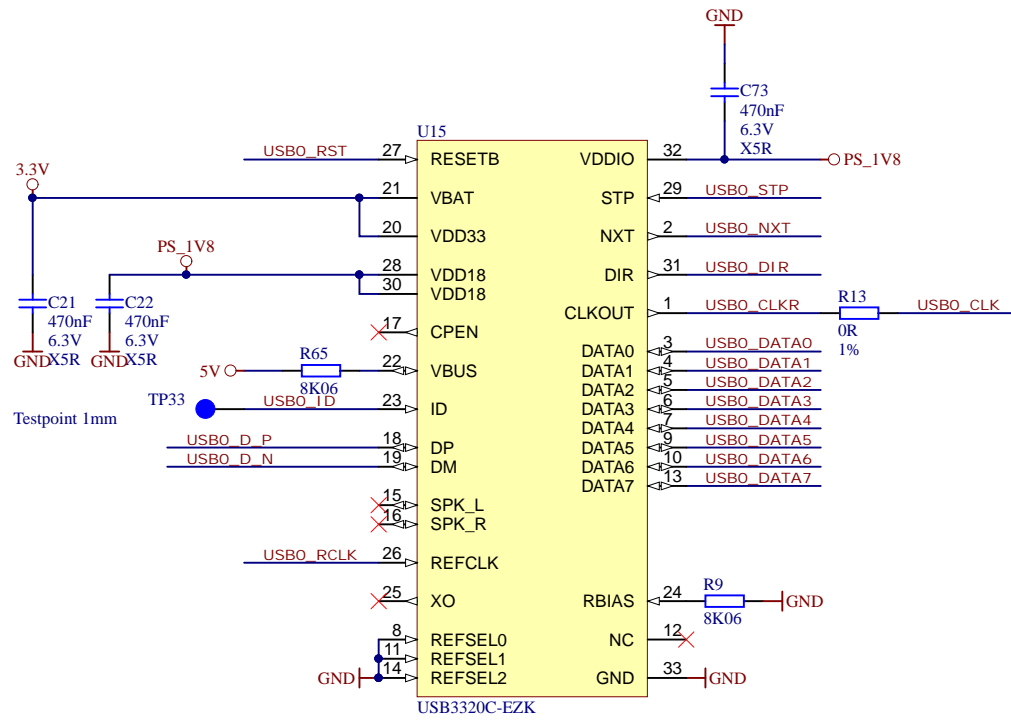
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| Title: TEB0911 - FPGA B504 | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page9 of 58 |
| Filename: ZU_PSDDR.SchDoc | | |



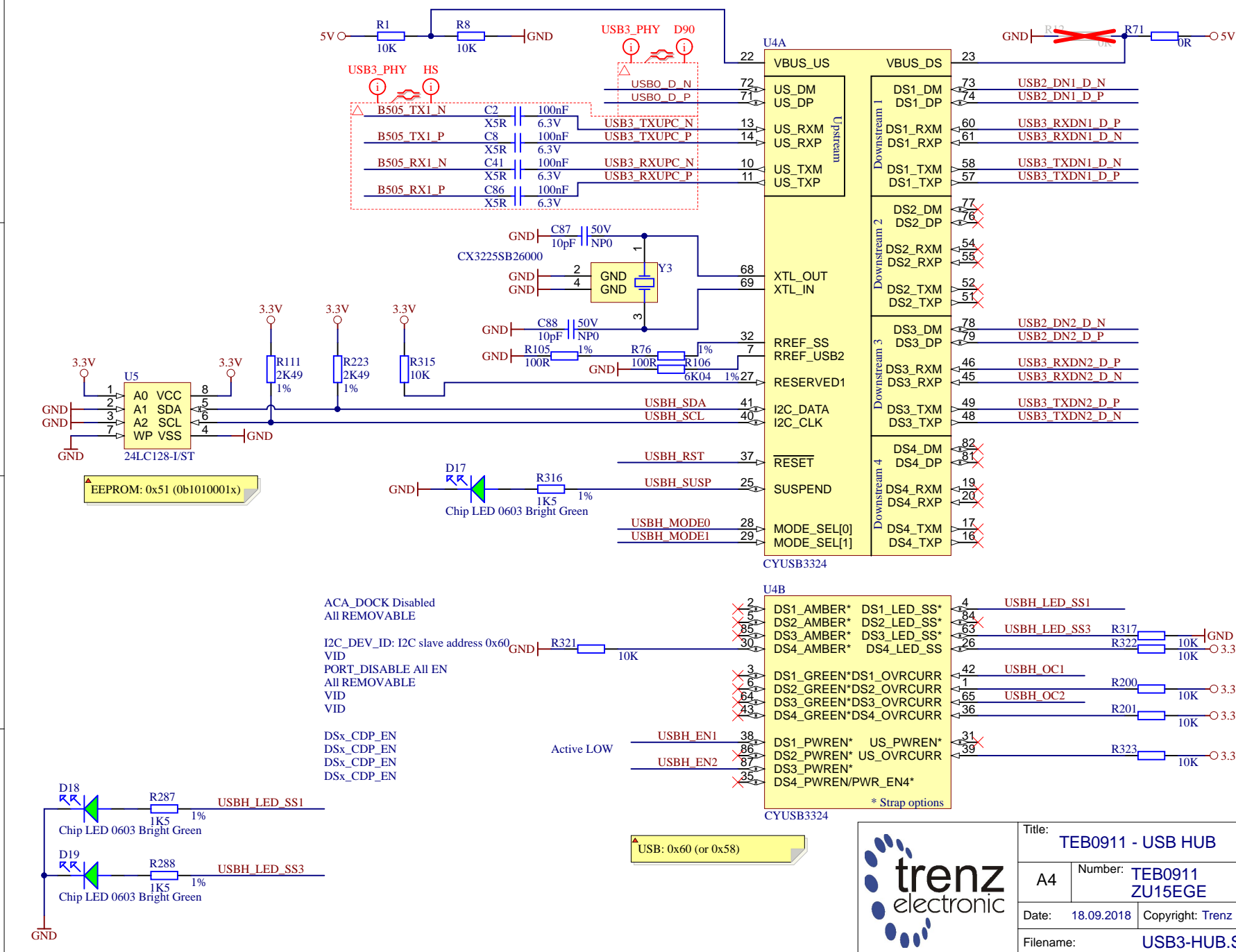
Capacitors suitable for ZU9EG, ZU15EG



| | | | |
|-----------------------------|----------------------------------|---------------|--|
| Title: TEB0911 - FPGA POWER | | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 | |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 10 of 58 | |
| Filename: ZU_PWR.SchDoc | | | |



| | | |
|-------------------------------------|---|-----------------------------|
| Title: TEB0911 - USB 2.0 PHY | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 11 of 58 |
| Filename: USB-PHY.SchDoc | | |



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.

PORT_DISABLE All EN
 PWR_EN_SEL Individual
 PIN_STRAP config

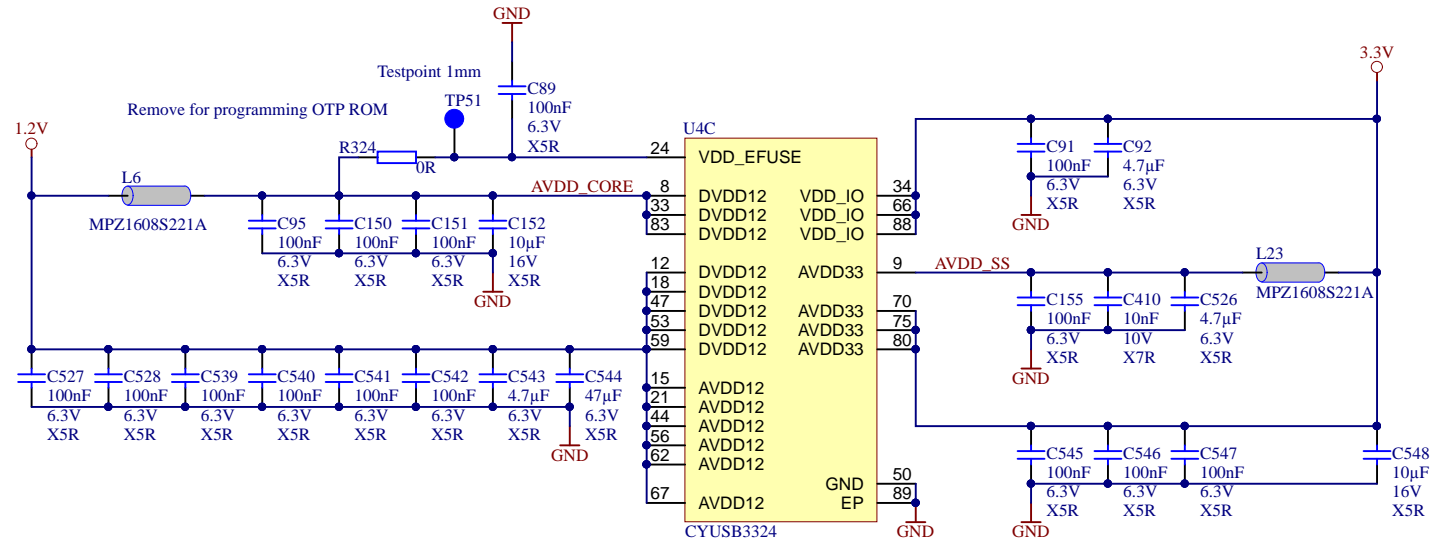
Active LOW


Power enable and overcurrent LOW

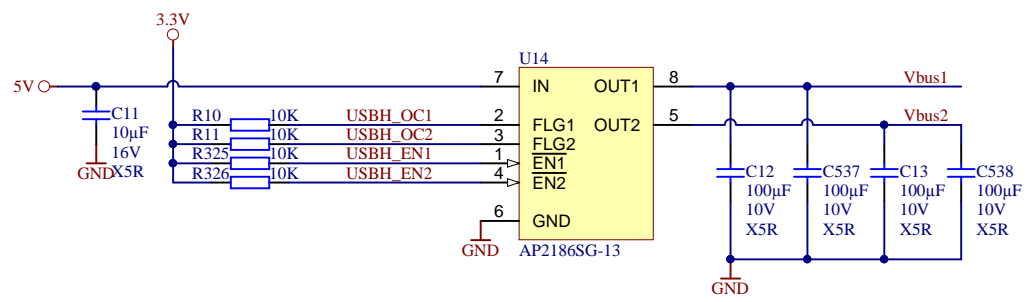
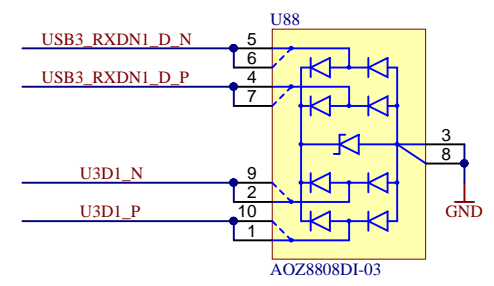
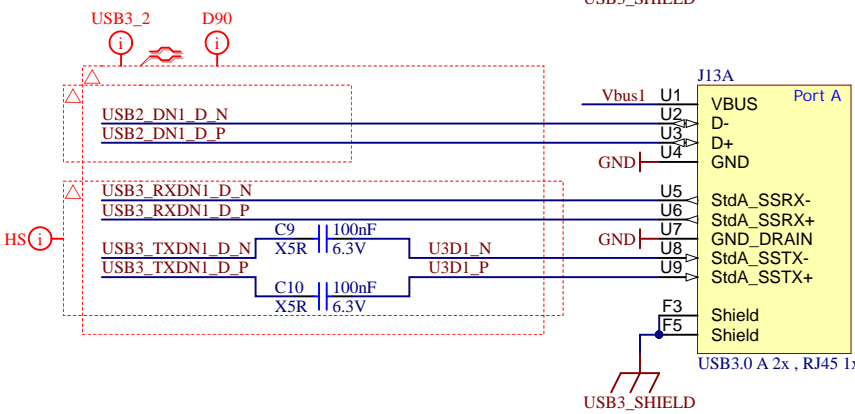
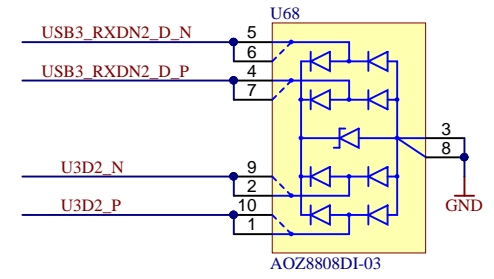
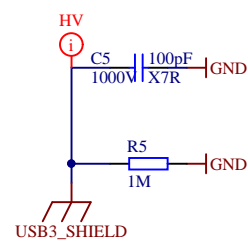
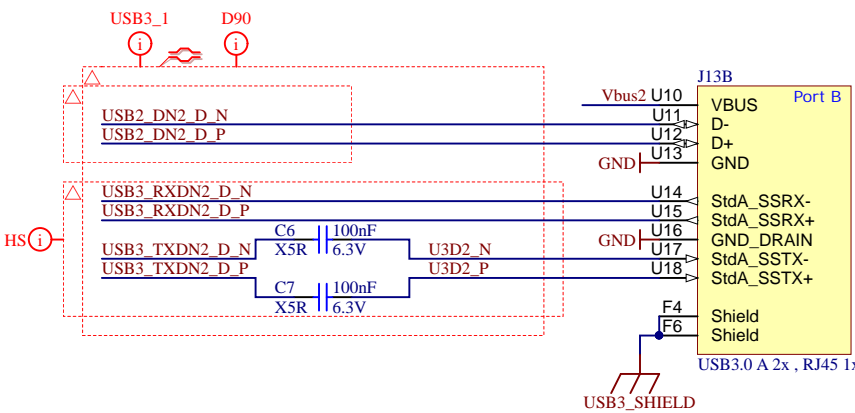
USB: 0x60 (or 0x58)



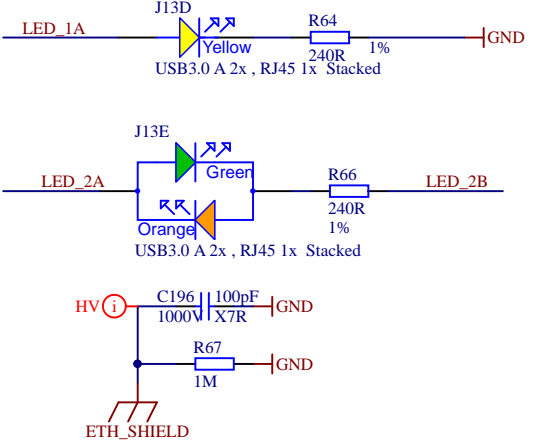
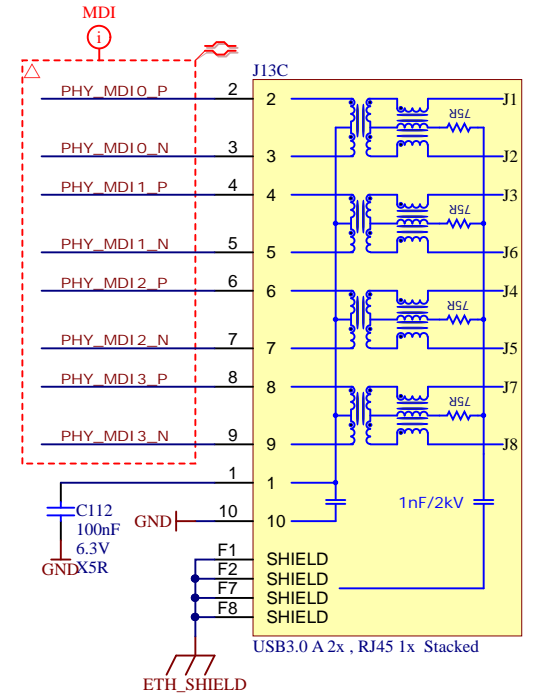
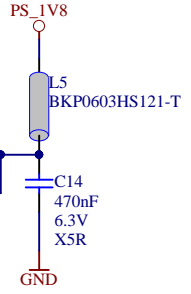
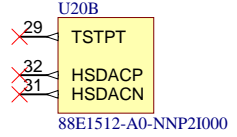
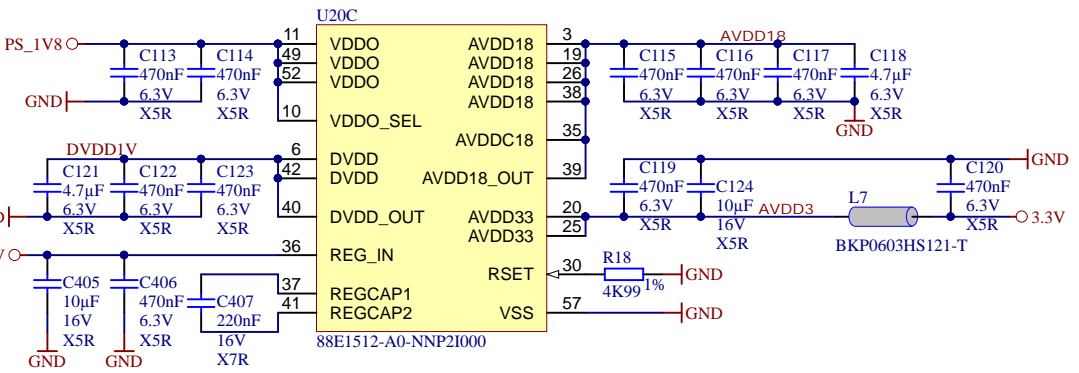
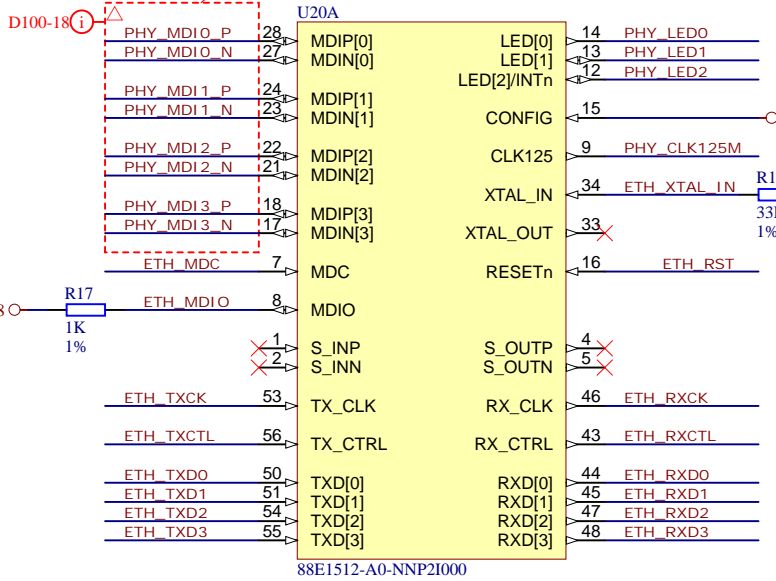
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| Title: TEB0911 - USB HUB | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 12 of 58 |
| Filename: USB3-HUB.SchDoc | | |



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|---|--------------------------------------|---|-----------------------------|
|  | Title: TEB0911 - USB HUB | | |
| | A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| | Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 13 of 58 |
| | Filename: USB3-HUB_PWR.SchDoc | | |



| | | |
|--|---|-----------------------------|
| Title: TEB0911 - USB CONNECTORS | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 14 of 58 |
| Filename: USB.SchDoc | | |



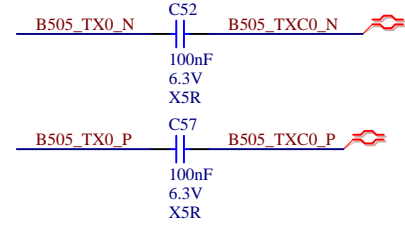
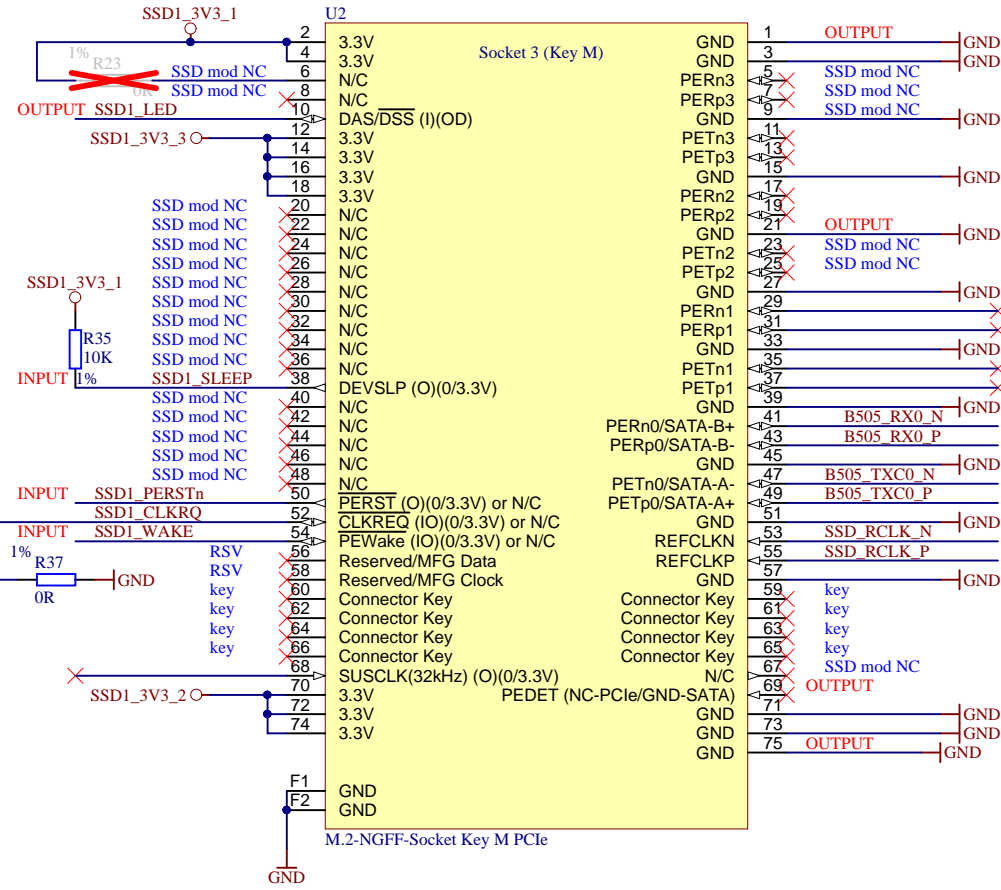
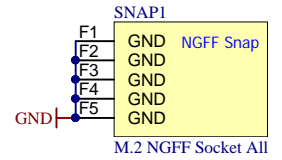
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| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 15 of 58 |
| Filename: Ethernet.SchDoc | | |

A

B

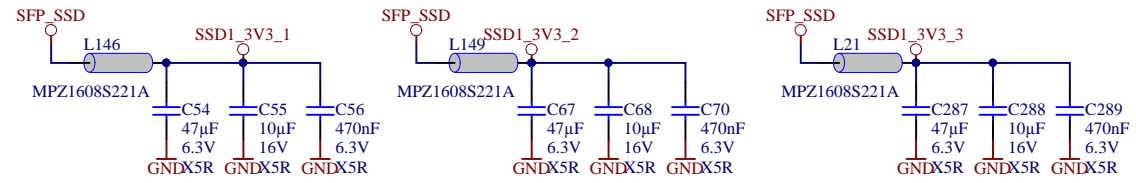
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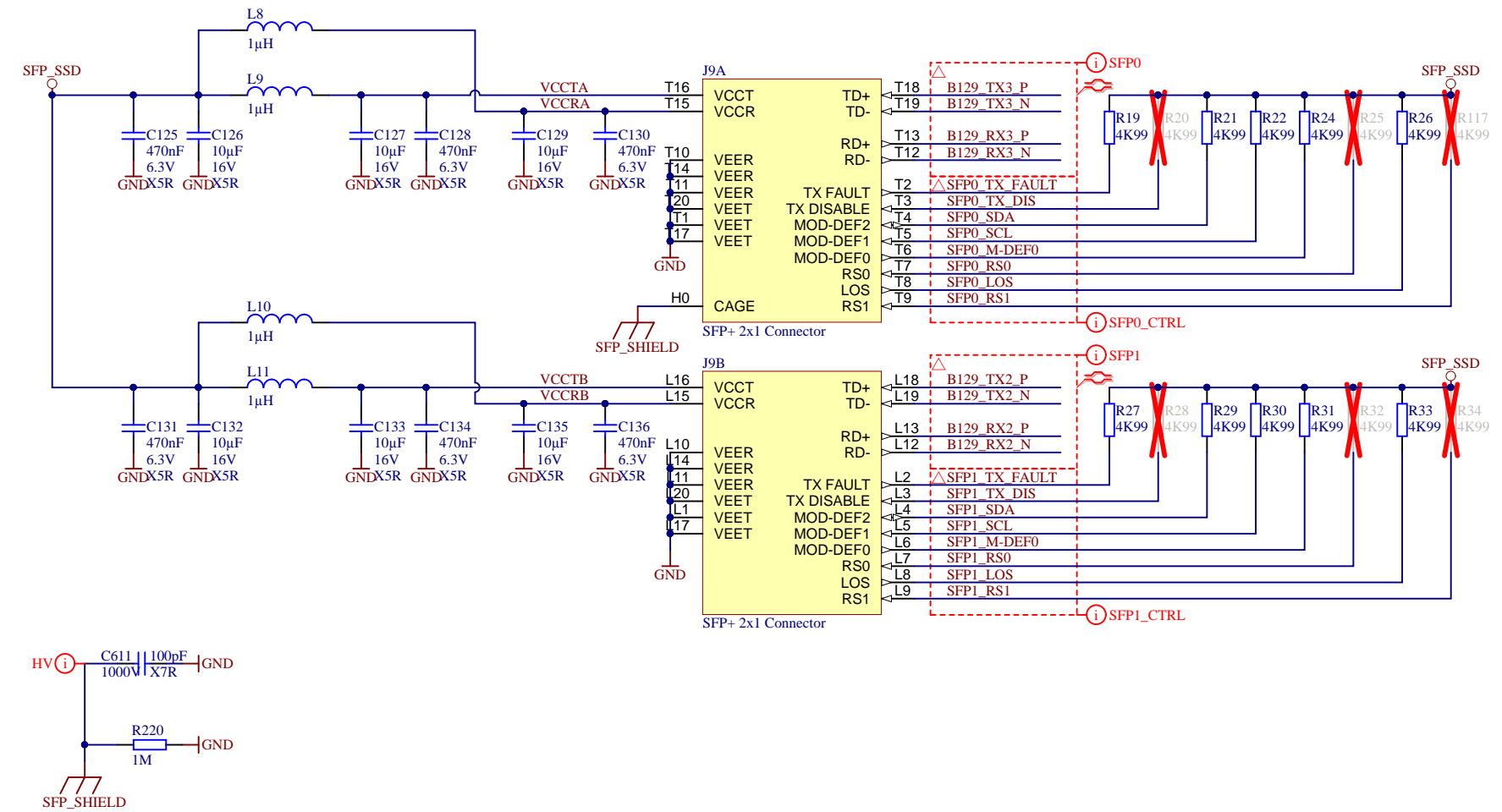


MECH1

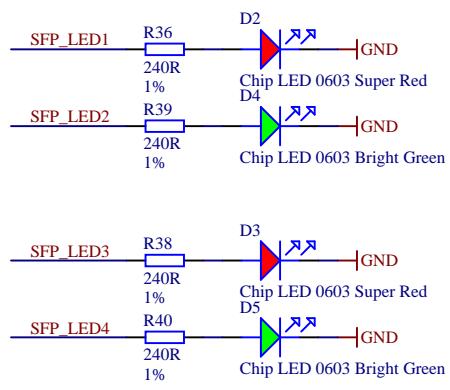
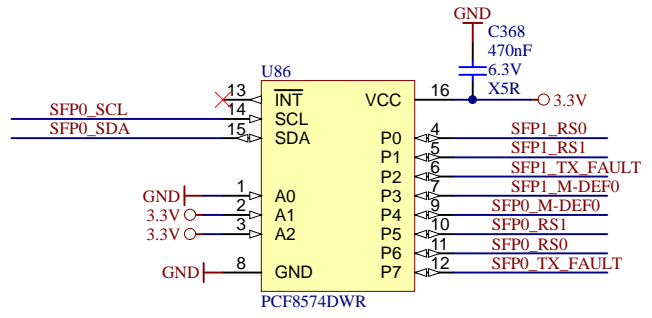
 M.2 NGFF SMD-Abstandsbolzen - M3 - 1.5mm



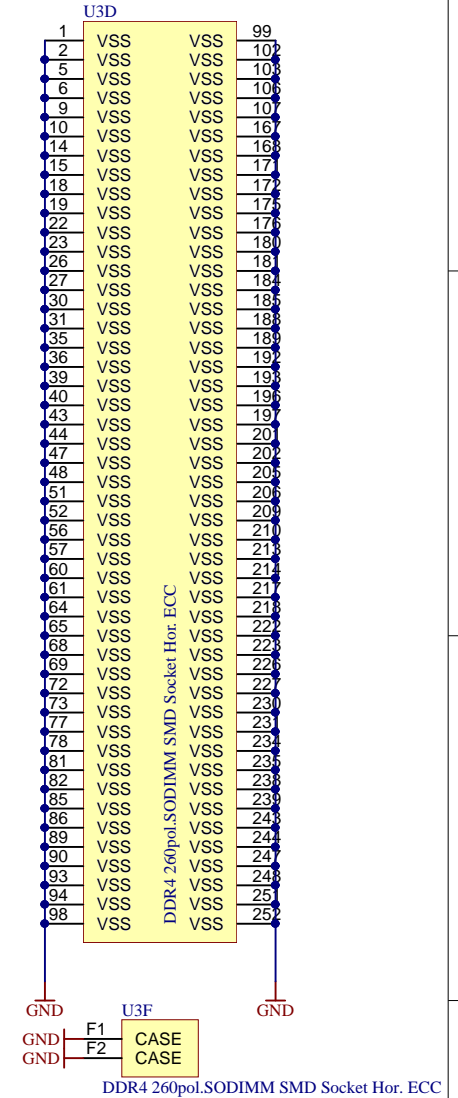
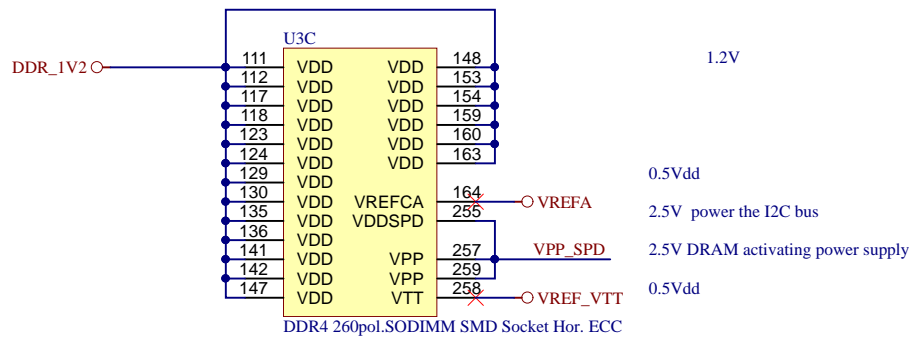
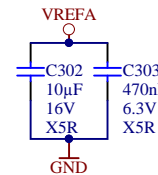
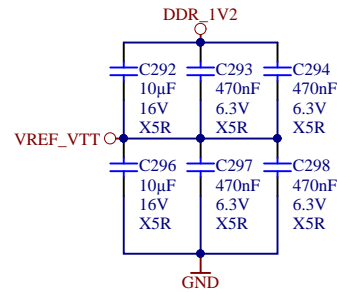
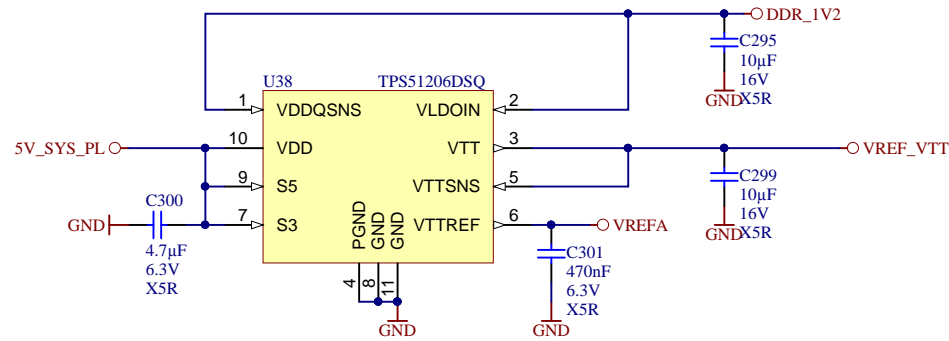
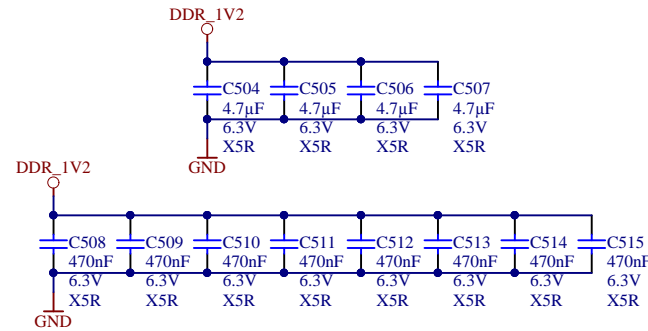
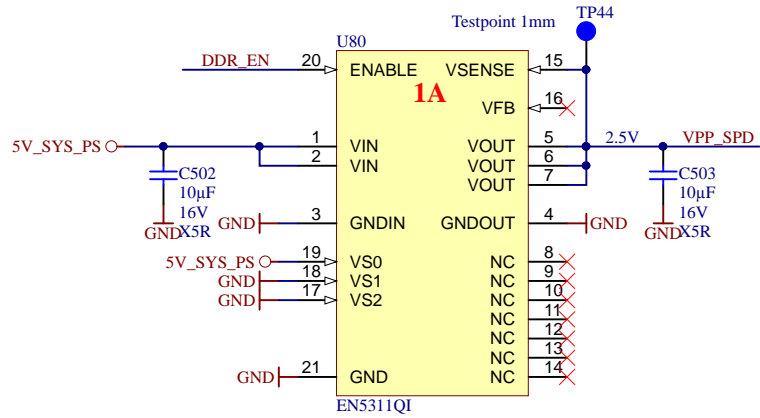
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 A4 Number: TEB0911 ZU15EGE Rev. 04
 Date: 18.09.2018 Copyright: Trenz Electronic GmbH Page 16 of 58
 Filename: SSD.SchDoc



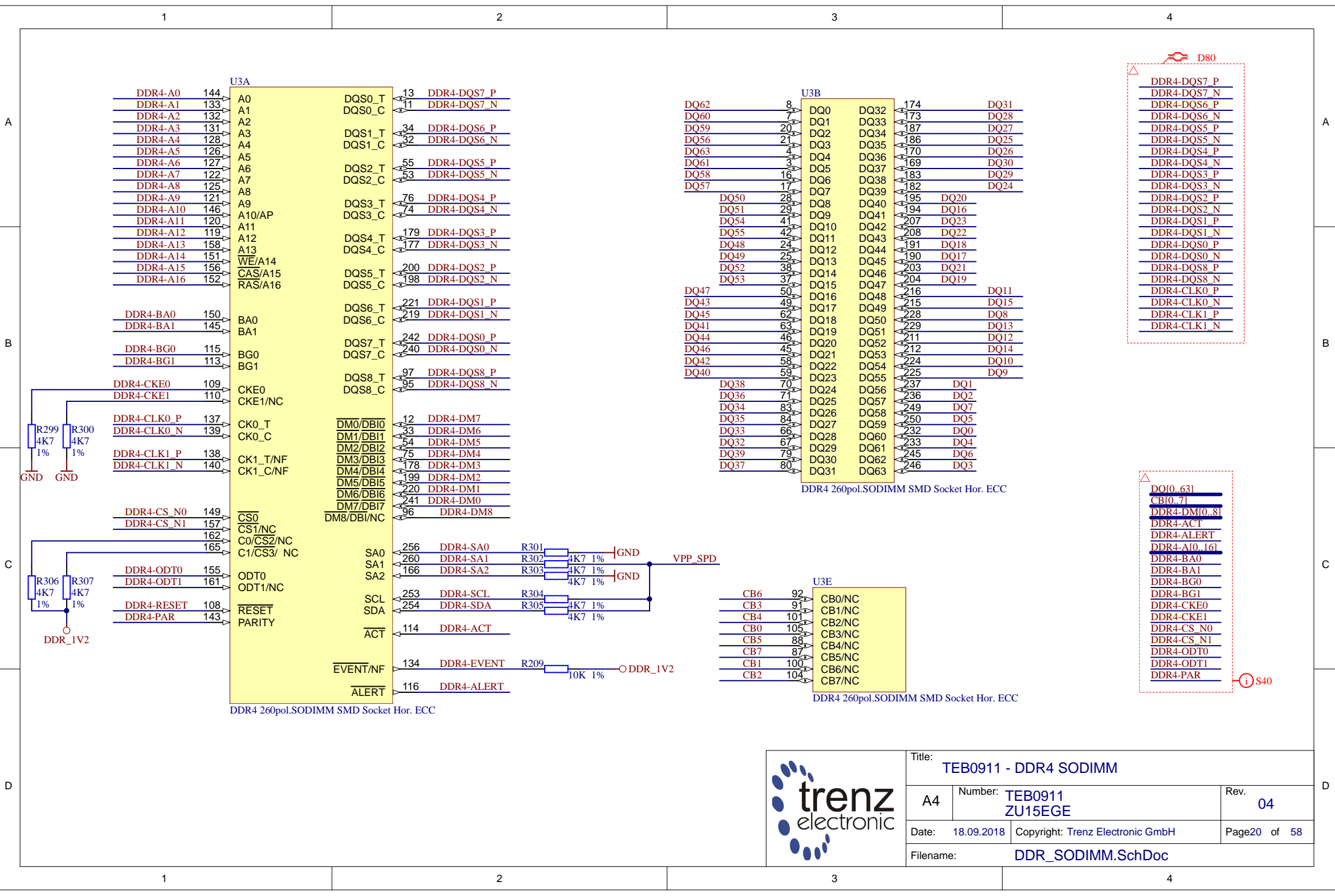
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| | Filename: SFP.SchDoc | Page 17 of 58 |



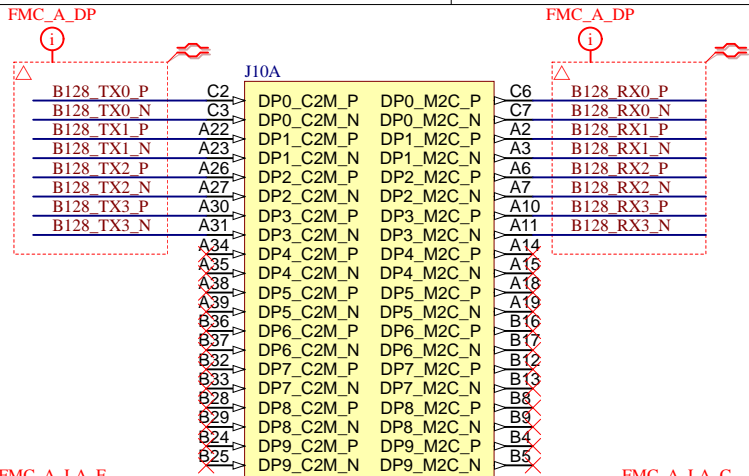
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| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 18 of 58 |
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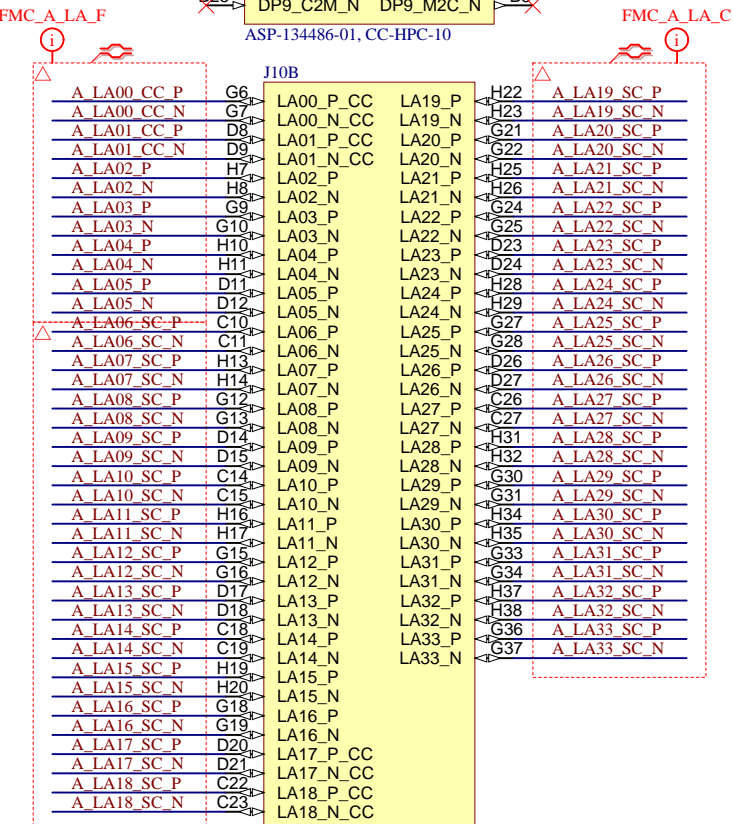
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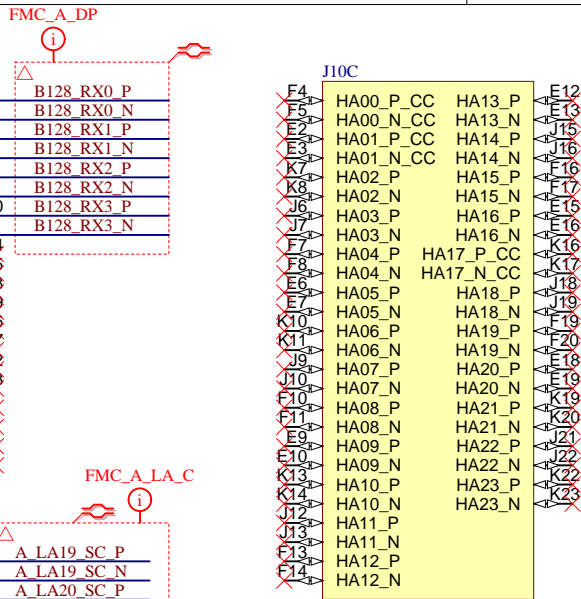
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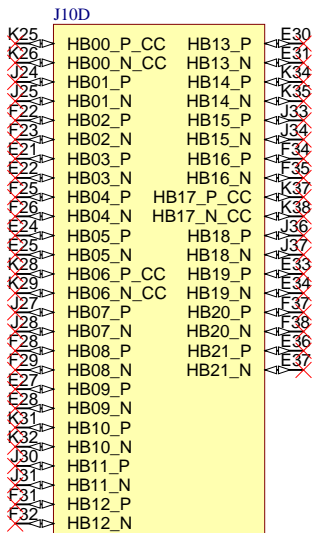
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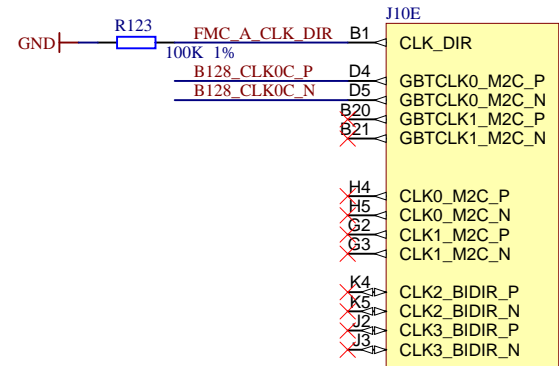
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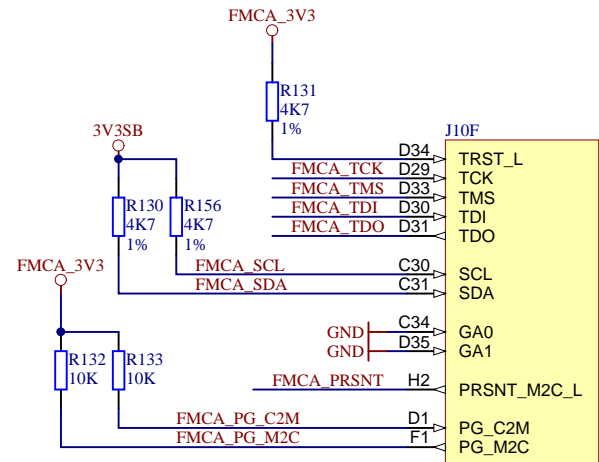
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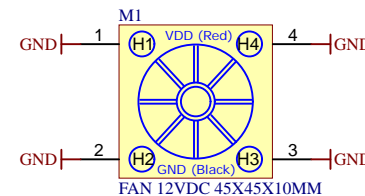
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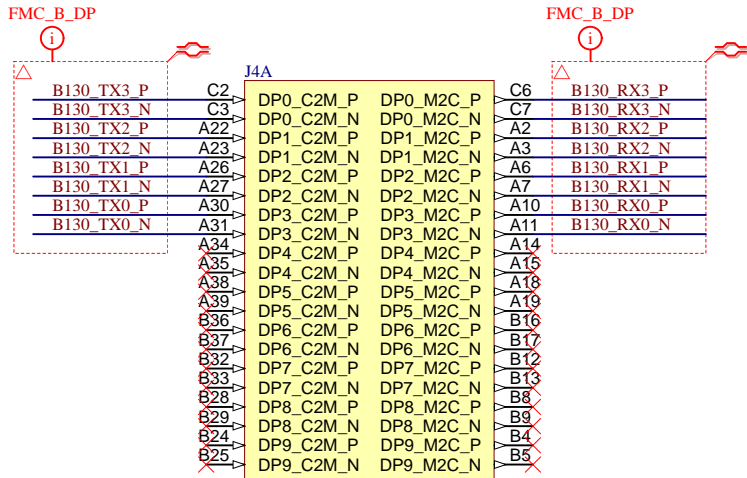
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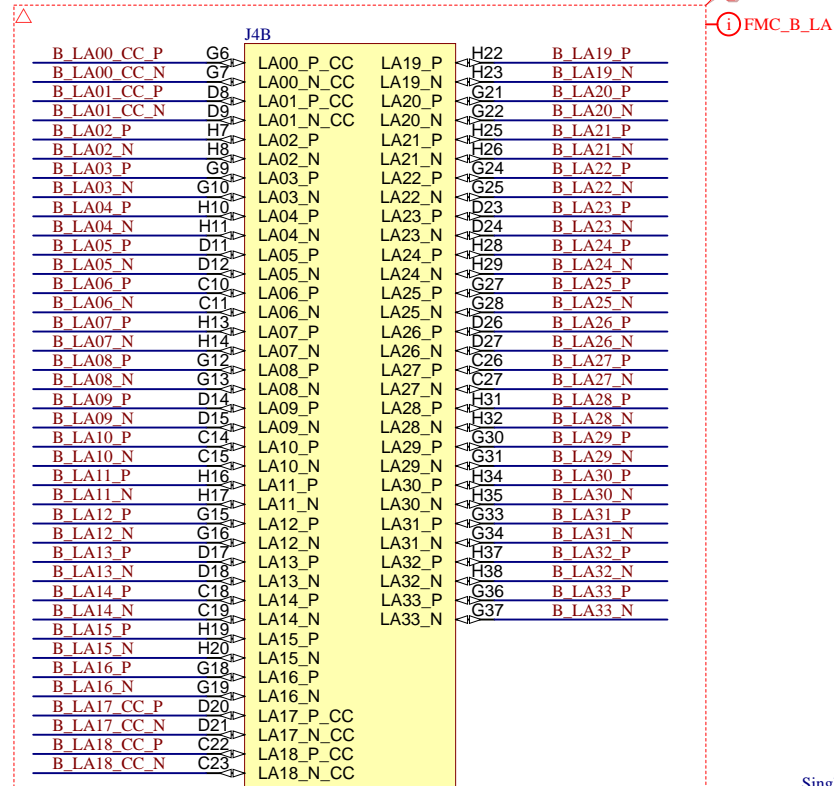
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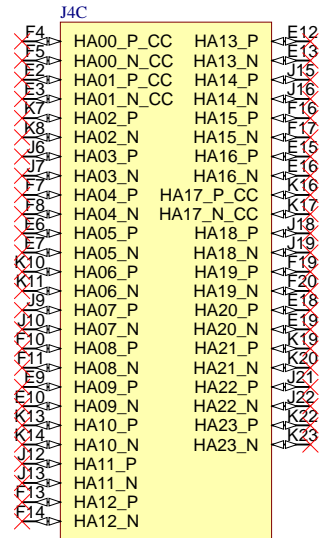
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| Date: 18.09.2018 | Page 21 of 58 | | | |
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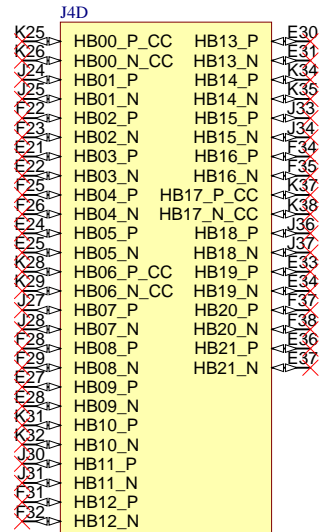
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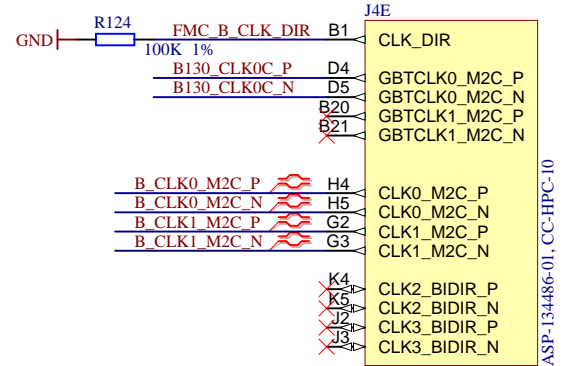
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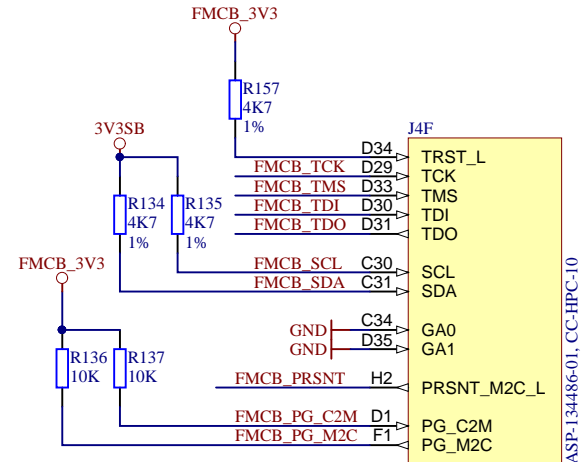
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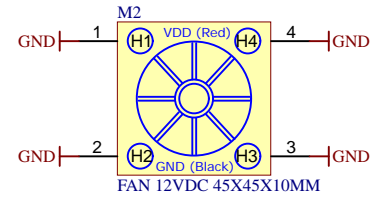
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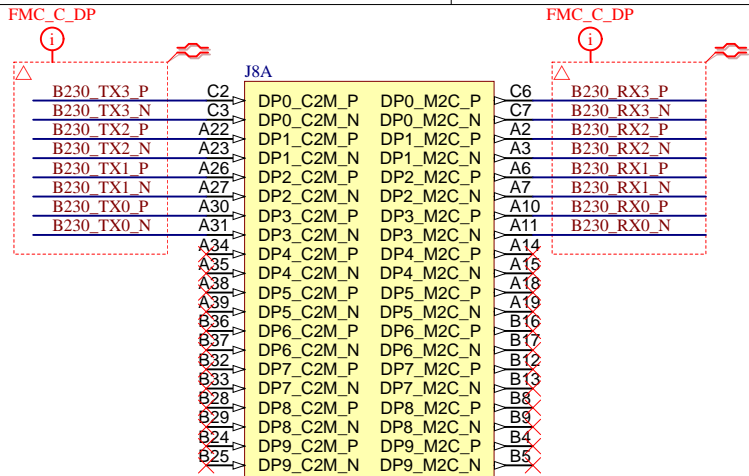
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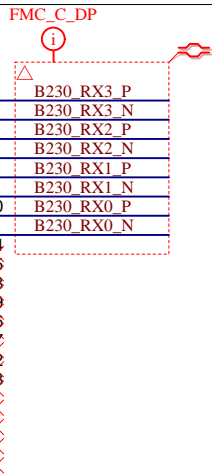
FAN 12VDC 45X45X10MM



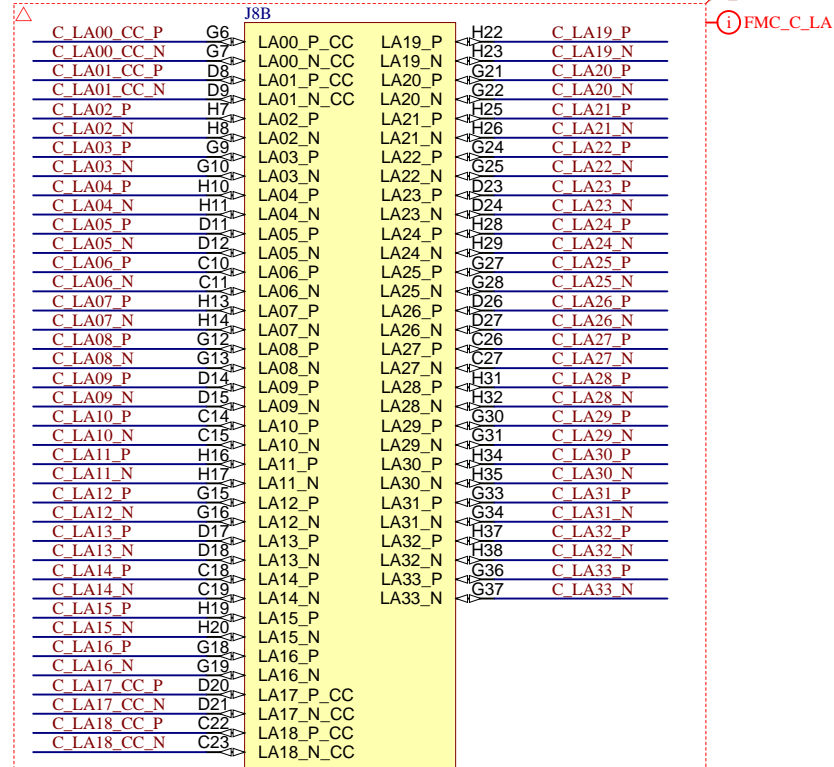
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| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 22 of 58 |
| Filename: FMC_B.SchDoc | | |



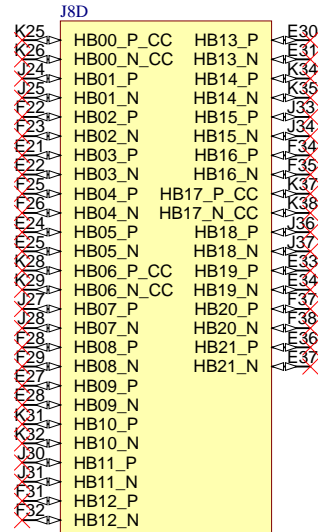
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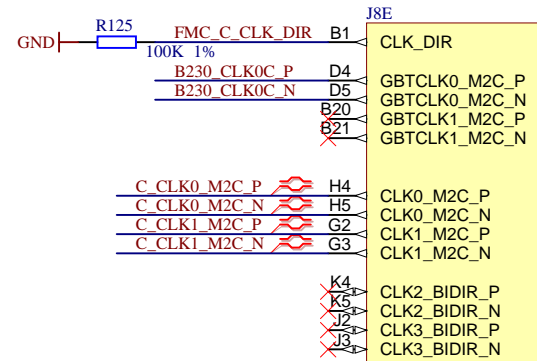
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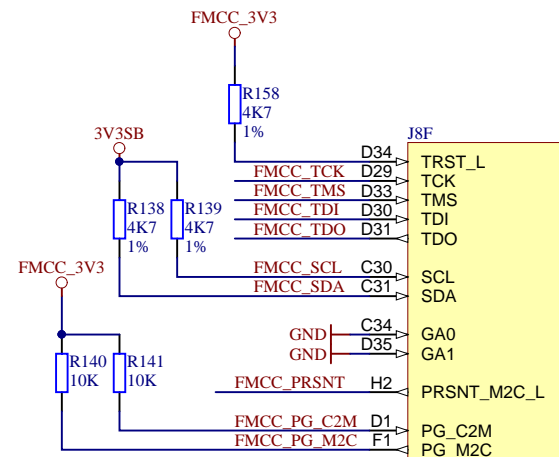
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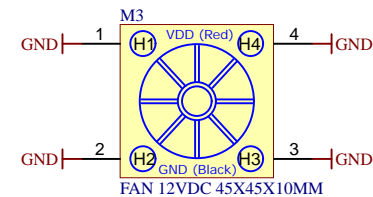
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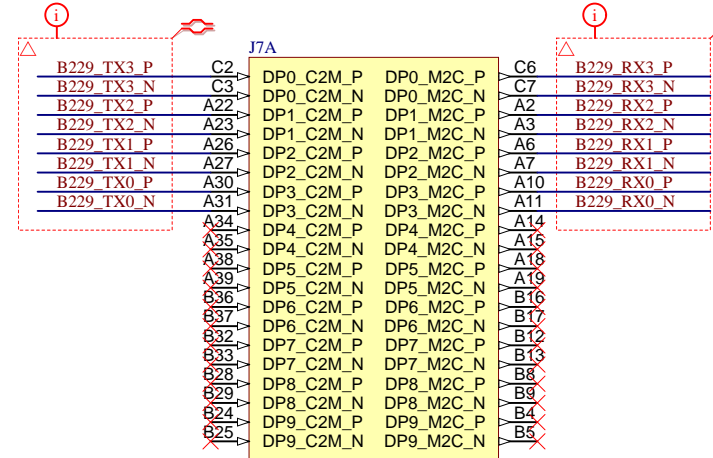
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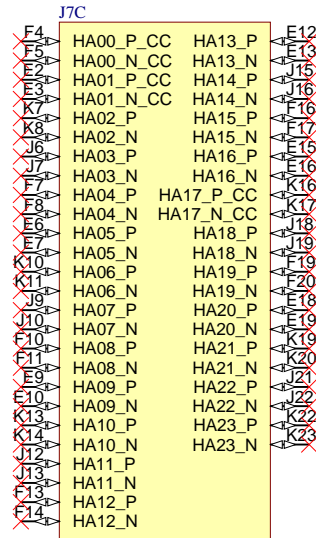
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| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 23 of 58 |
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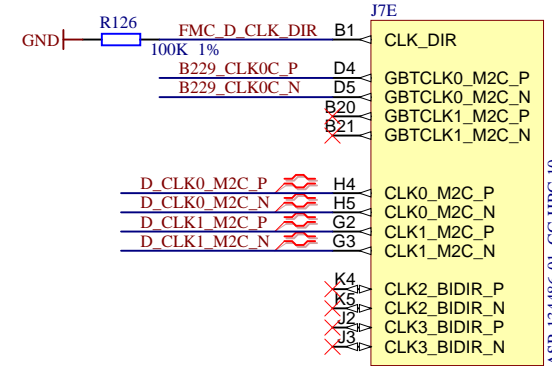
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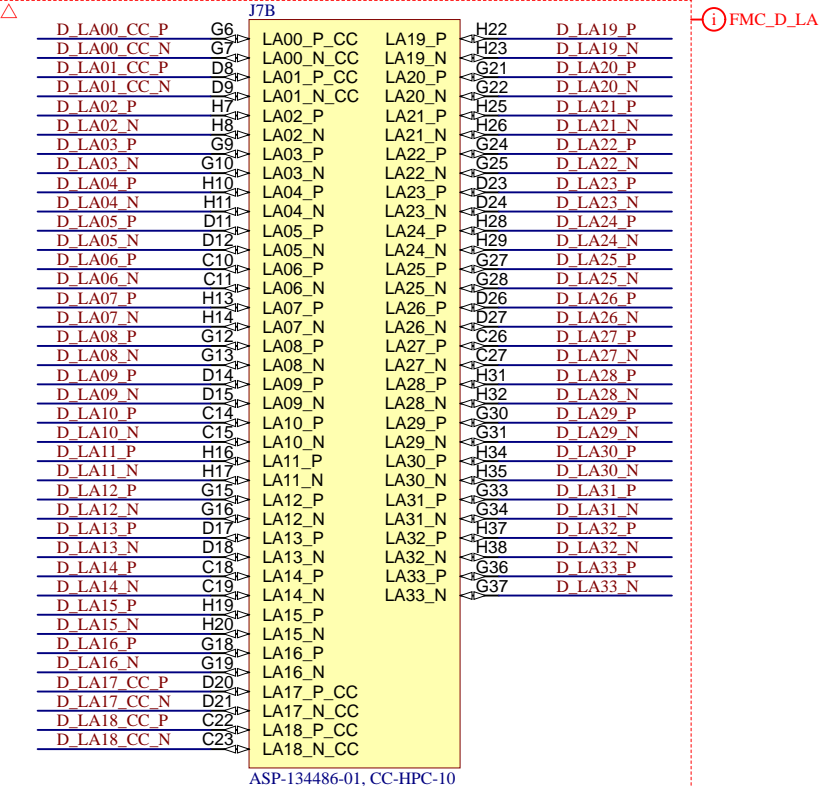
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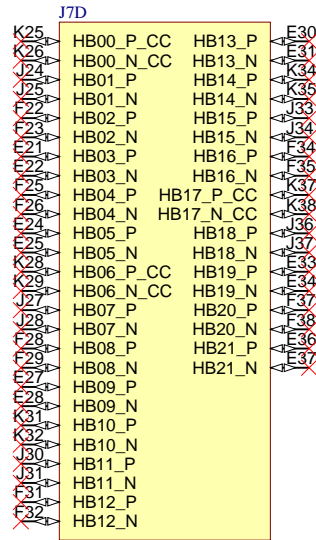
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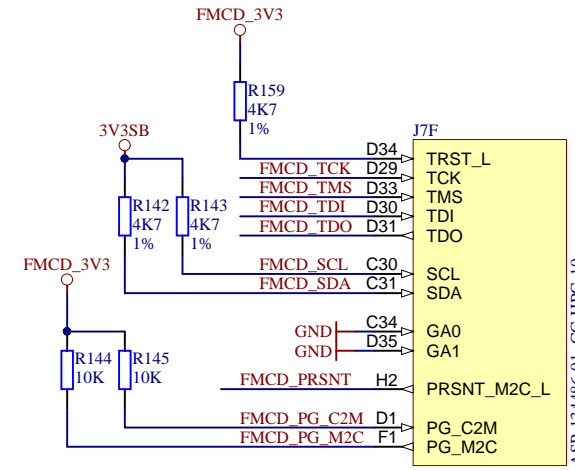
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ASP-134486-01, CC-HPC-10



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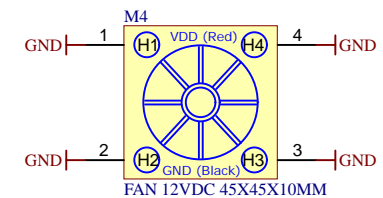
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Single FMC Commercial Baseboard Snap

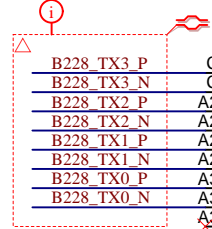


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| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page24 of 58 |
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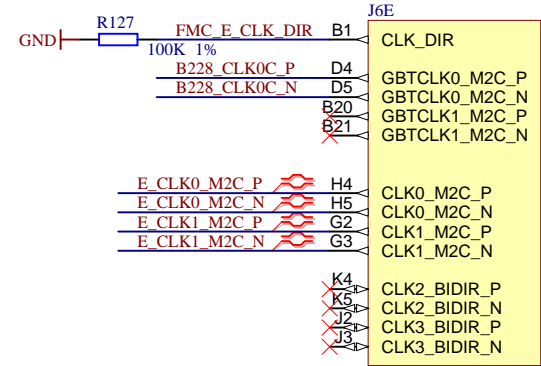
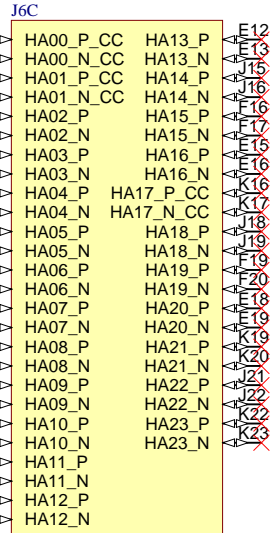
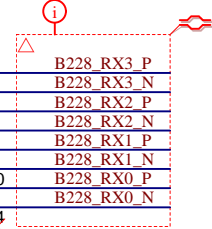


FAN 12VDC 45X45X10MM

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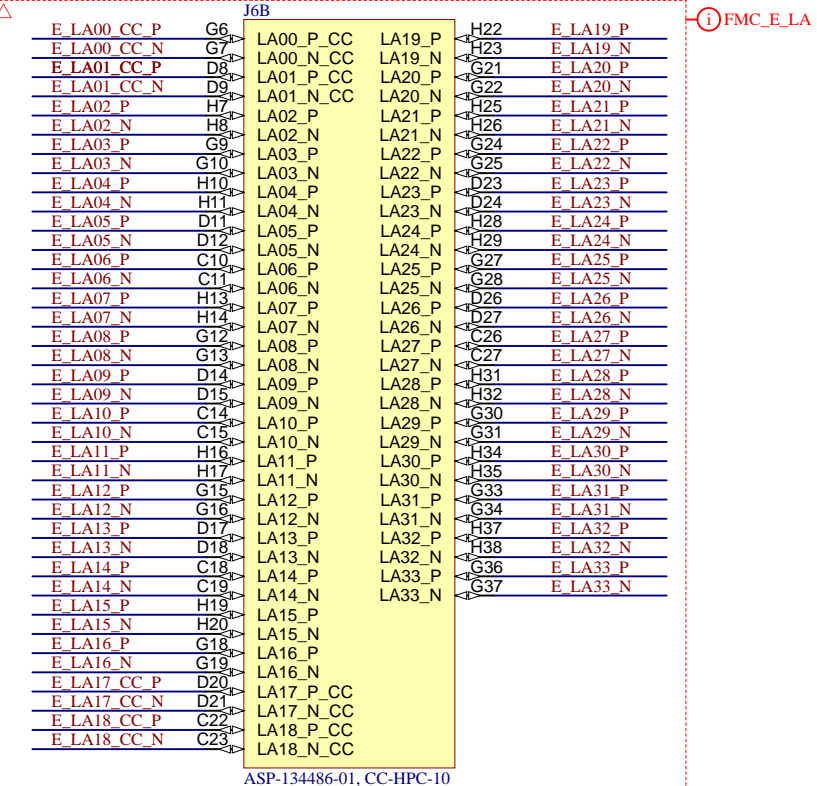


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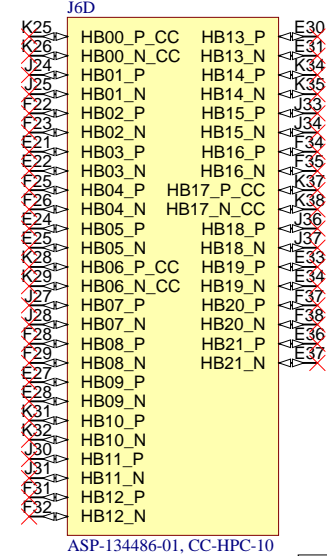
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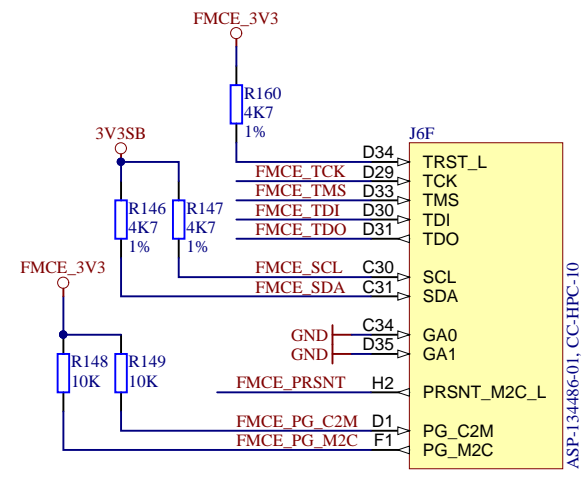
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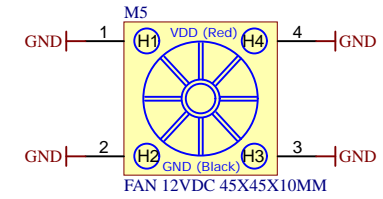
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U7 SNAP

Single FMC Commercial Baseboard Snap



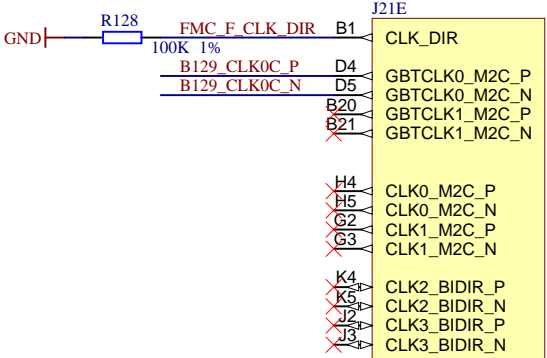
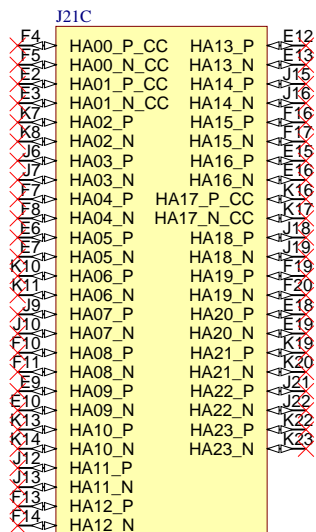
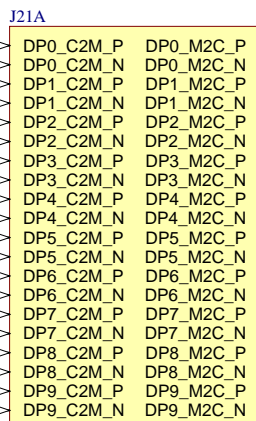
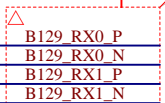
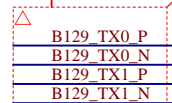
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| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 25 of 58 |
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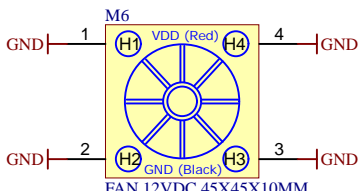
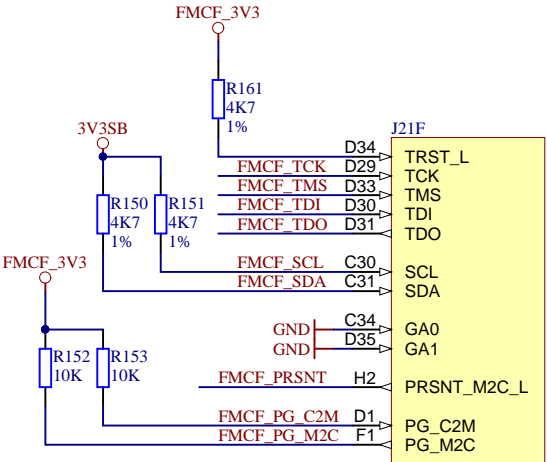
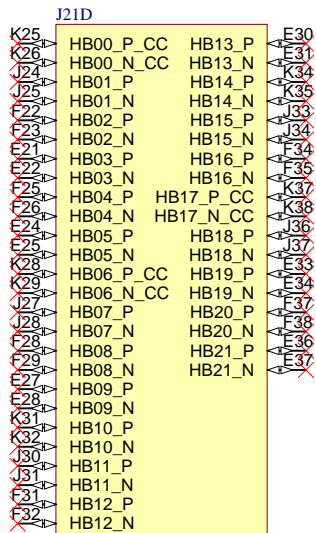
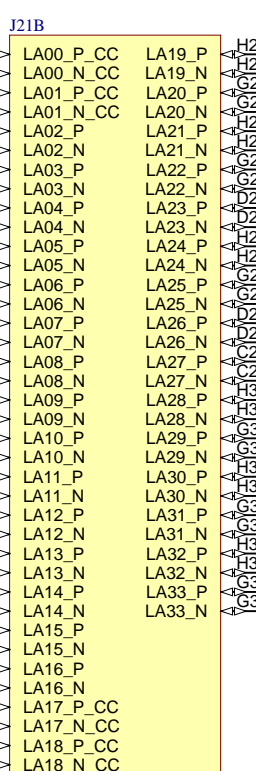
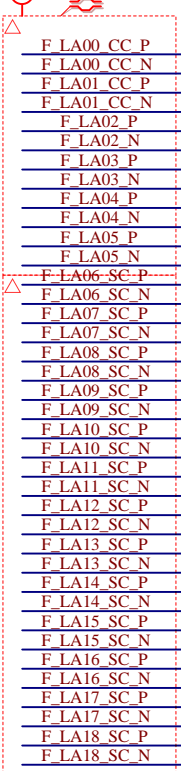
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FMC_F_DP



FMC_F_LA_F

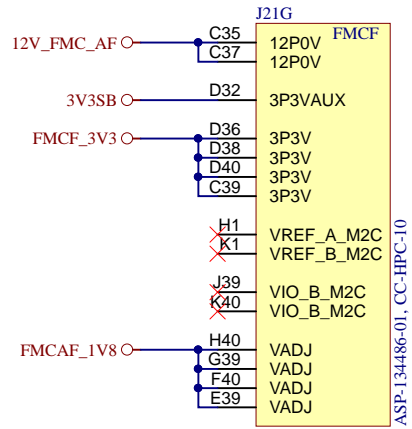
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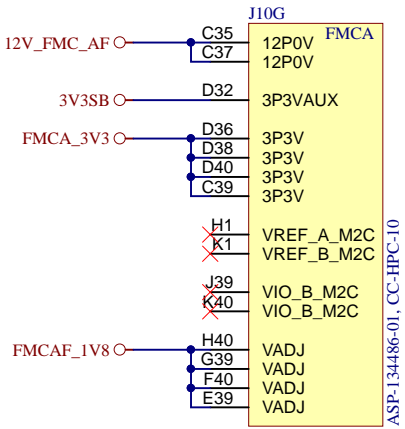
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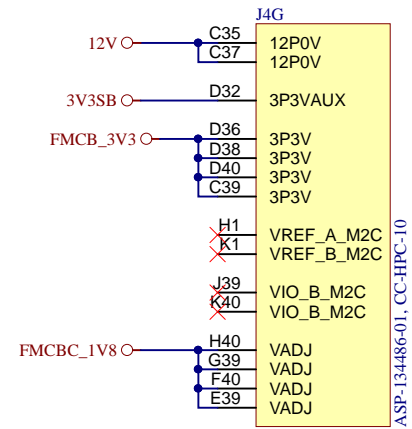
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| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 26 of 58 |
| Filename: FMC_F.SchDoc | | |



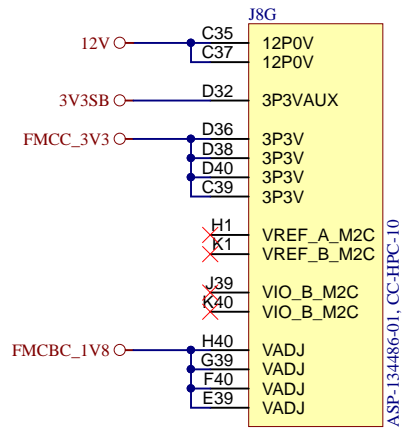
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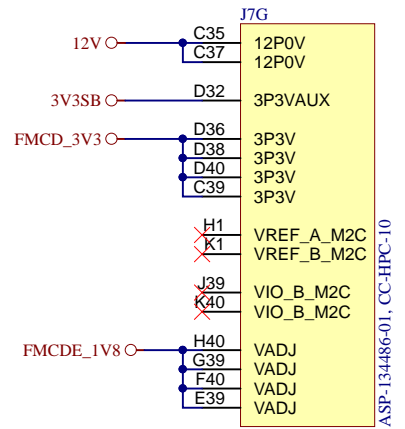
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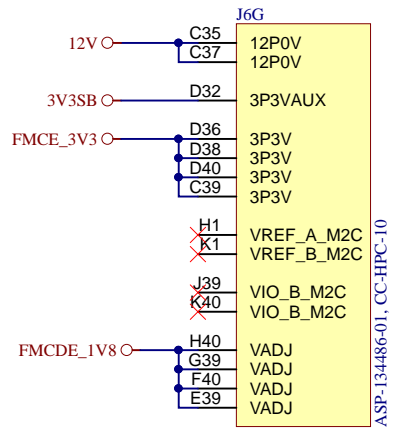
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ASP-134486-01, CC-HPC-10



ASP-134486-01, CC-HPC-10

- 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
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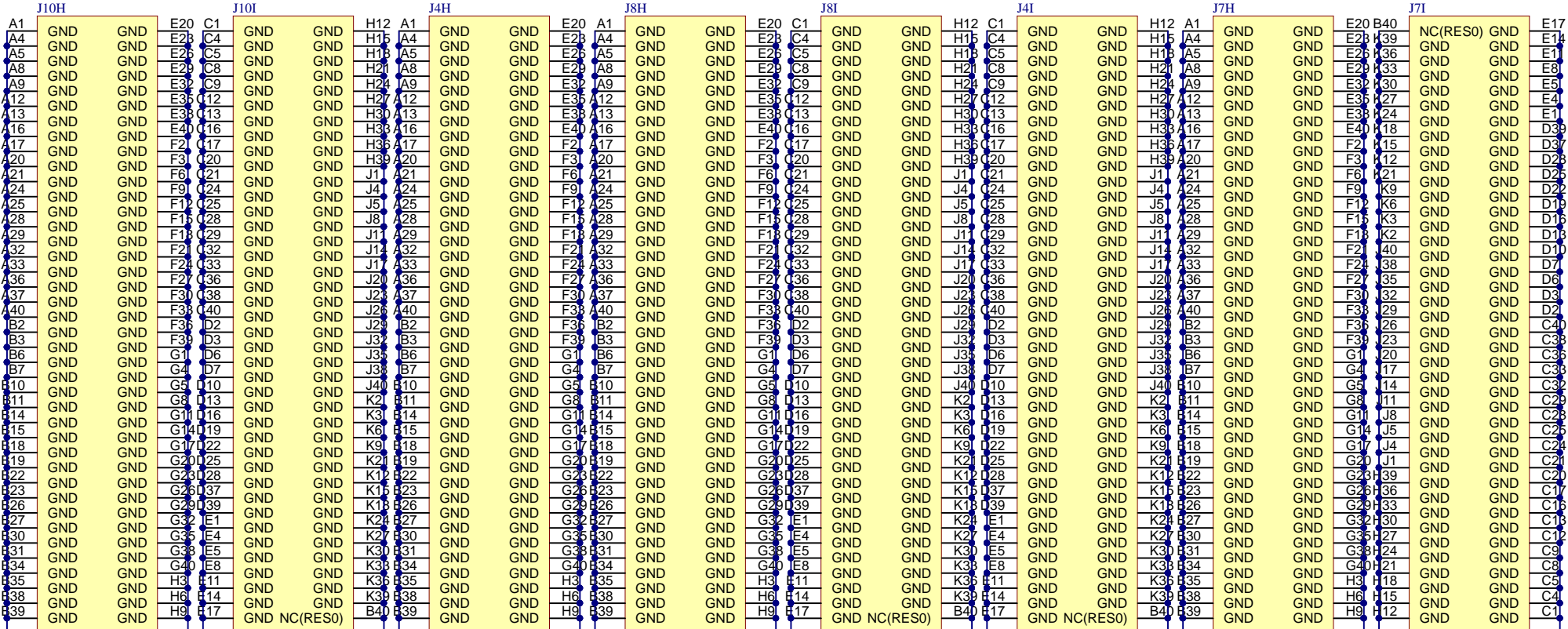
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| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 27 of 58 |
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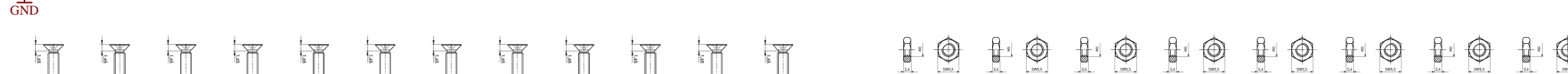
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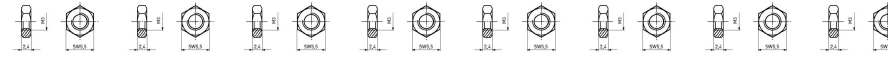
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Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head

Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3 Nut M3

Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head Screw M3x6 C.Head



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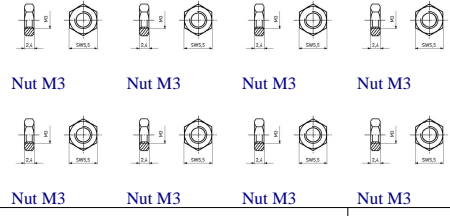
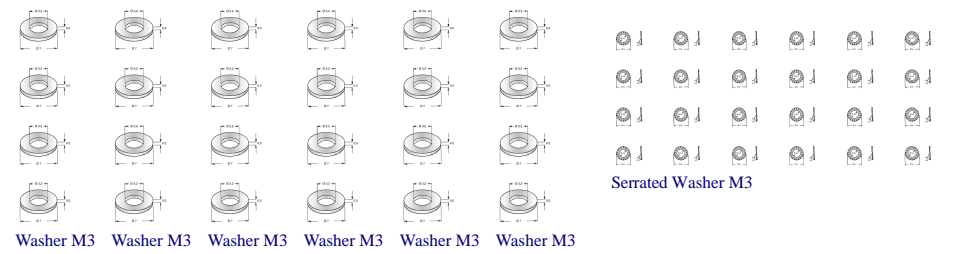
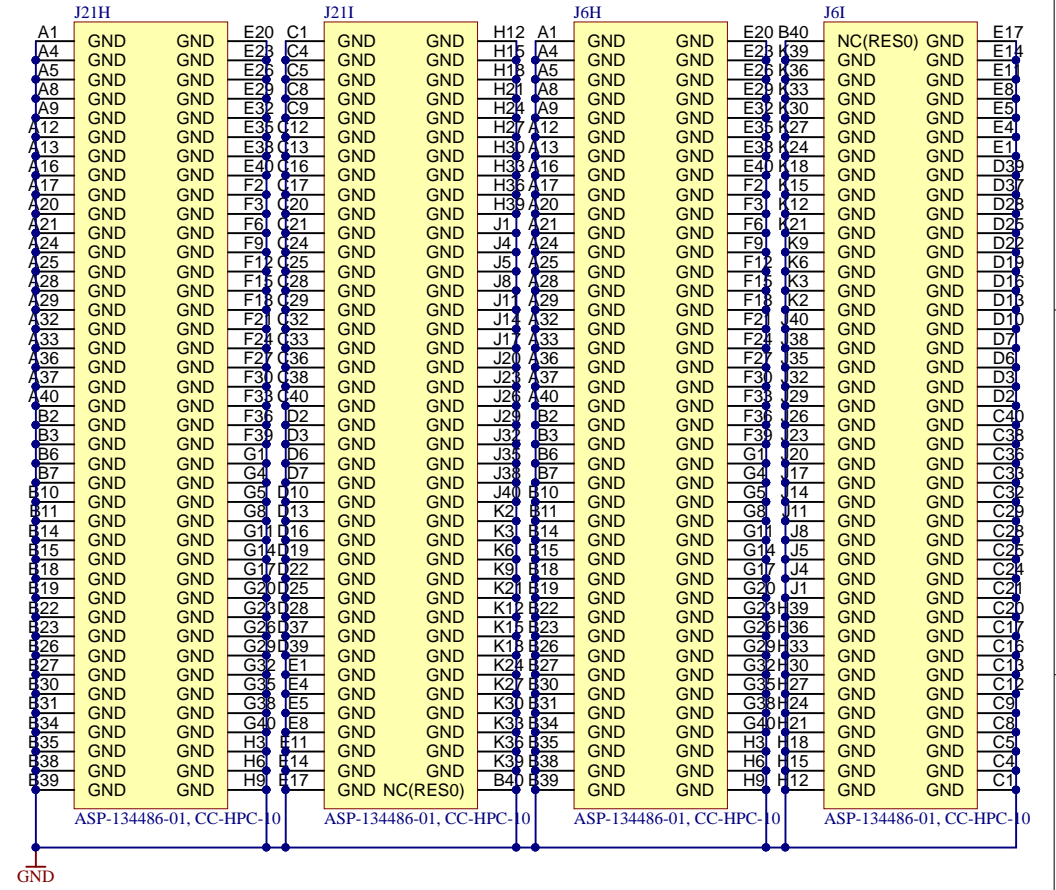
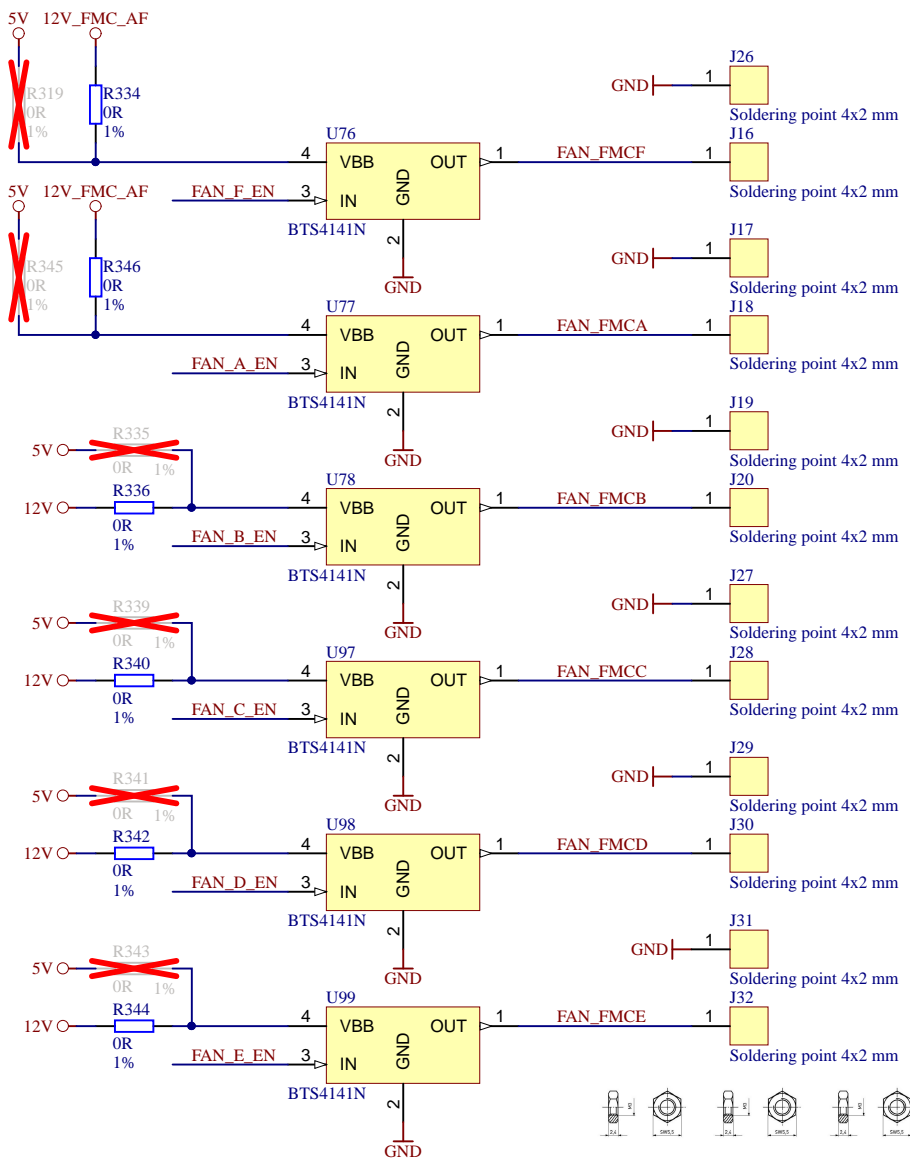
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| | Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 28 of 58 |
| | Filename: FMC_GND.SchDoc | | |

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|------------------------------|----------------------------------|---------------|
| Title: TEB0911 - FMC GND FAN | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 29 of 58 |
| Filename: FMC GND2.SchDoc | | |

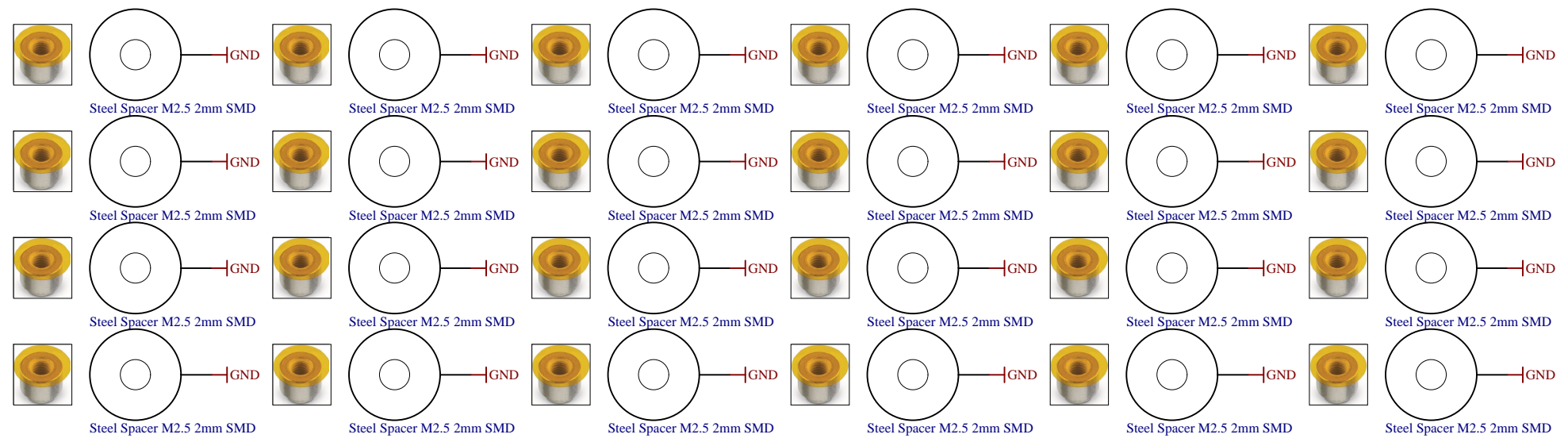
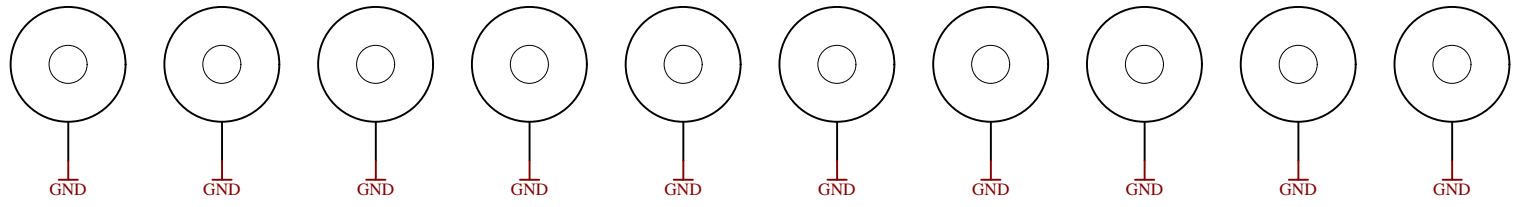
1


2

3

4

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



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|  | Title: TEB0911 - FMC MECH | | |
| | A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| | Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 30 of 58 |
| | Filename: FMC_MECH.SchDoc | | |

1

2

3

4

A

B

C

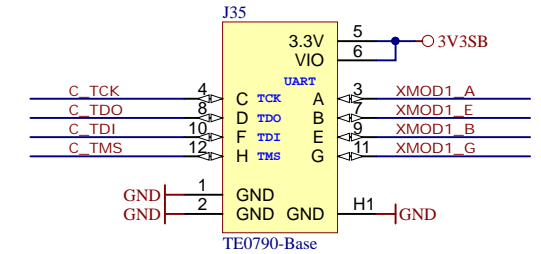
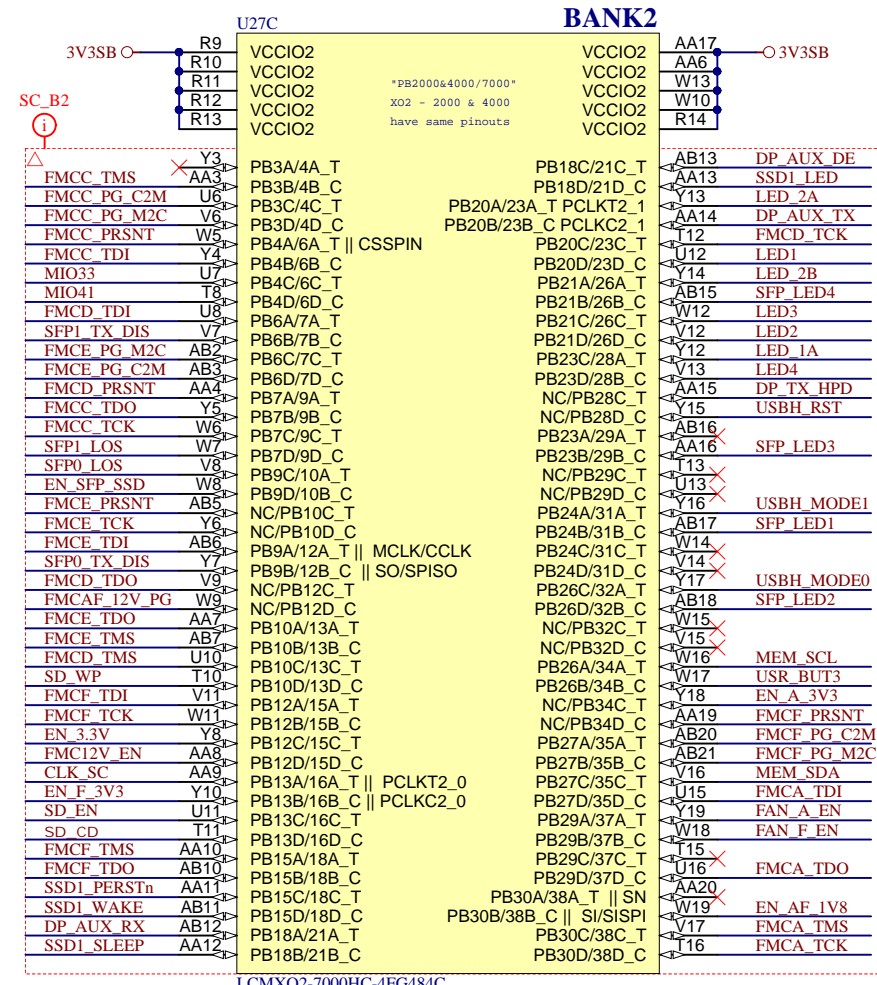
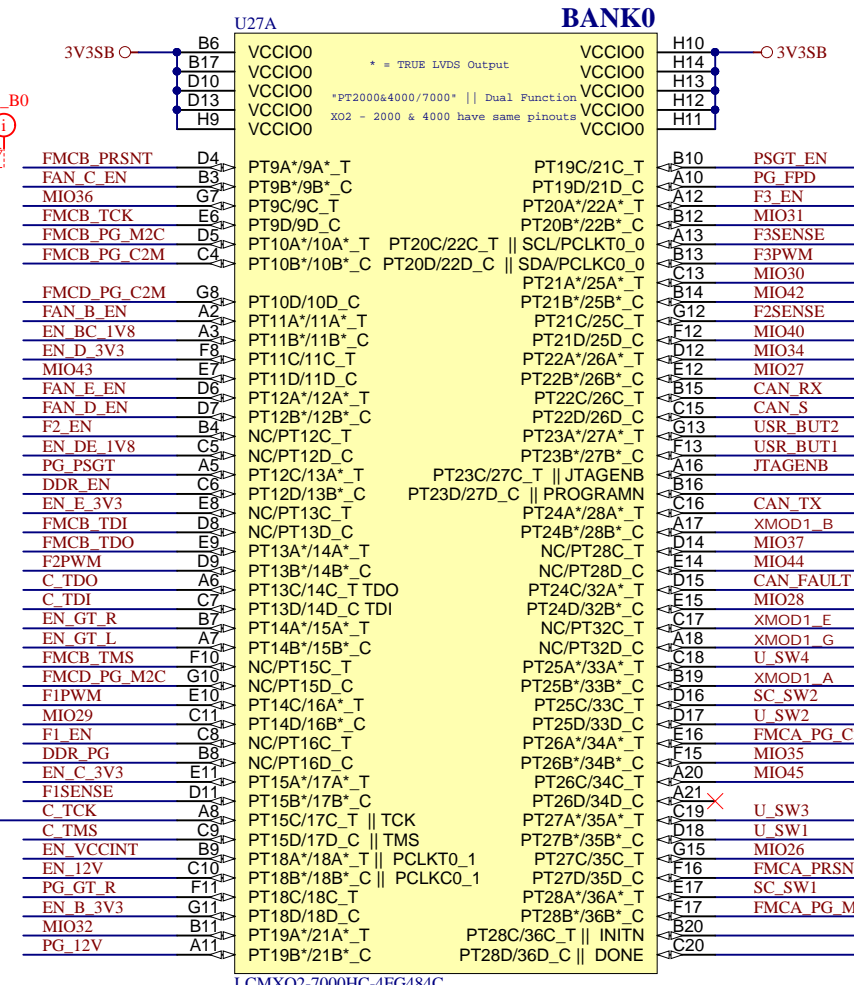
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A

B

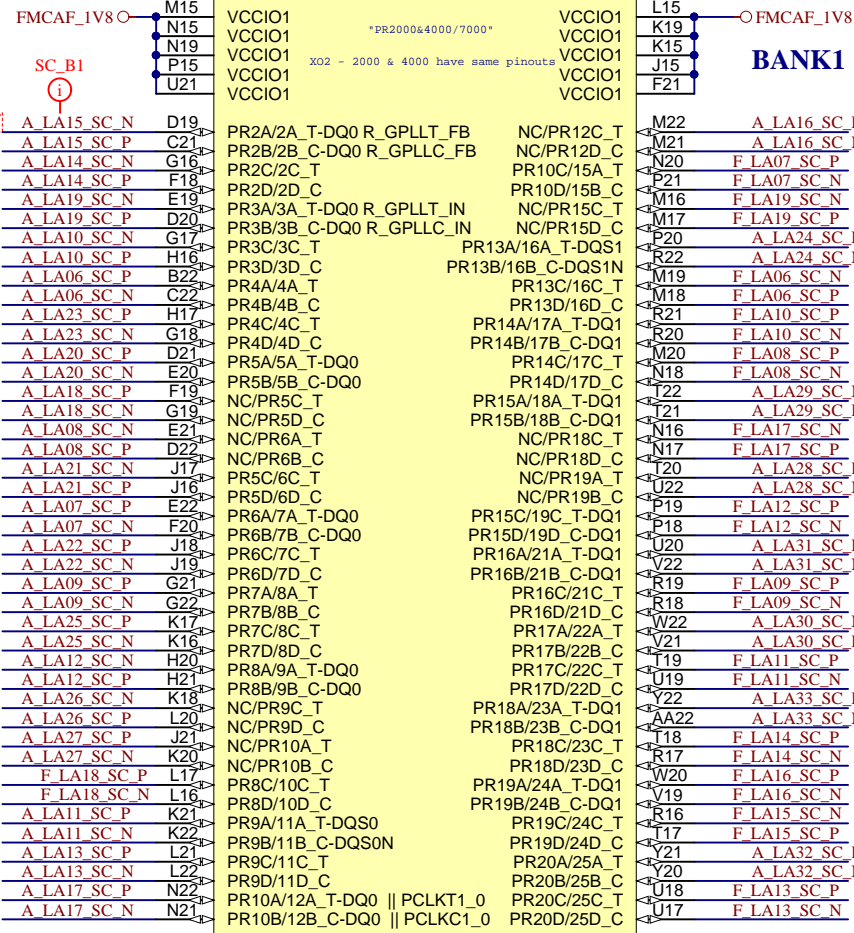
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D



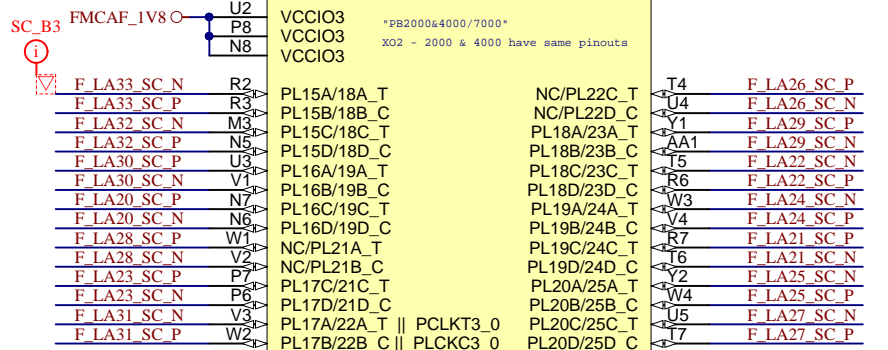
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| Title: TEB0911 - CPLD | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 31 of 58 |
| Filename: SC.schdoc | | |

U27B



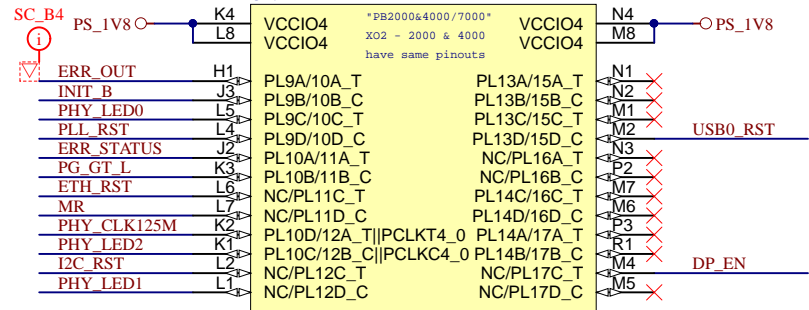
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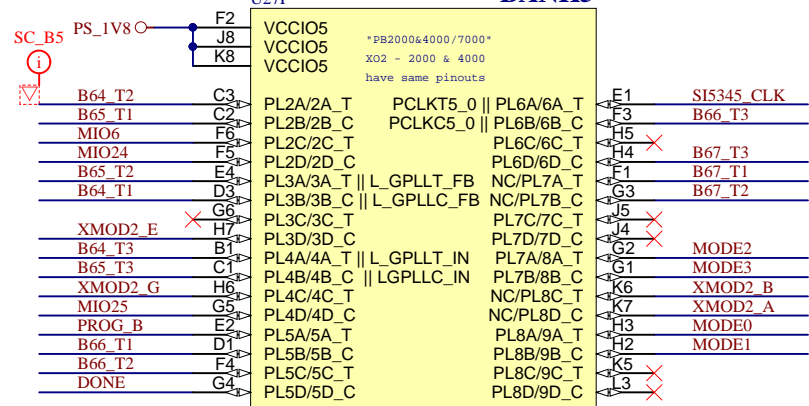
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U27E

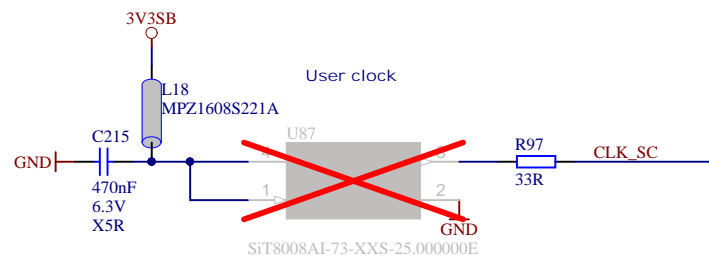


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U27F



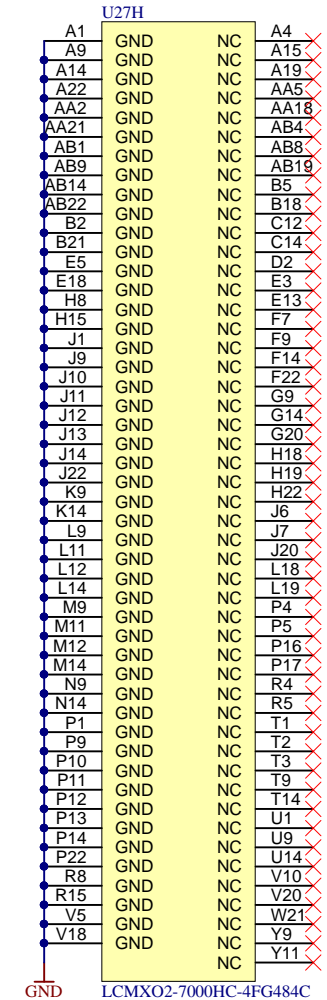
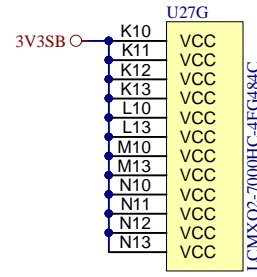
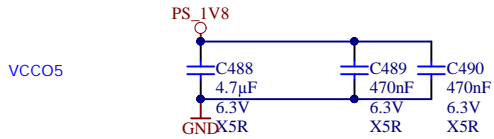
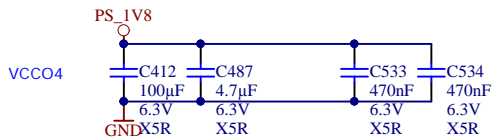
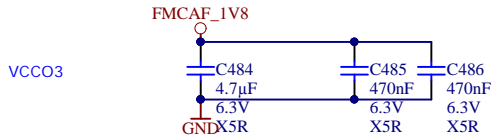
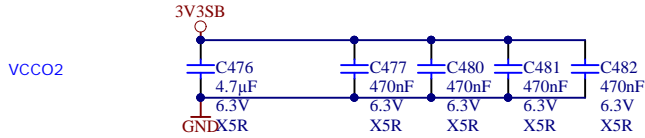
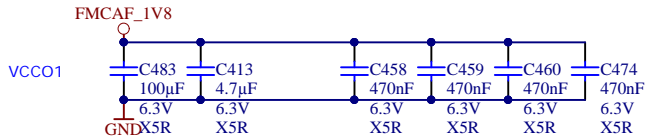
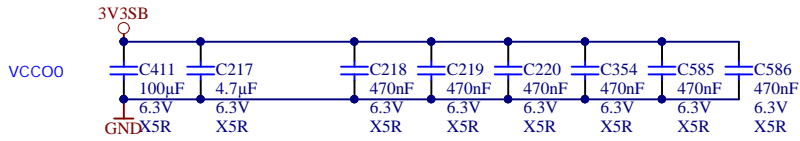
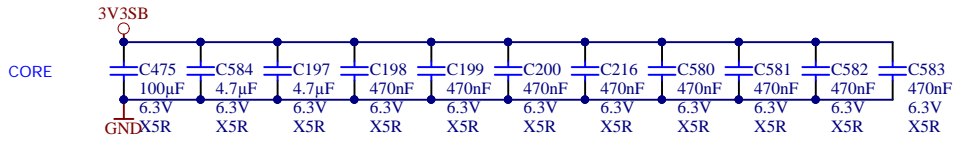
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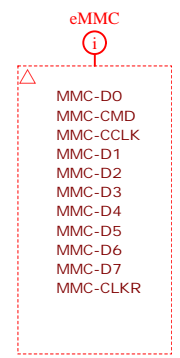
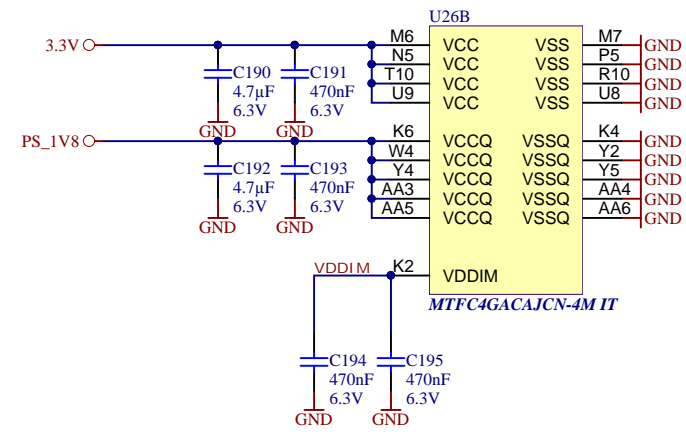
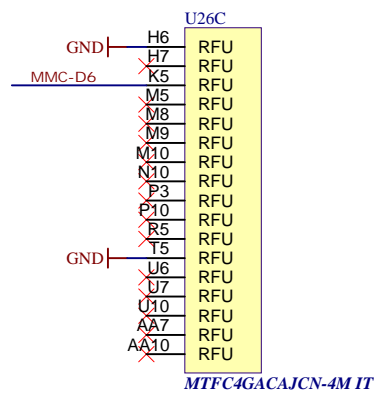
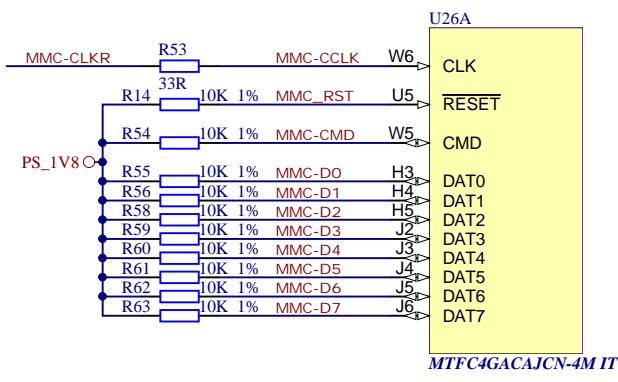
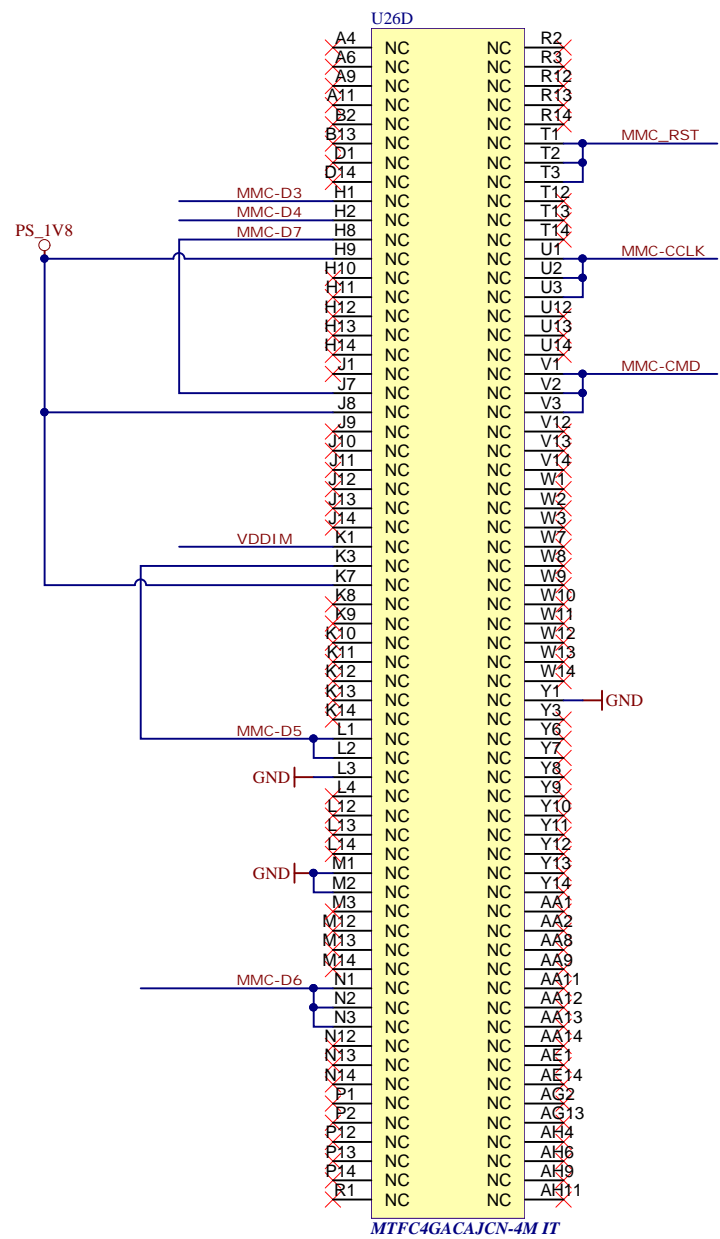
trenz electronic

Title: **TEB0911 - CPLD**

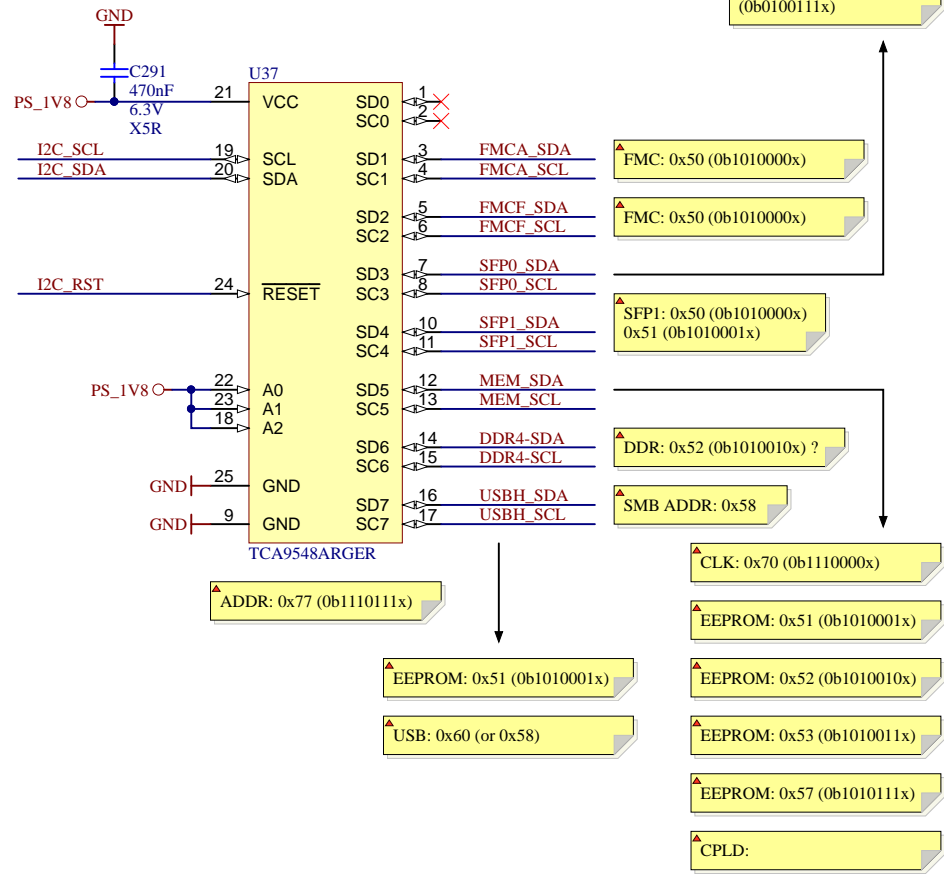
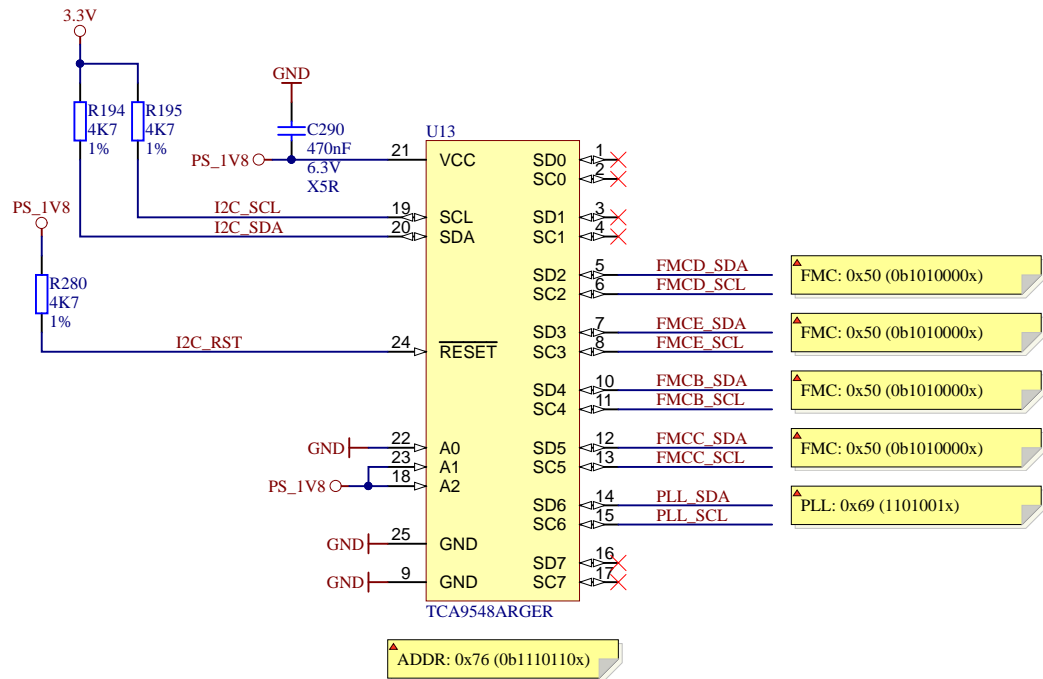
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| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 32 of 58 |
| Filename: SC2.schdoc | | |



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|----------------------------------|---|-----------------------------|
| Title: TEB0911 - CPLD | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 33 of 58 |
| Filename: SC_POWER.schdoc | | |

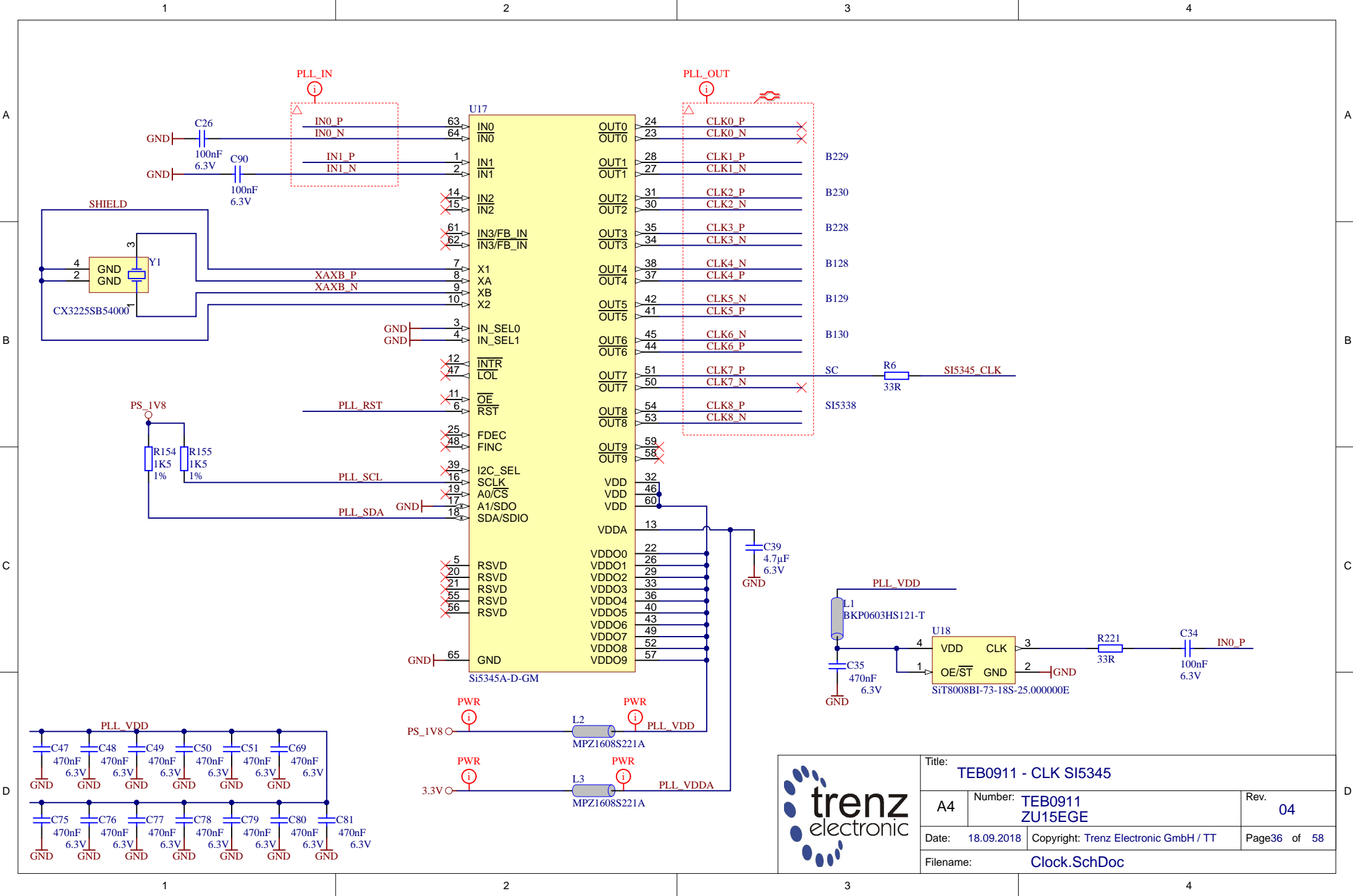



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| Title: TEB0911 - eMMC | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 34 of 58 |
| Filename: eMMC.SchDoc | | |

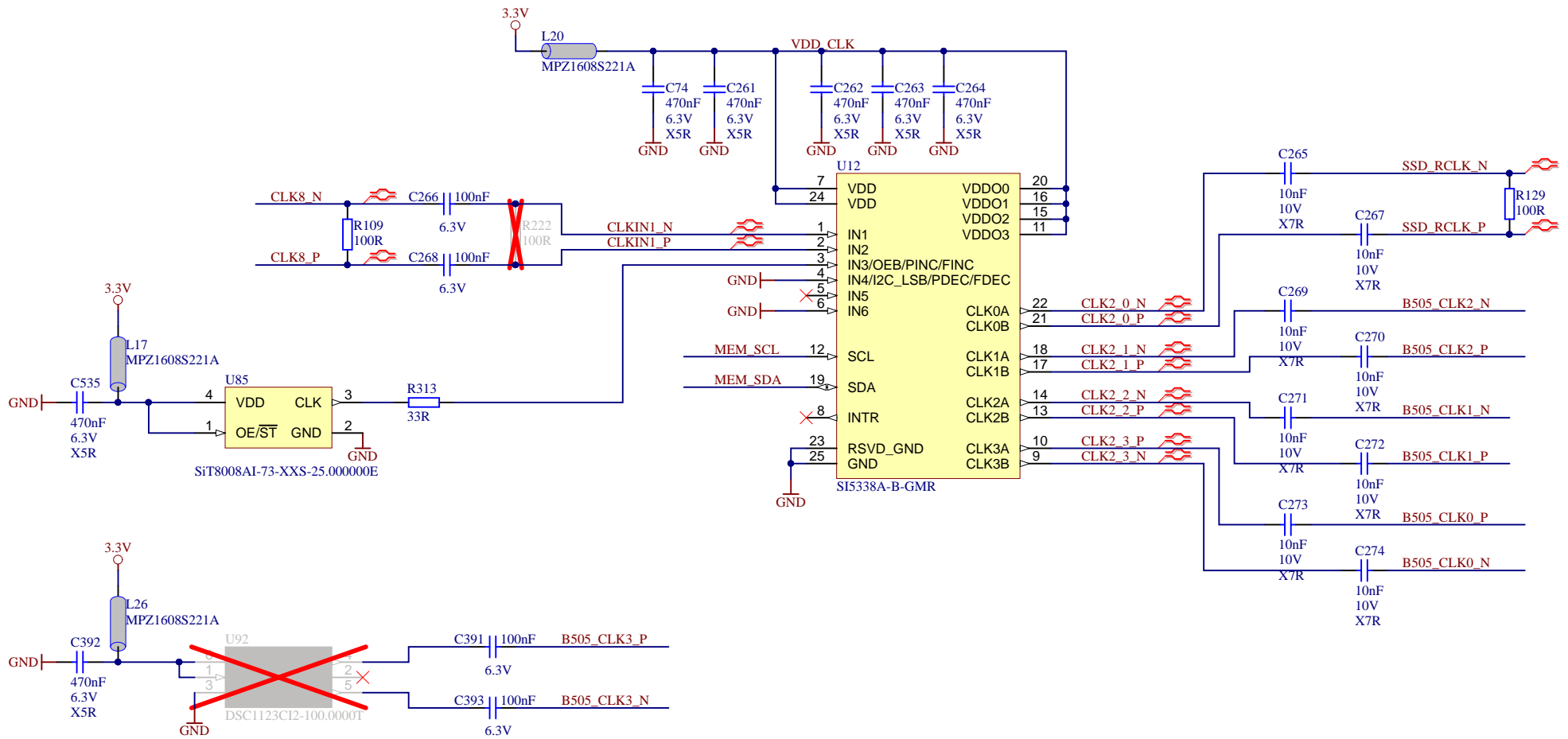



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| Title: TEB0911 - I2C System | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 35 of 58 |
| Filename: I2C_system.schdoc | | |

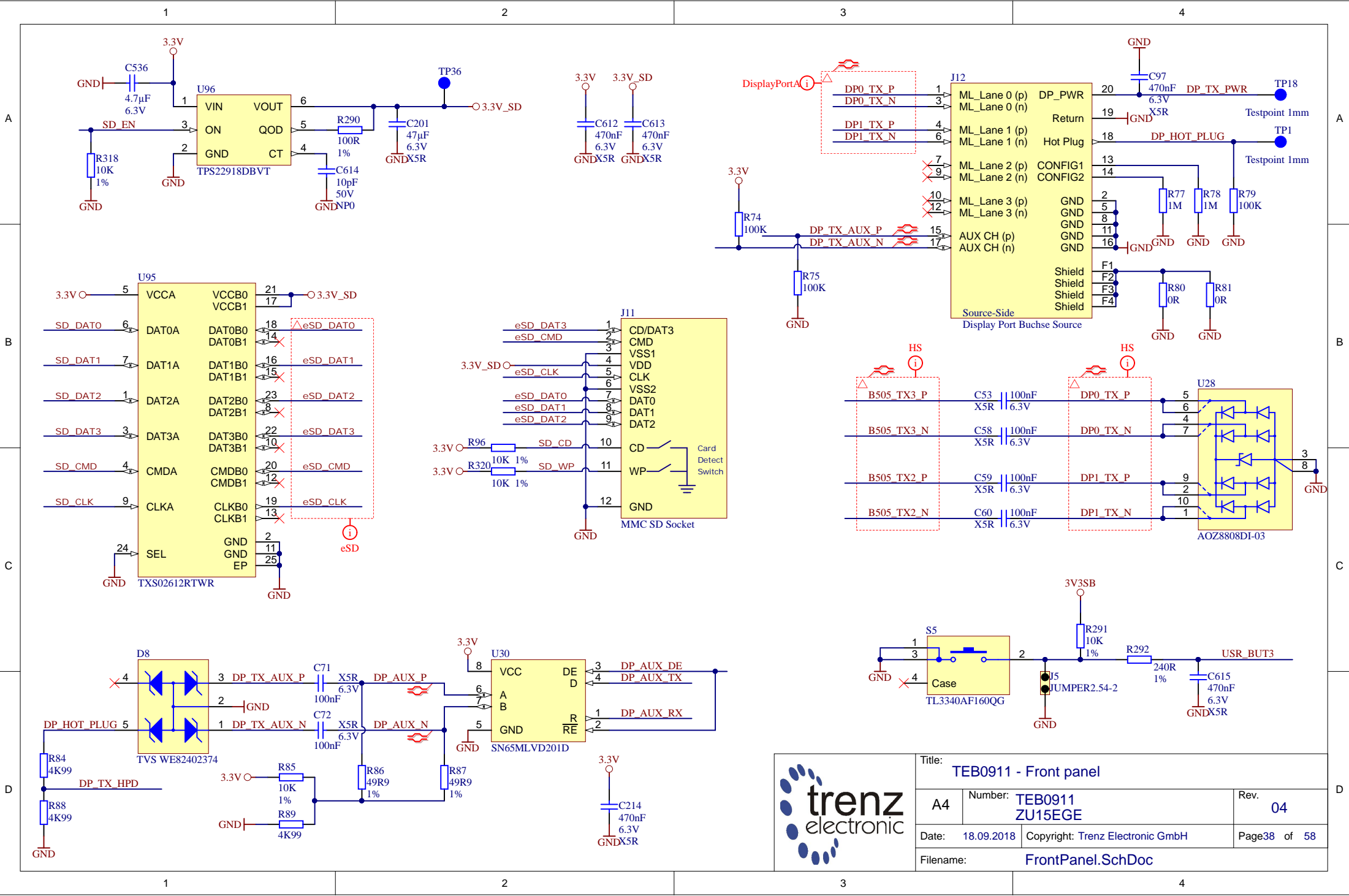




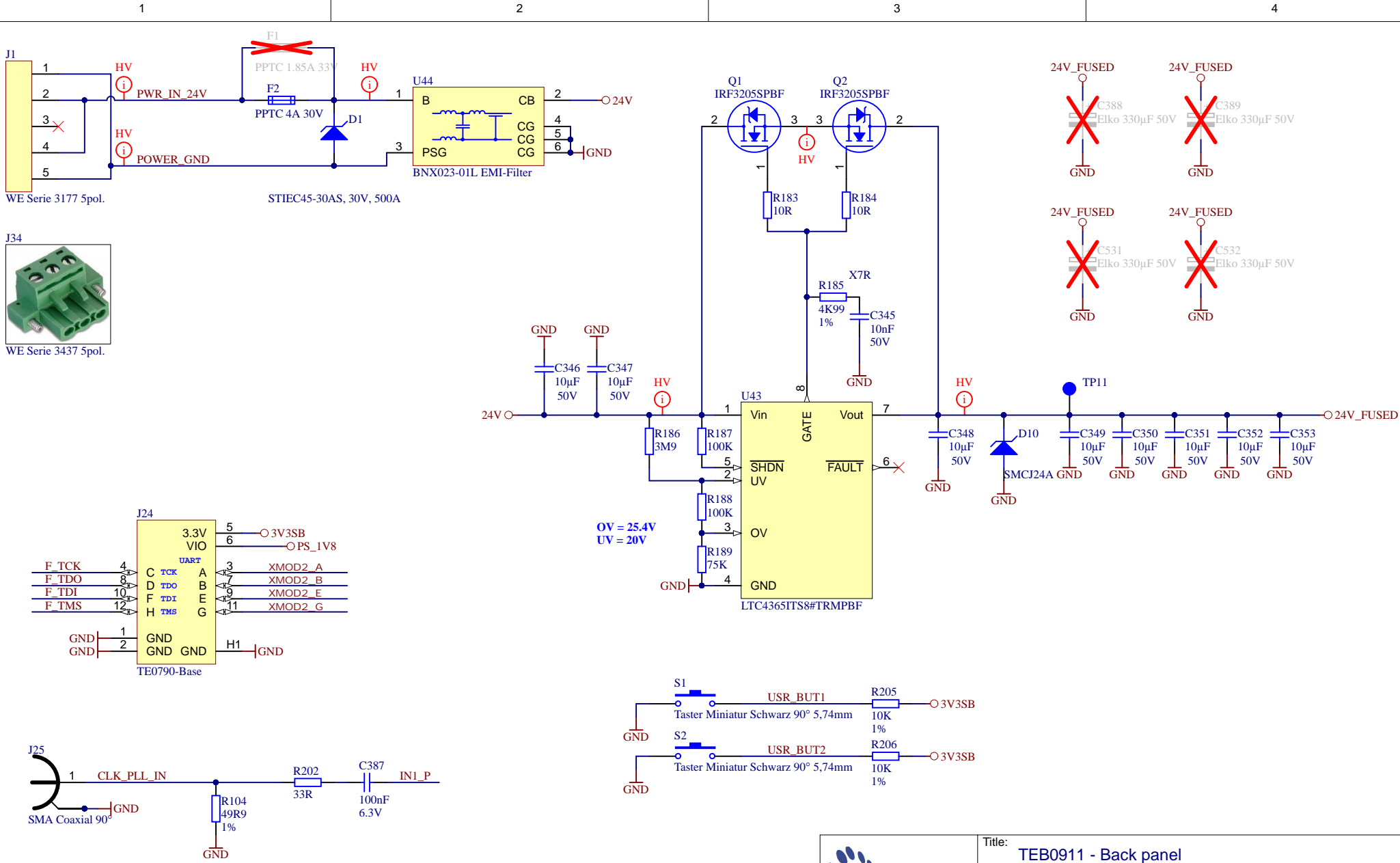
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| A4 | Number: TEB0911 ZU15EGE | | Rev. 04 | |
| Date: 18.09.2018 | | Copyright: Trenz Electronic GmbH / TT | | Page 36 of 58 |
| Filename: Clock.SchDoc | | | | |



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|---|--|----------------------------------|-------------------------|
|  | | Title: TEB0911 - CLK SI5338 | |
| | | A4 | Number: TEB0911 ZU15EGE |
| Date: 18.09.2018 | | Copyright: Trenz Electronic GmbH | |
| Page 37 of 58 | | Filename: Clock2.SchDoc | |



| | | |
|------------------------------|----------------------------------|---------------|
| Title: TEB0911 - Front panel | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 38 of 58 |
| Filename: FrontPanel.SchDoc | | |



| | | |
|-----------------------------|----------------------------------|---------------|
| Title: TEB0911 - Back panel | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 39 of 58 |
| Filename: BackPanel.SchDoc | | |

A

B

C

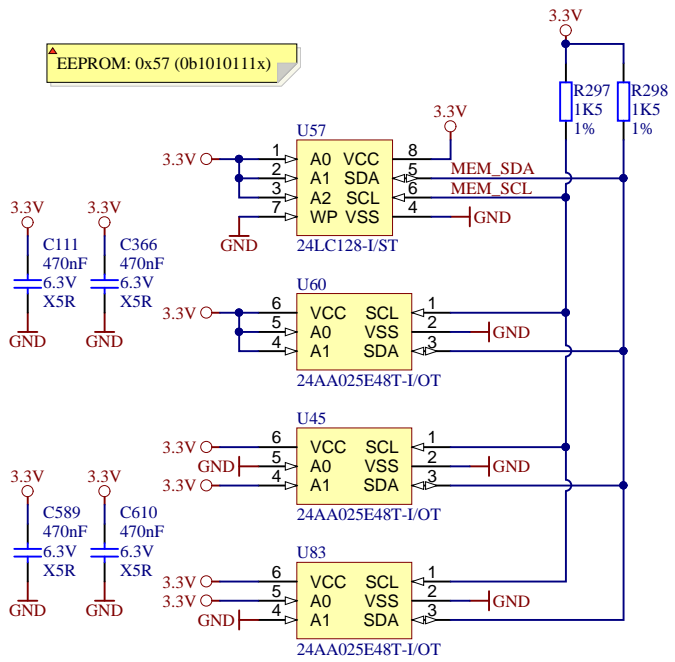
D

A

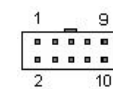
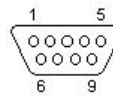
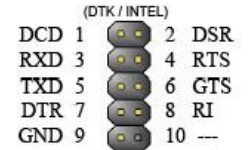
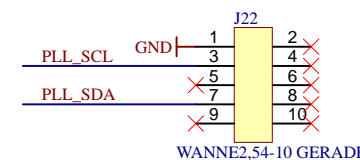
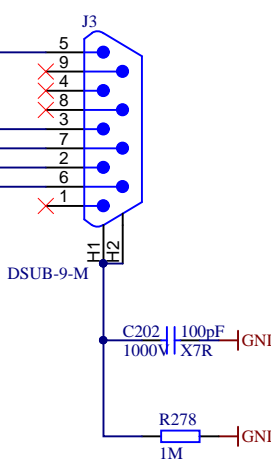
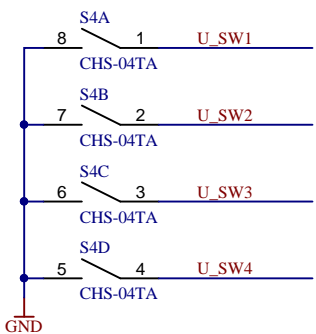
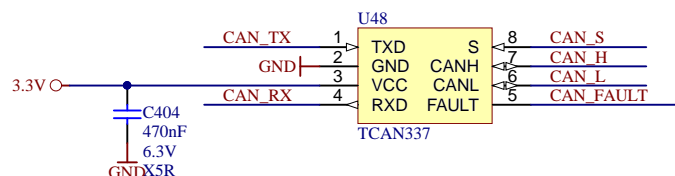
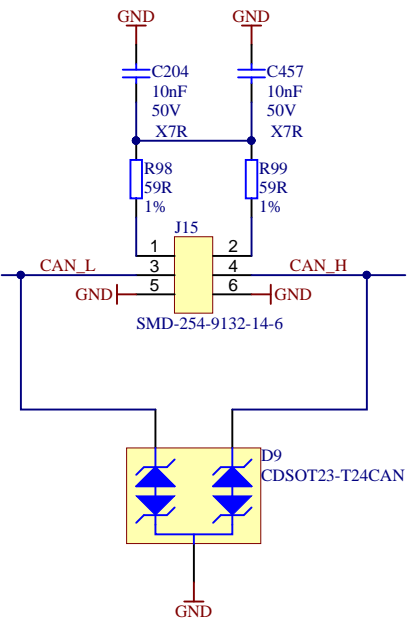
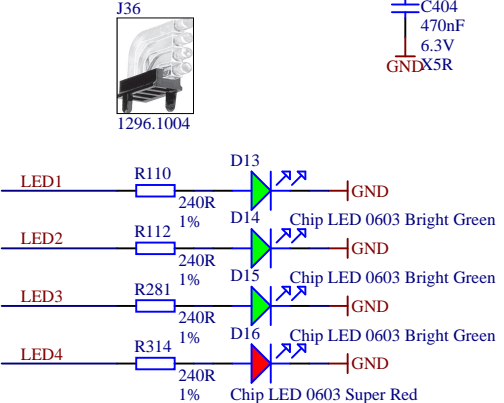
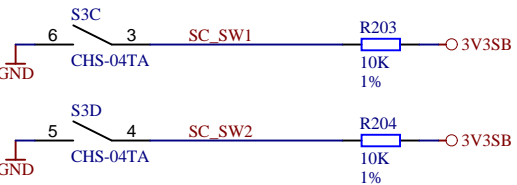
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C

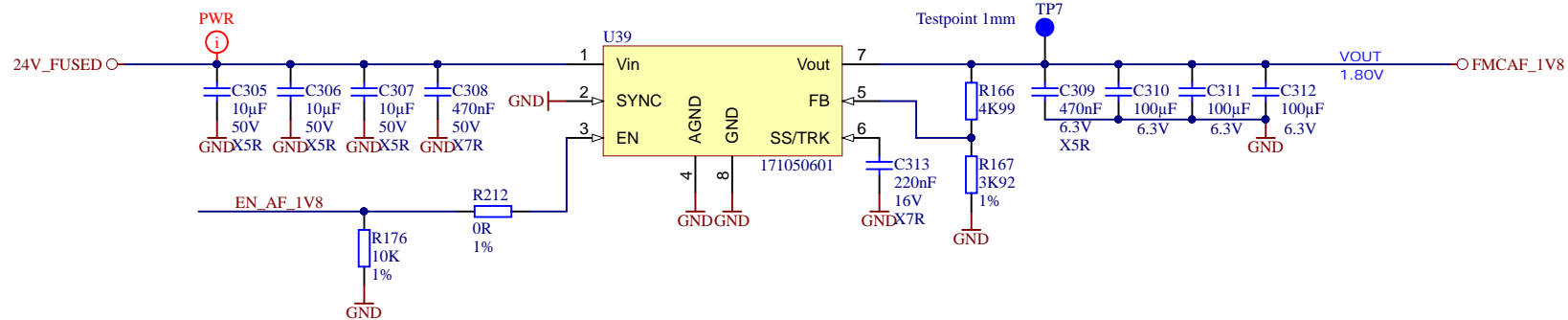
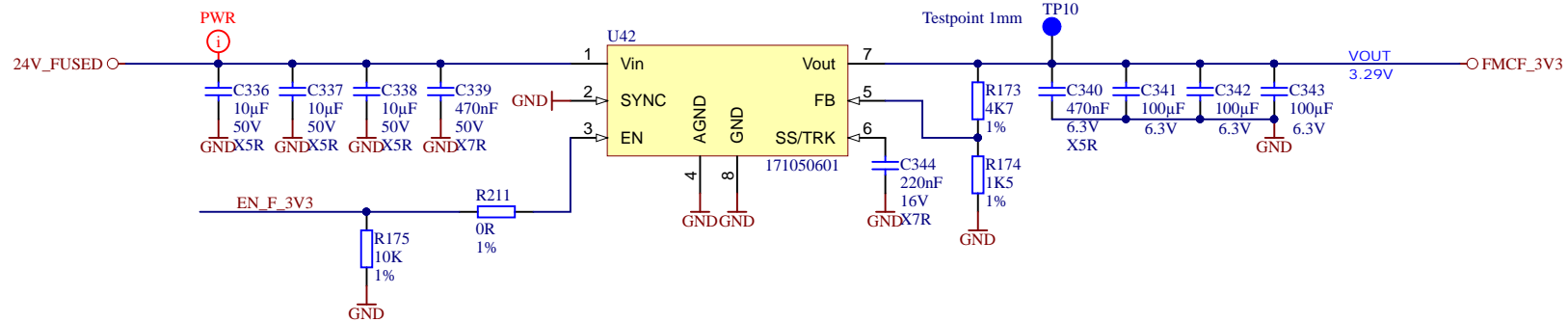
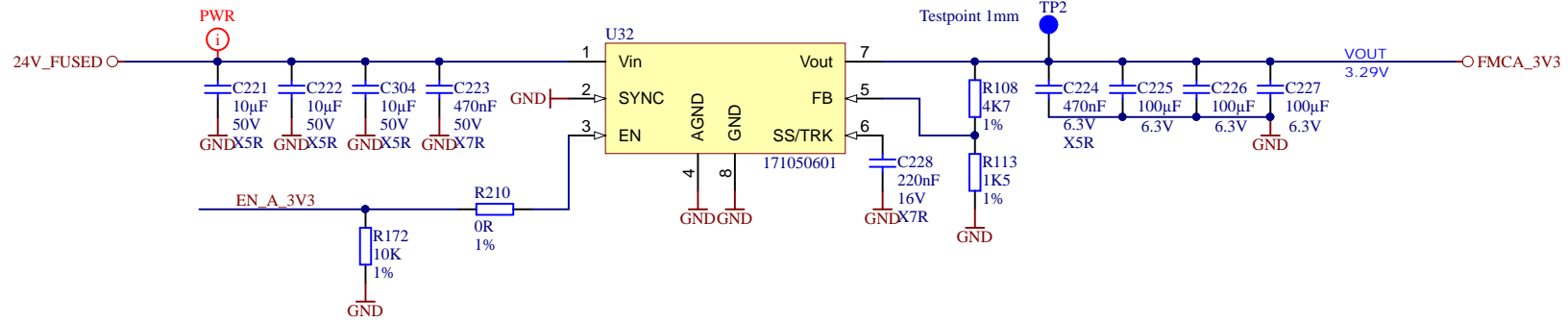
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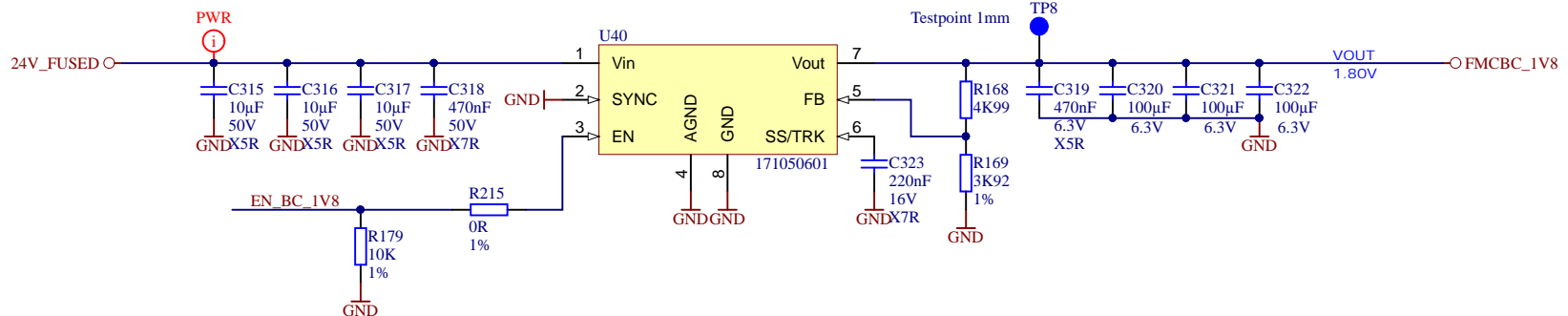
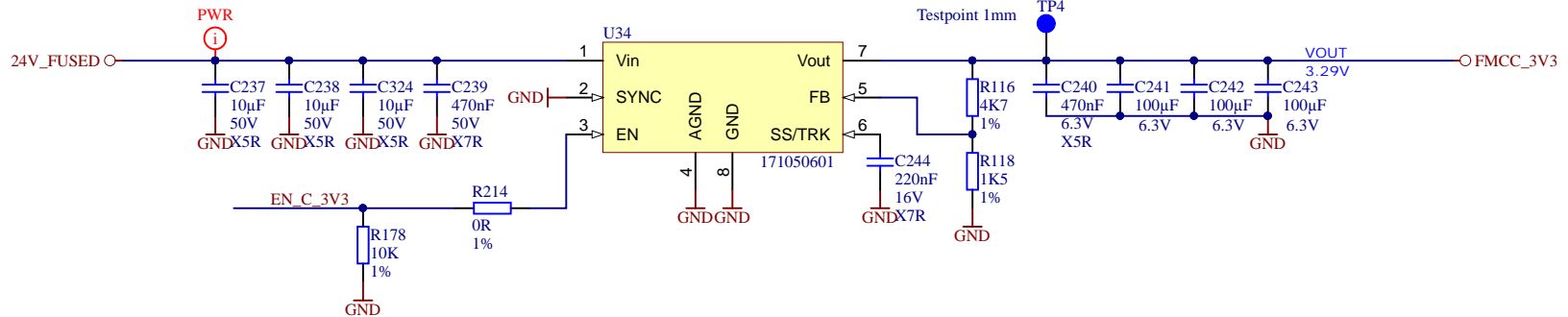
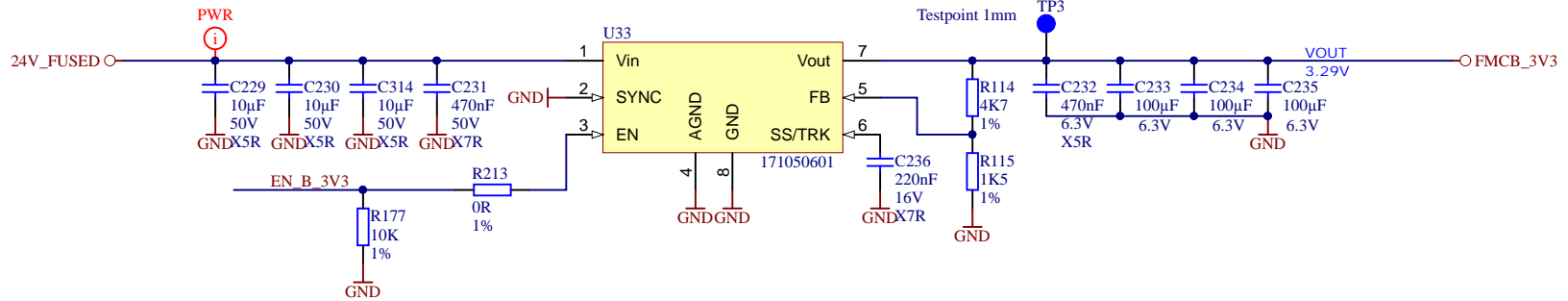
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- EEPROM: 0x51 (0b1010001x)




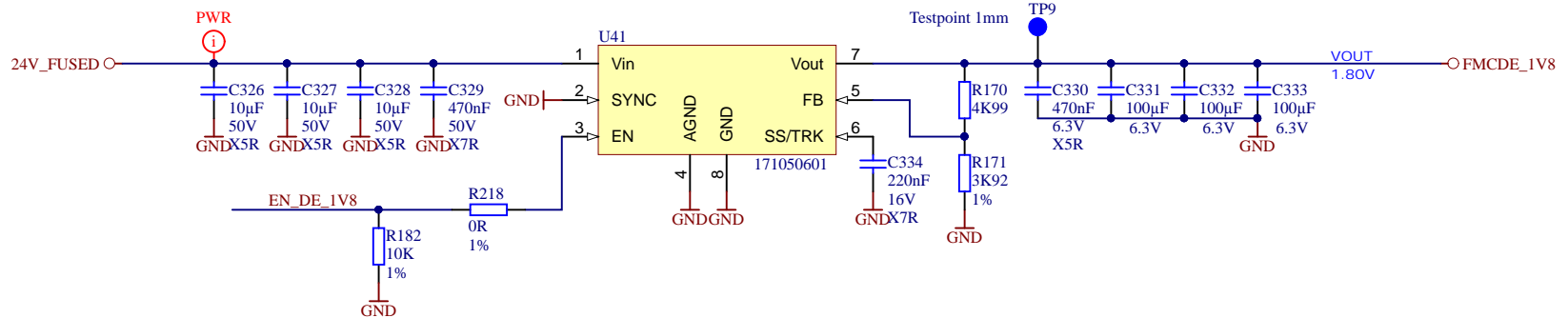
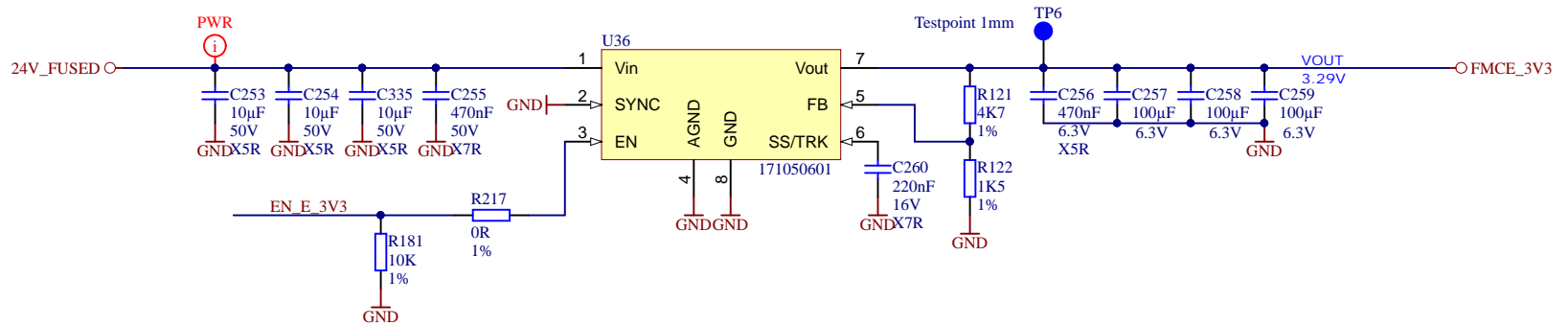
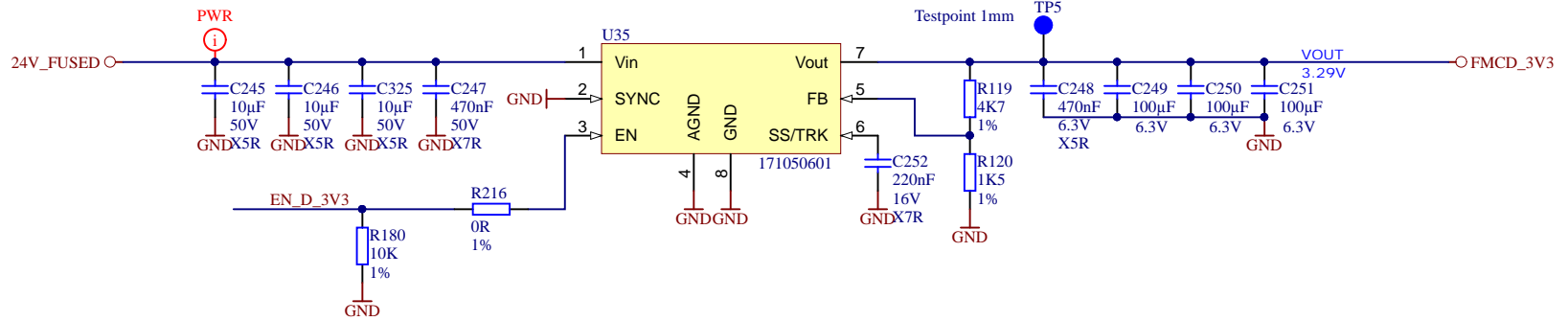
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| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 40 of 58 |
| Filename: MISC.schdoc | | |




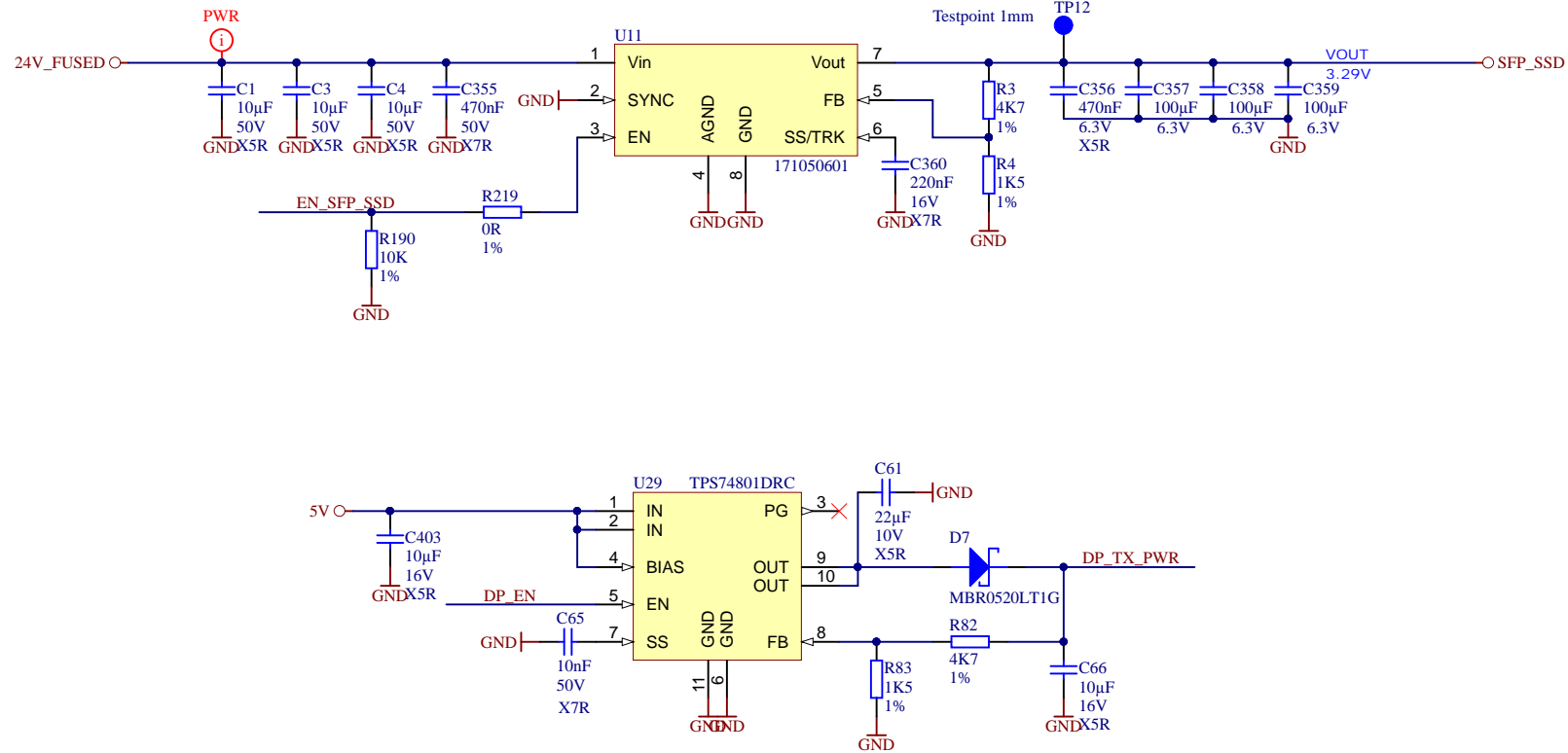
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| | Title: TEB0911 - POWER | | |
| | A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| | Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 41 of 58 |
| | Filename: POWER_1.schdoc | | |




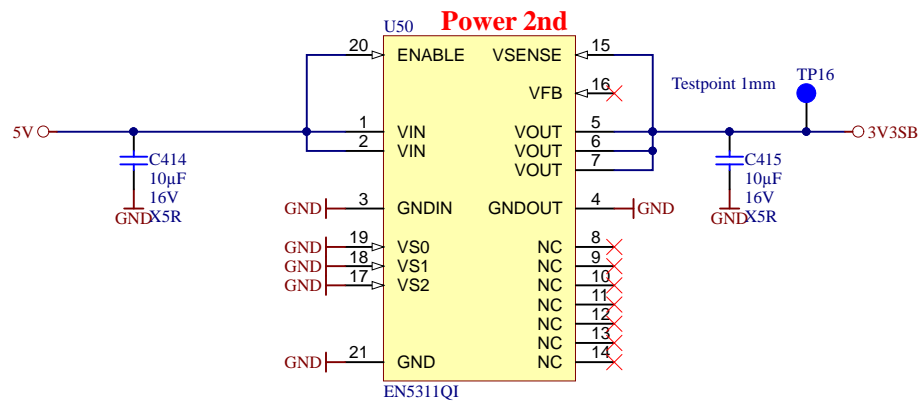
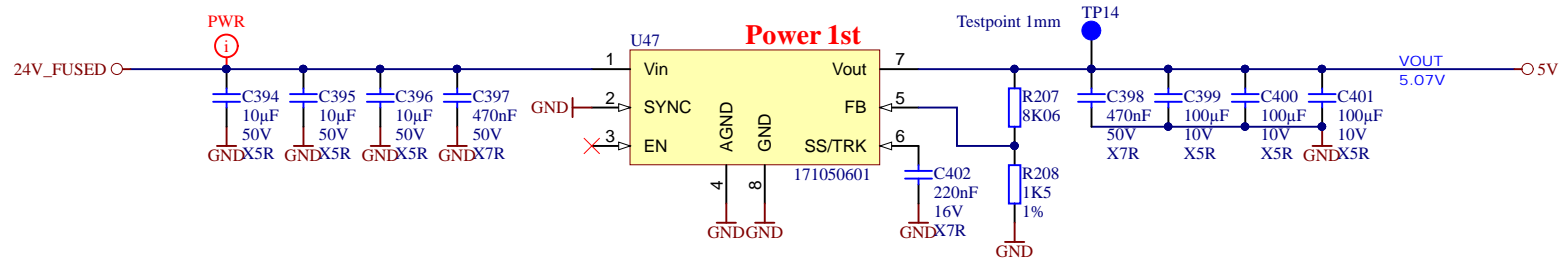
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| | Date: 18.09.2018 | Copyright: Trenz Electronic GmbH |
| | Rev. 04 | Page 42 of 58 |
| Filename: POWER_2.schdoc | | |




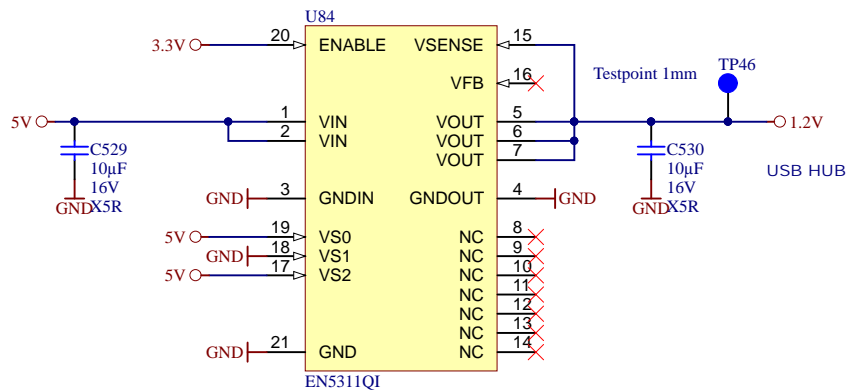
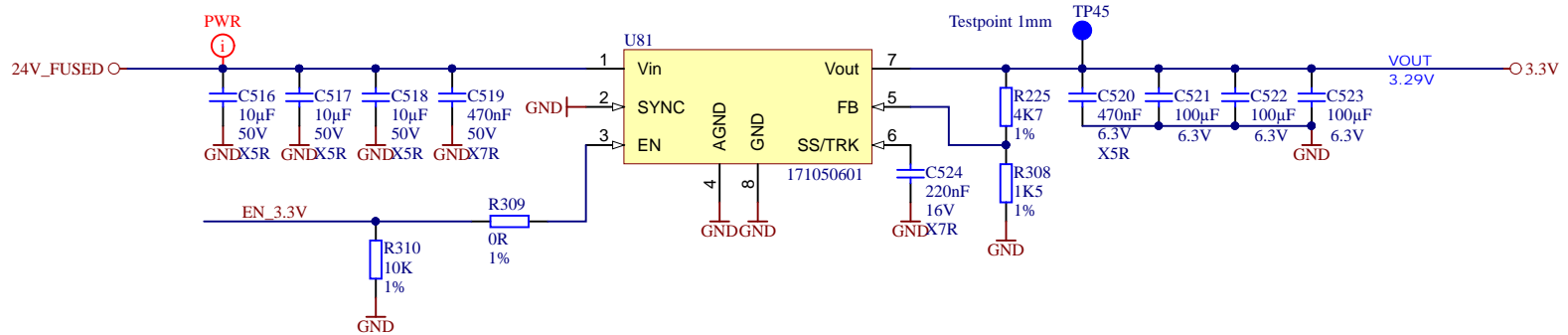
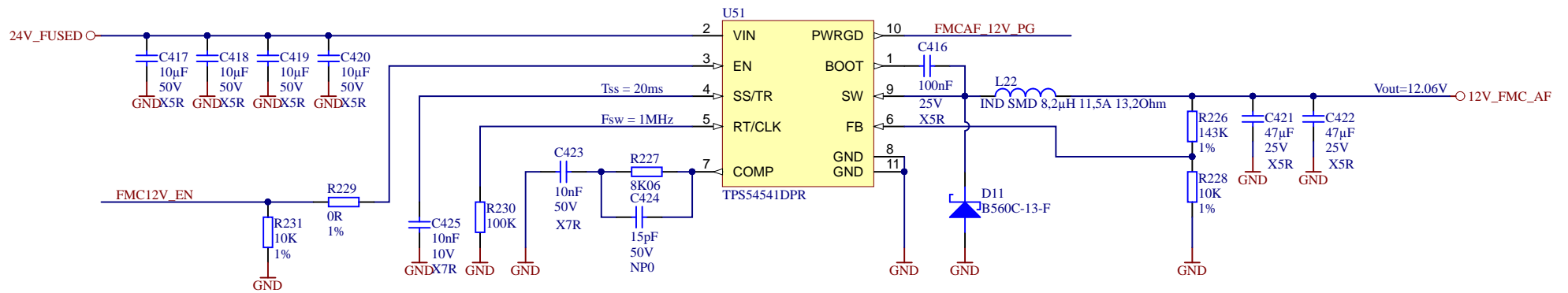
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| Date: 18.09.2018 | | Copyright: Trenz Electronic GmbH | | Page 43 of 58 |
| Filename: POWER_3.schdoc | | | | |




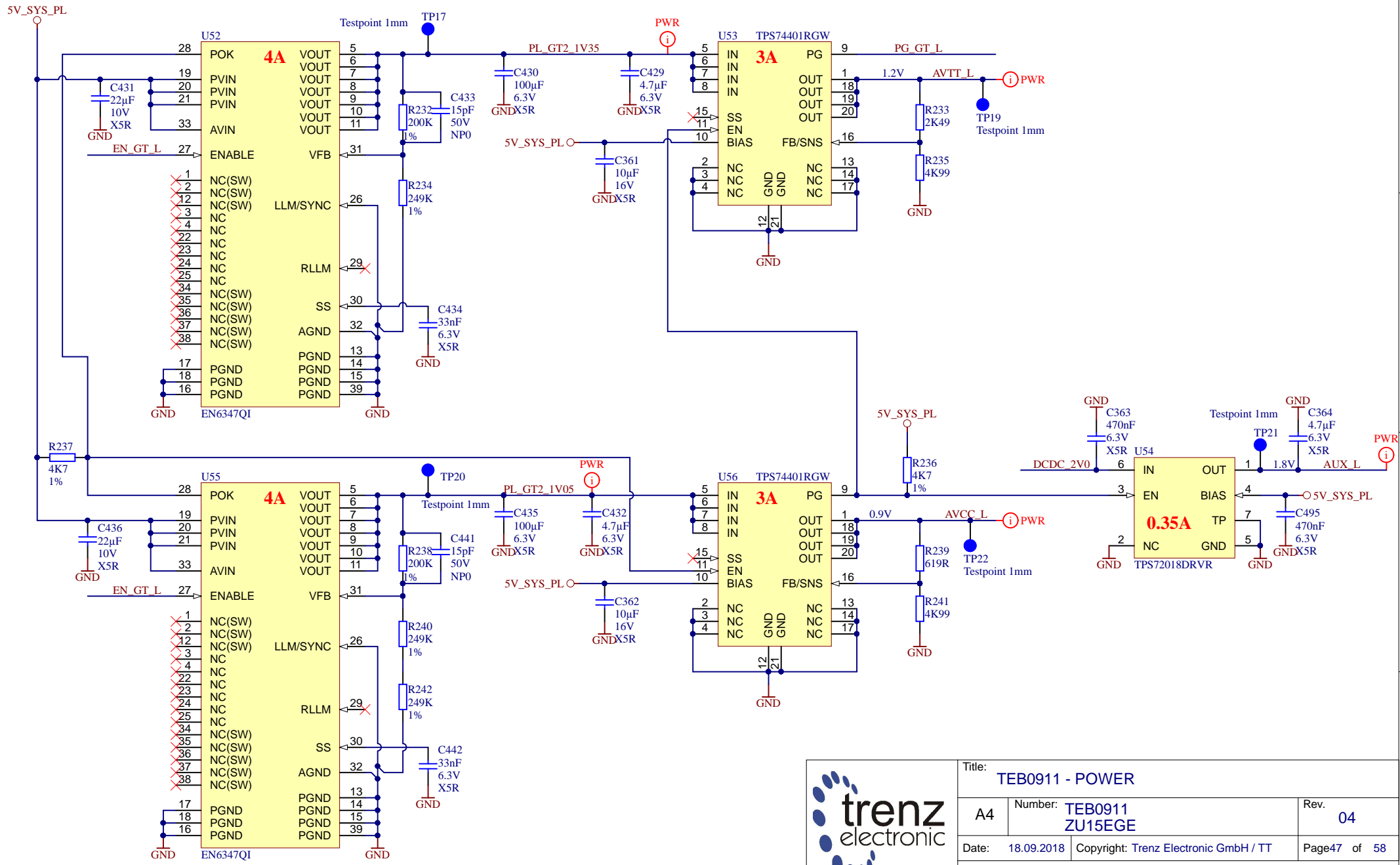
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| Date: 18.09.2018 | | Copyright: Trenz Electronic GmbH | | Page 44 of 58 |
| Filename: POWER_4.schdoc | | | | |



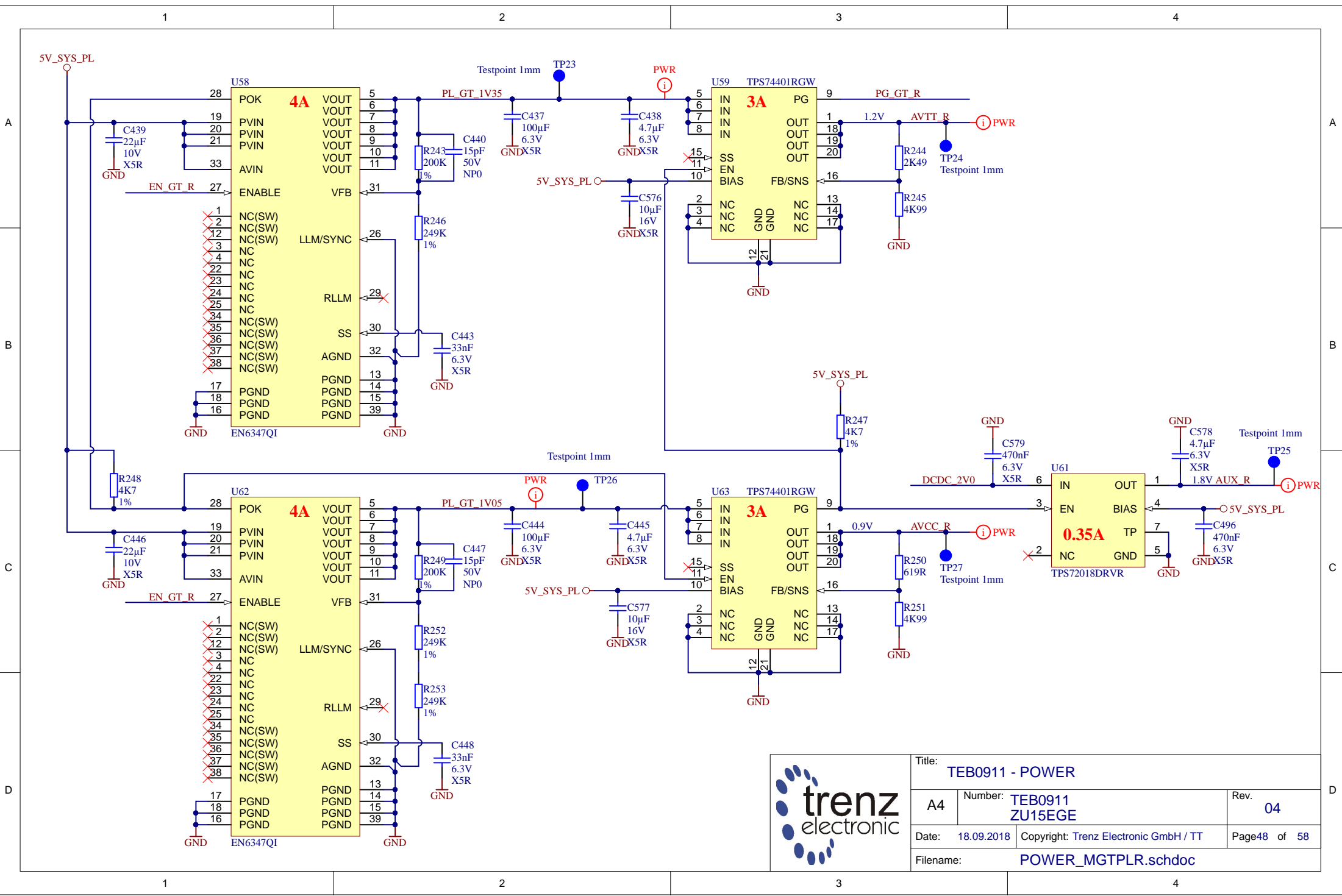
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| | A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| | Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 45 of 58 |
| | Filename: POWER_5.schdoc | | |



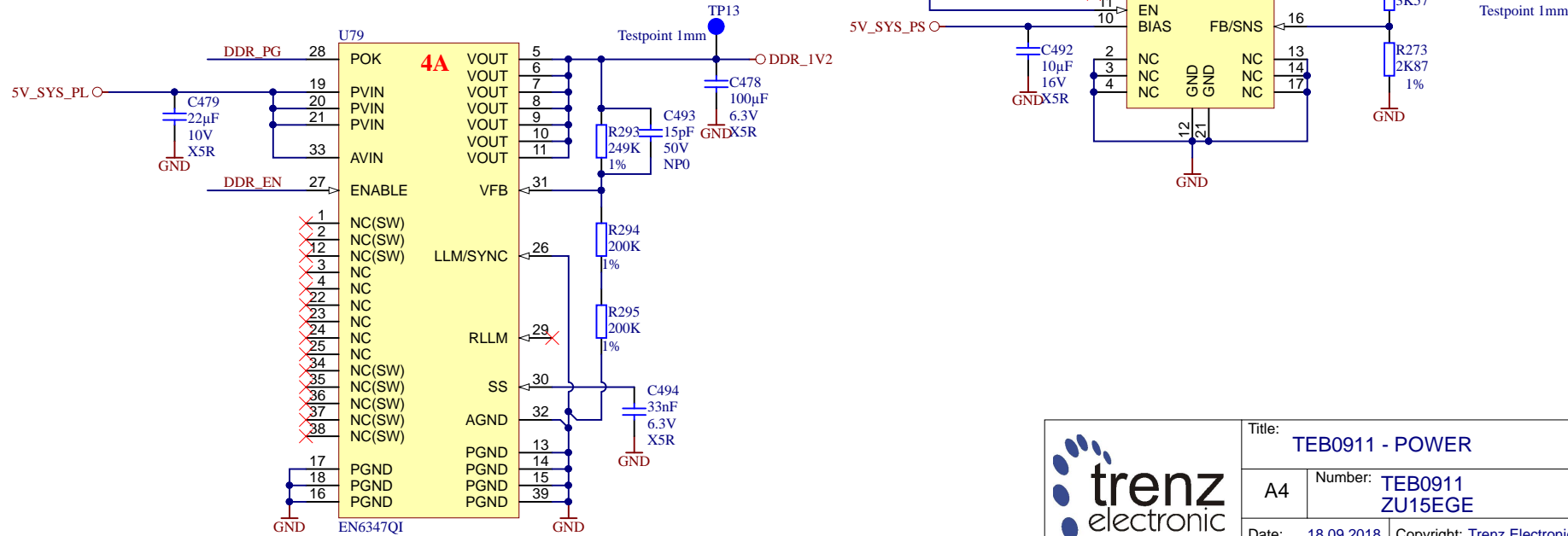
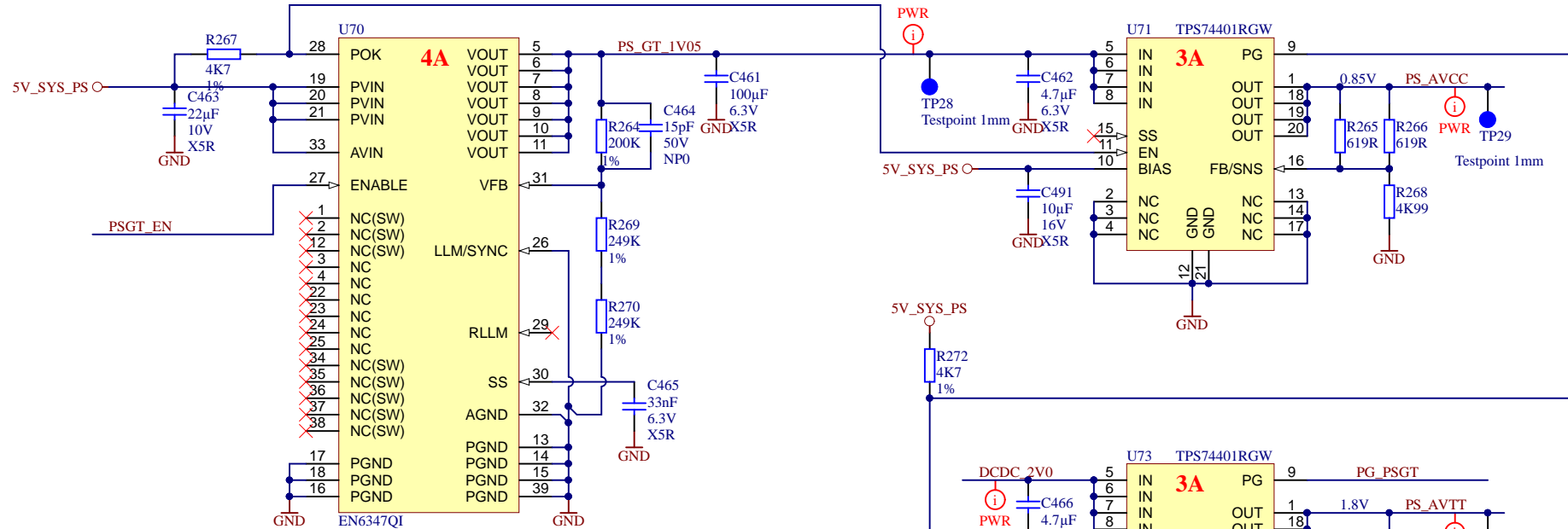
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| Date: 18.09.2018 | | Copyright: Trenz Electronic GmbH | |
| Page 46 of 58 | | Page 46 of 58 | |
| Filename: POWER_6.SchDoc | | | |



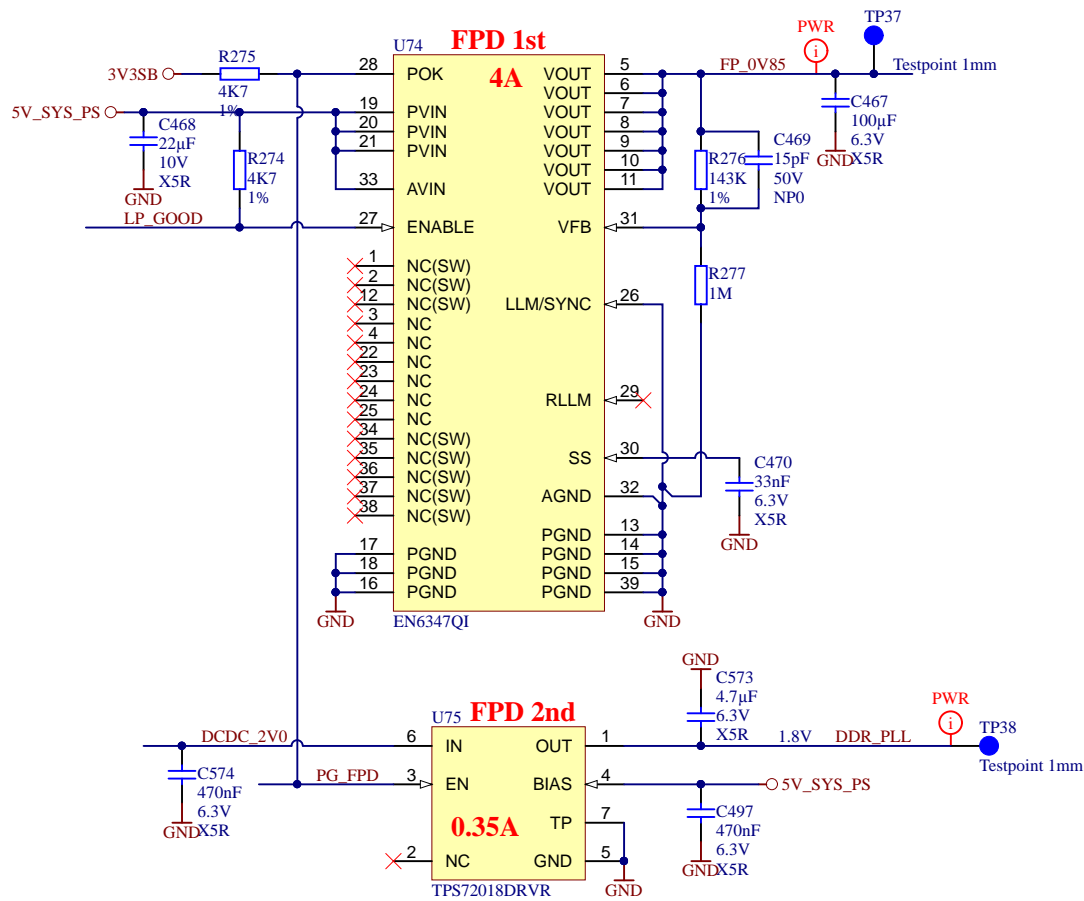
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| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH / TT | Page 47 of 58 |
| Filename: POWER_MGTPLL.schdoc | | |




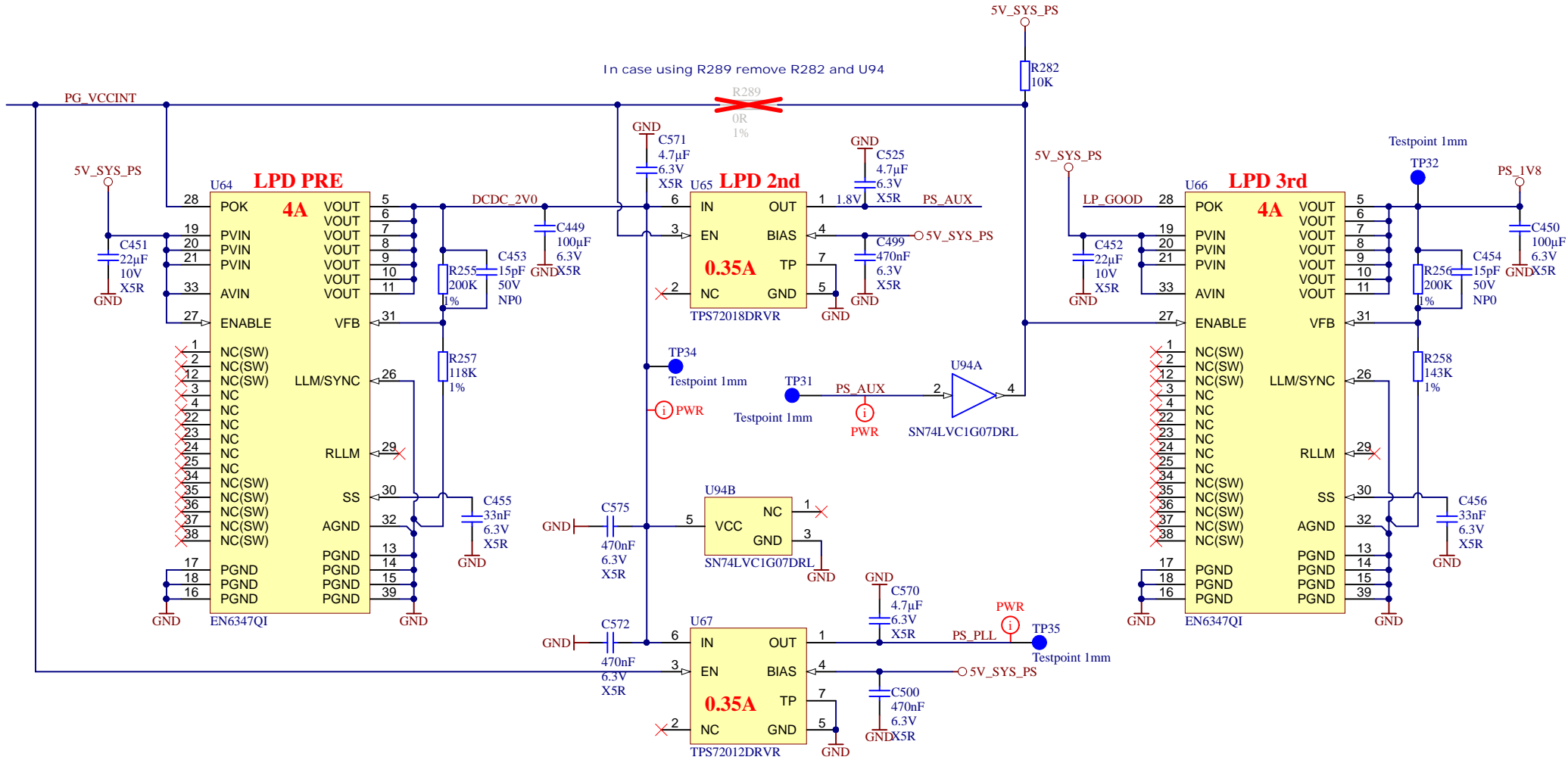
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| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH / TT | Page 48 of 58 |
| Filename: POWER_MGTPLR.schdoc | | |



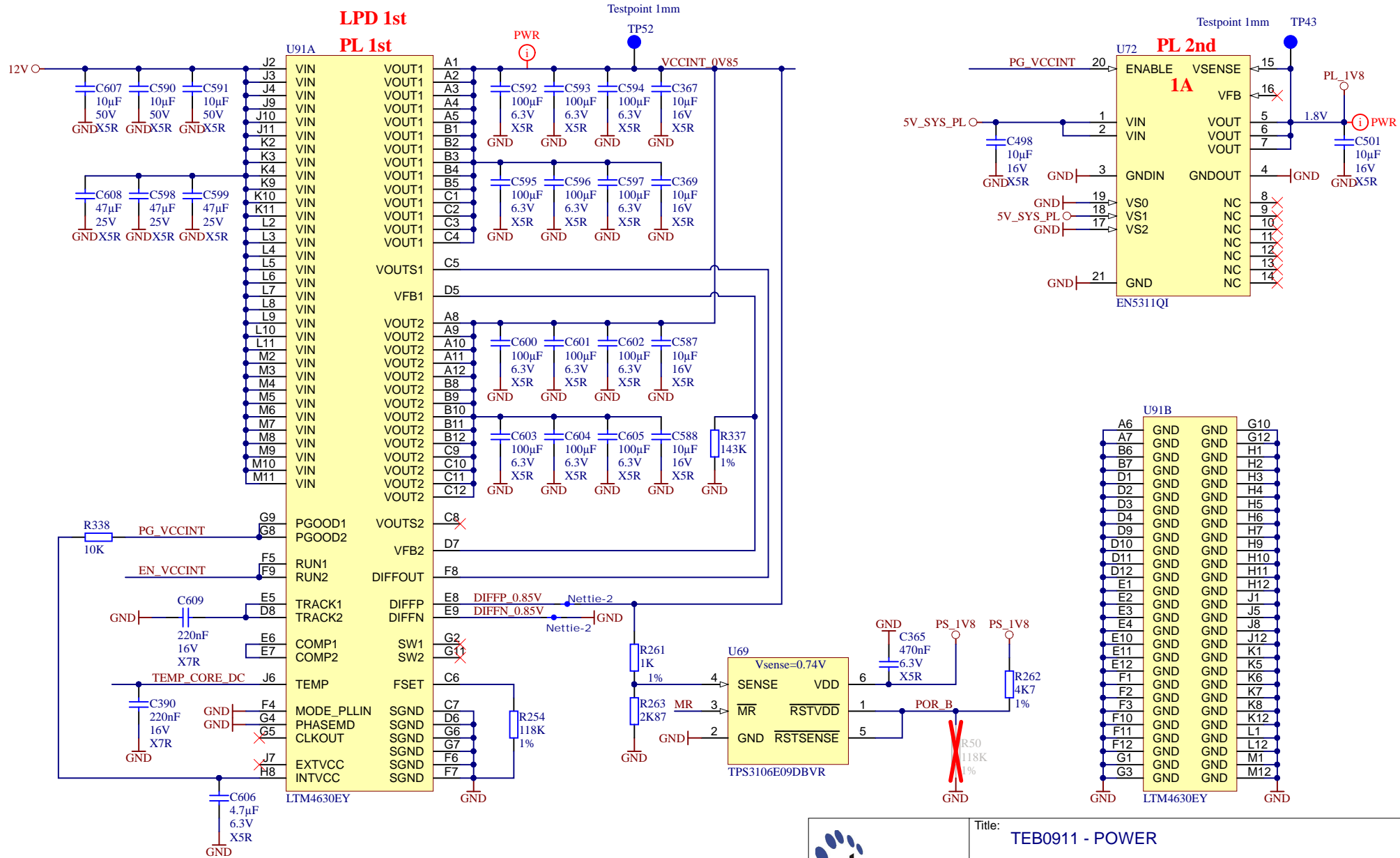
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| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH / TT | Page 49 of 58 |
| Filename: POWER_MGTPS.schdoc | | |



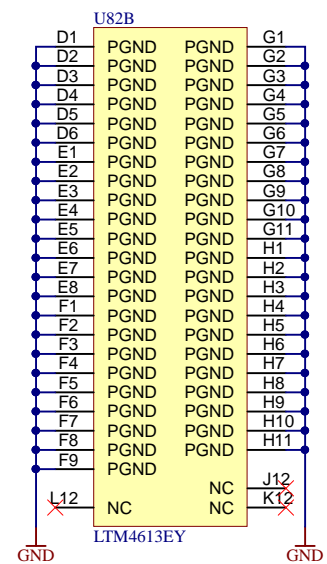
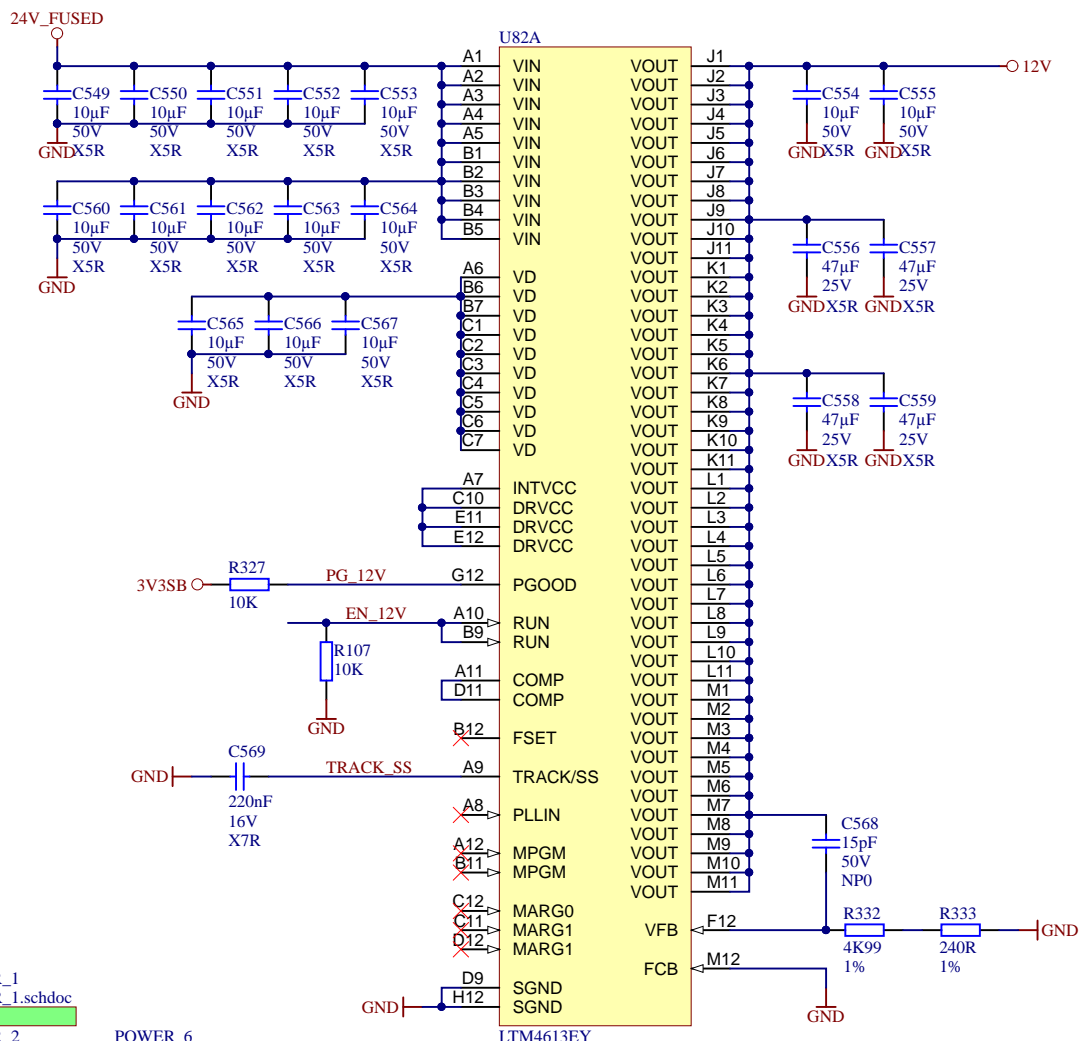
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| | | | A4 | Number: TEB0911 ZU15EGE |
| Date: 18.09.2018 | | Copyright: Trenz Electronic GmbH / TT | | Page50 of 58 |
| Filename: POWER_PSFP.schdoc | | | | |



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|-----------------------------|---------------------------------------|---------------|
| Title: TEB0911 - POWER | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH / TT | Page 51 of 58 |
| Filename: POWER_PSLP.schdoc | | |



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| | Title: TEB0911 - POWER | |
| | A4 | Number: TEB0911 ZU15EGE |
| | Date: 18.09.2018 | Rev. 04 |
| | 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
POWER_5.schdoc
- POWER_6
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- PWR_SYS
PWR_SYS.SchDoc
- PWR_CORE
PWR_CORE.SchDoc



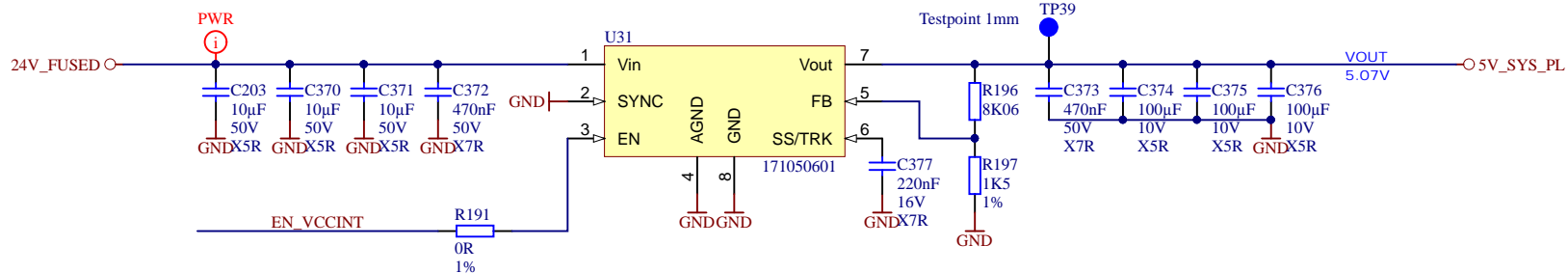
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| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 53 of 58 |
| Filename: PWR_IN.SchDoc | | |

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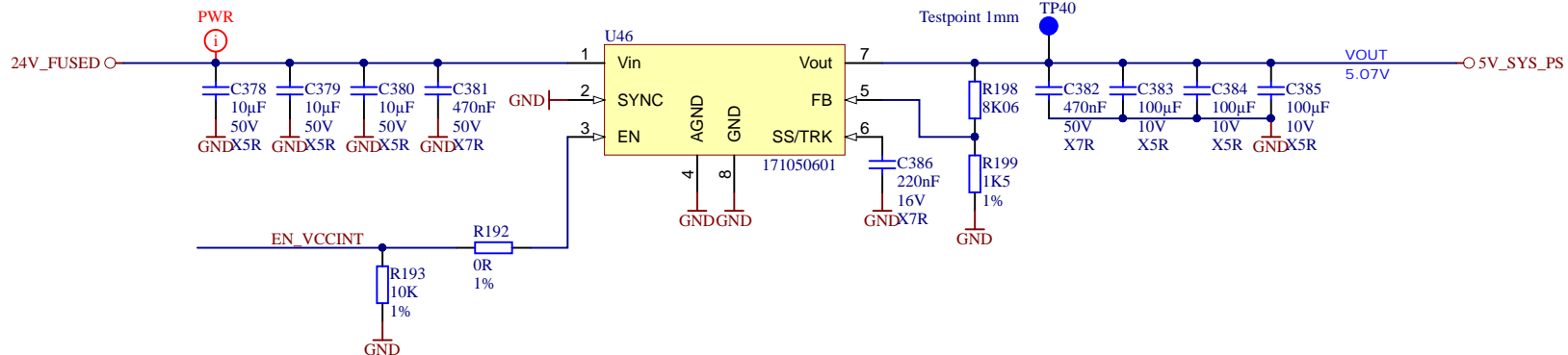
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- POWER_MGTPS
POWER_MGTPS.schdoc
- POWER_MGTPLR
POWER_MGTPLR.schdoc
- POWER_MGTPLL
POWER_MGTPLL.schdoc
- POWER_PSFDP
POWER_PSFDP.schdoc
- POWER_PSLP
POWER_PSLP.schdoc



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| Title: TEB0911 - POWER | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 54 of 58 |
| Filename: PWR_SYS.SchDoc | | |

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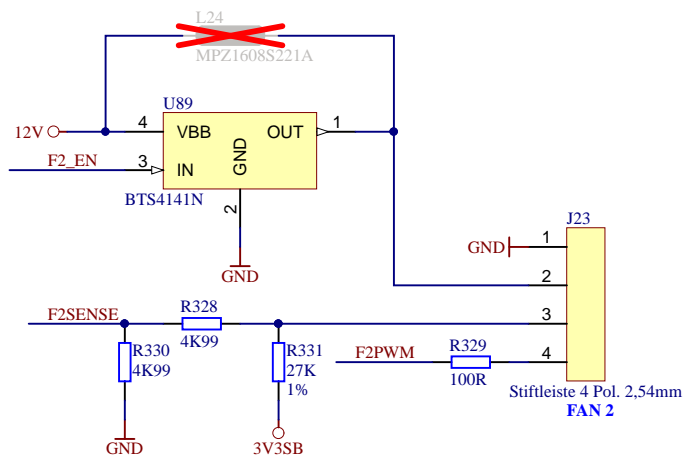
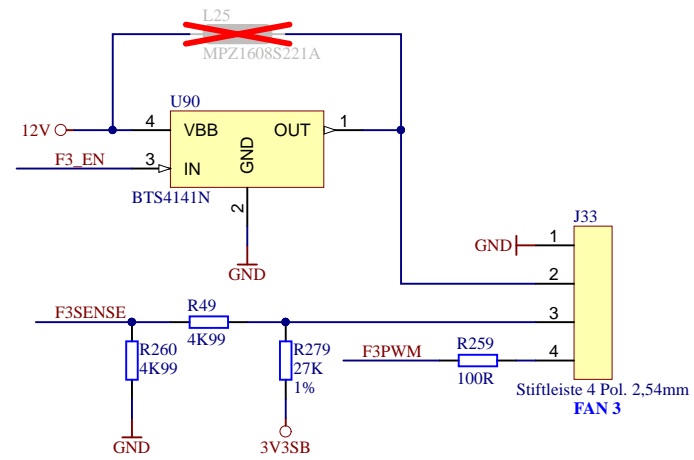
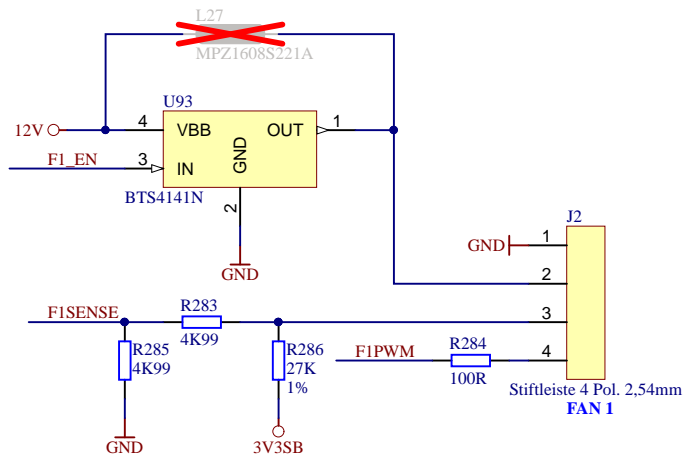
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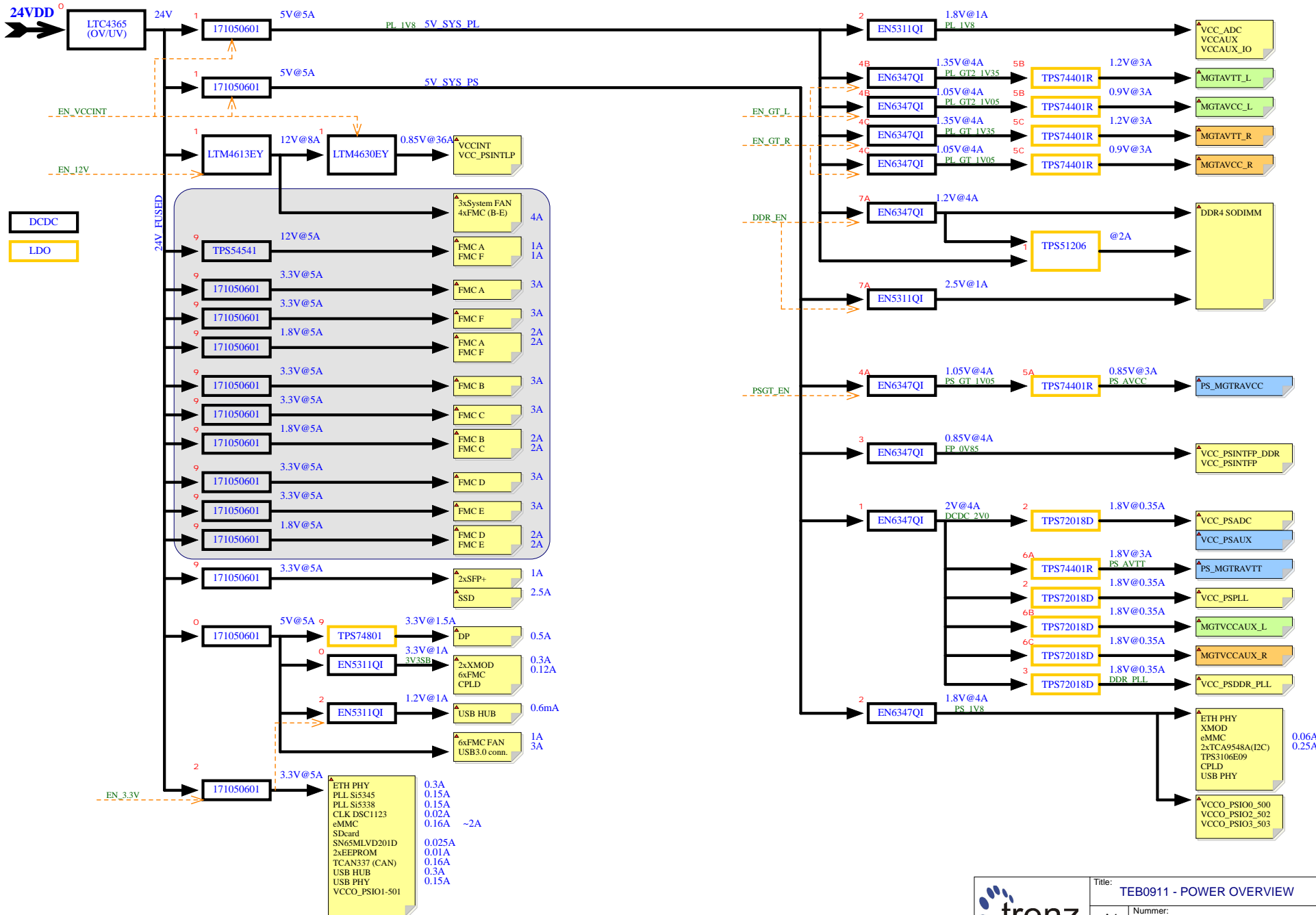
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| Title: TEB0911 - FAN connectors | | |
| A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page55 of 58 |
| Filename: FAN_CON.schdoc | | |

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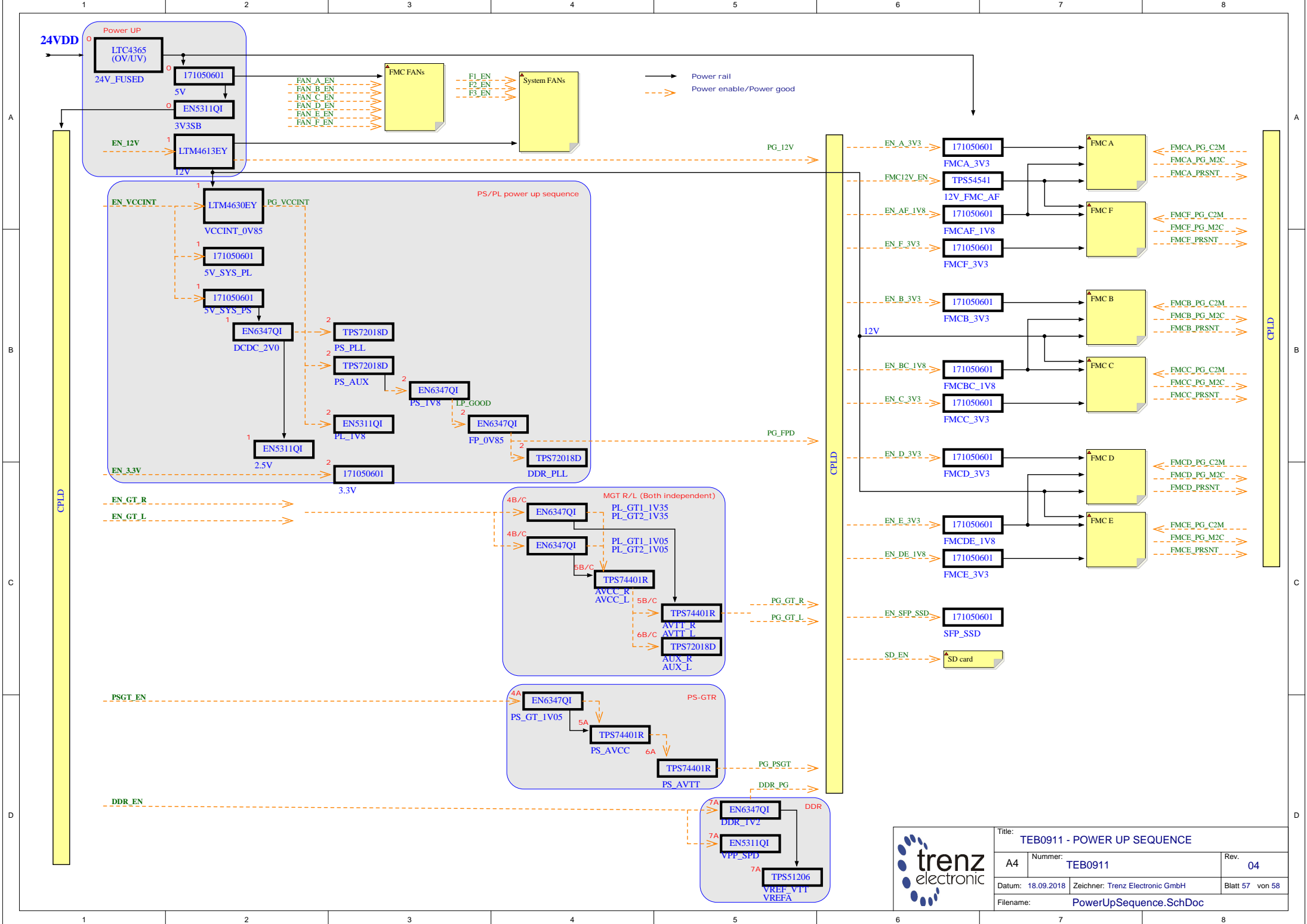
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| Title: TEB0911 - POWER OVERVIEW | | |
| A4 | Number: TEB0911 | Rev. 04 |
| Datum: 18.09.2018 | Zeichner: Trenz Electronic GmbH | Blatt 56 von 58 |
| Filename: Power_overview.SchDoc | | |



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| Title: TEB0911 - POWER UP SEQUENCE | | |
| A4 | Number: TEB0911 | Rev. 04 |
| Datum: 18.09.2018 | 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_T1U_N8_GC_67), C_LA27_N connected to R9 (IO_L11N_T1U_N9_GC_67) of U1 (XCZU9EG-1FFVB1156)

REV03a (17.11.2017):

- 1) Flash N25Q256A11E1240E changed to N25Q512A11G1240E.

REV04:

- 1) Added SDIO level translator TXS02612RTWR (U95) and 33Ω series resistors on SDIO lines from FPGA side.
- 2) Added user button S5 and jumper J5 (connected to U27 pin W17).
- 3) New FAN switches U76-78/U97-99: BTS4141N.
- 4) New FANs: AFB04512MA. Was added an option to use 5V or 12V (default) power rail.
- 5) Replaced EOL components:
 - TPS27082LDDCR -> TPS22918DBVT (U96)
 - ESD3V3U4ULCE6327XTSA1 -> AOZ8808DI-03 (U28)
- 6) New SFP+ connector: 2007492-5 instead of 1-2007492-5

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|  | Title: TEB0911 - REVISION CHANGES | | |
| | A4 | Number: TEB0911 ZU15EGE | Rev. 04 |
| | Date: 18.09.2018 | Copyright: Trenz Electronic GmbH | Page 58 of 58 |
| | Filename: Revision_changes.SchDoc | | |