

1

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U_SOC
SOC.SchDoc

U_DDR3-RAM
DDR3-RAM.SchDoc

U_CPLD
CPLD.SchDoc

U_USB-PHY
USB-PHY.SchDoc

U_ETH1
ETH1.SchDoc

U_Clock
Clock.SchDoc

U_eMMC
eMMC.SchDoc

U_POWER2
POWER2.SchDoc

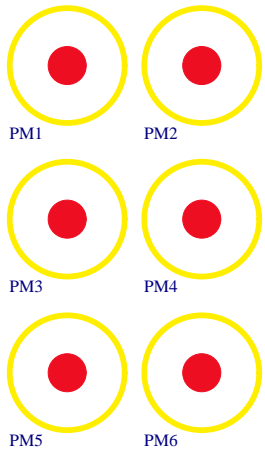
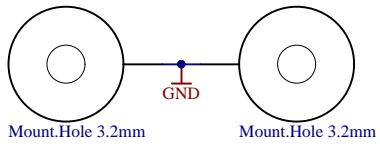
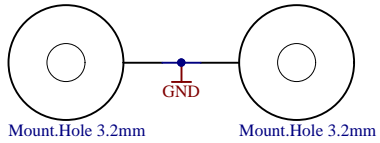
U_Connectors
Connectors.SchDoc

U_Rev_changes
Revision Changes.SchDoc

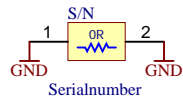
U_POWER
POWER.SchDoc

U_POWER3
POWER3.SchDoc

LOGO1
TE Logo PRINT Layer
LOGO PRINT



Serial
Serialnumber 6,3 x 6.3mm



Title: Overview		
A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page1 of 32
Filename: TE0783.SchDoc		

1

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A

A

B

B

C

C

D

D

1

2

3

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A

A

U_HSMC_CONN_J1
HSMC_CONN_J1.SchDoc



U_HSMC_CONN_J2
HSMC_CONN_J2.SchDoc



U_HSMC_CONN_J3
HSMC_CONN_J3.SchDoc



B

B

C

C

D


D

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			Title: Connectors		
			A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018		Copyright: Trenz Electronic GmbH		Page 2 of 32	
Filename: Connectors.SchDoc					

1

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A

A

B

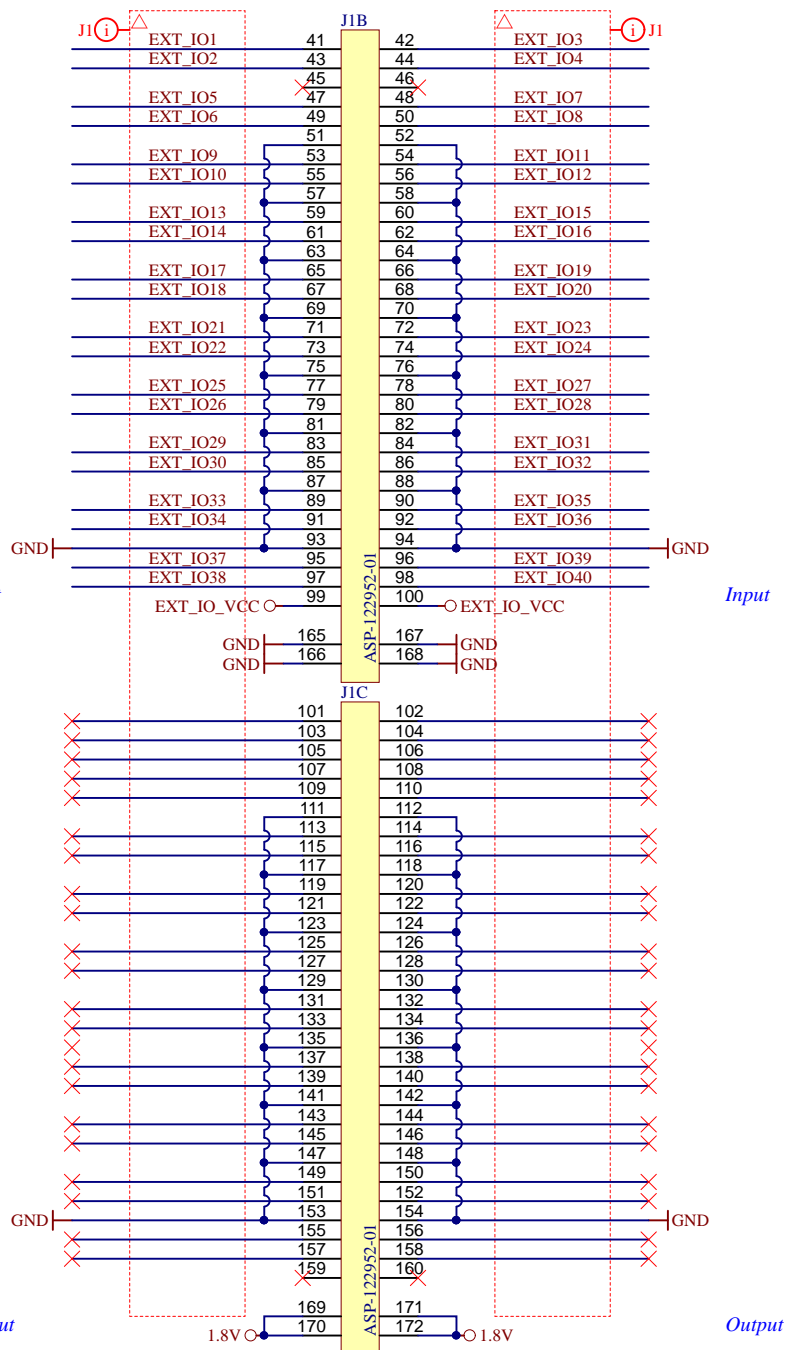
B

C

C

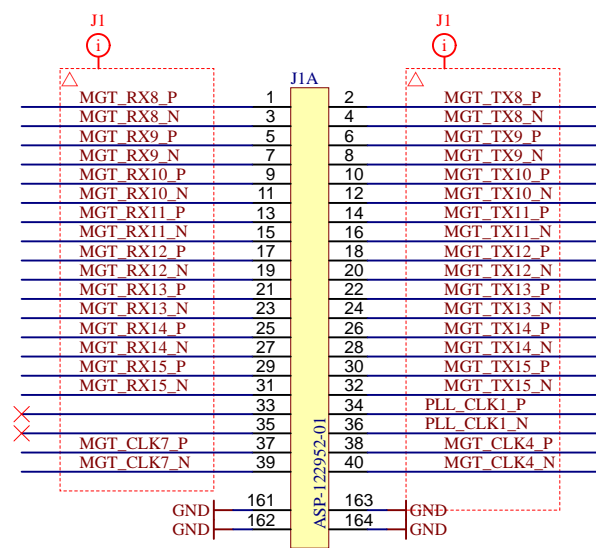
D

D



Next signals has different functionality in TE0782 and TEBT0782.

TE0782
 J1_TX20_N
 J1_TX20_P
 J1_TX21_N
 J1_TX21_P



Next signals has different functionality in TE0782 and TEBT0782.

TE0782
 J1_RX20_N
 J1_RX20_P



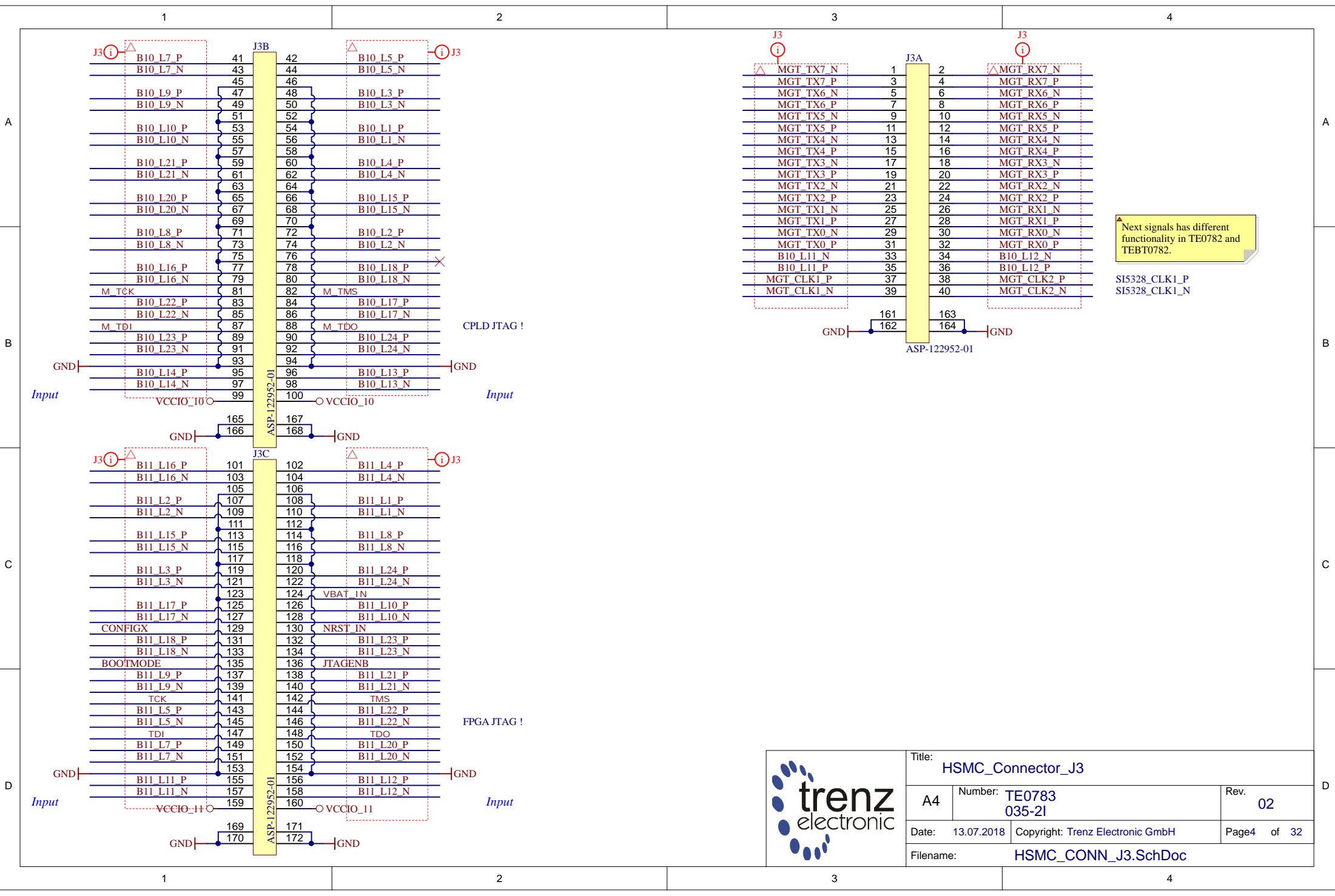
Title: HSMC_Connector_J1		
A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 3 of 32
Filename: HSMC_CONN_J1.SchDoc		

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▲ Next signals has different functionality in TE0782 and TEBT0782.

S15328_CLK1_P
S15328_CLK1_N



Title: HSMC_Connector_J3		
A4	Number: TE0783 035-21	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page4 of 32
Filename: HSMC_CONN_J3.SchDoc		

A

B

C

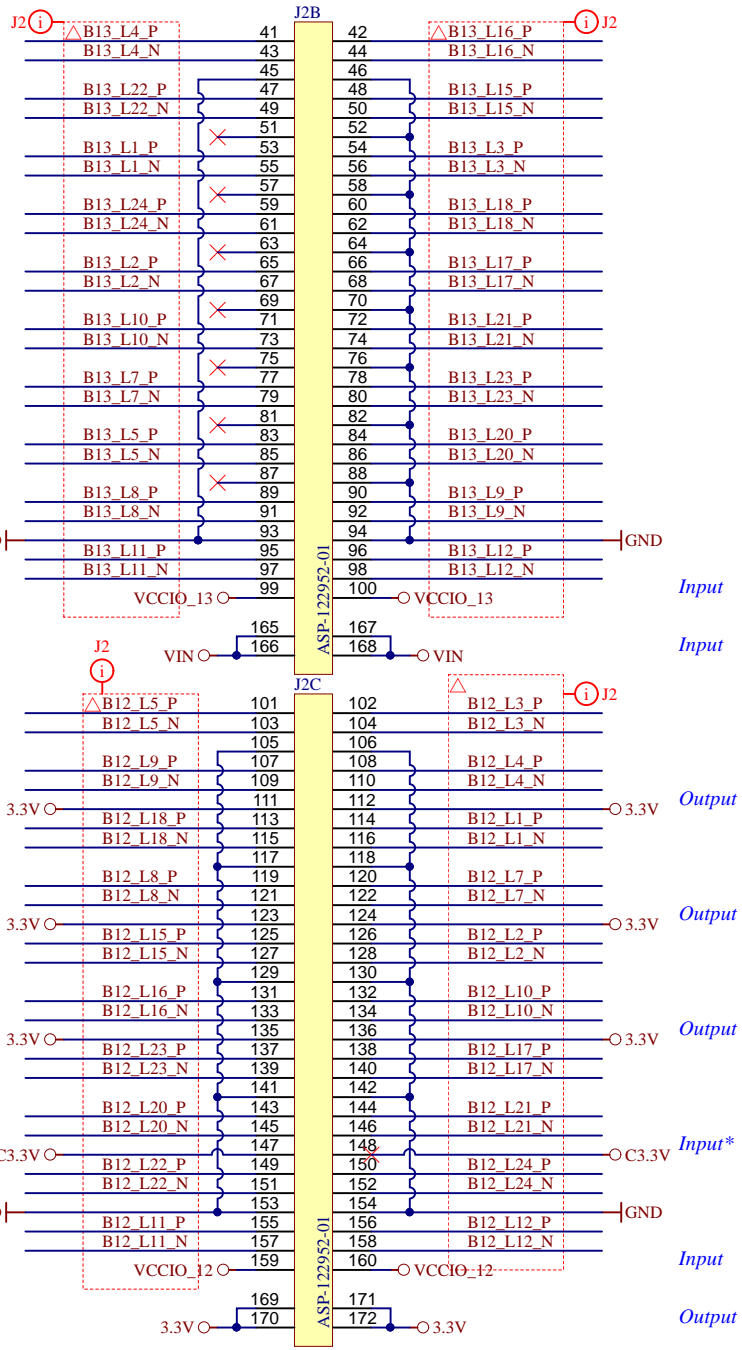
D

A

B

C

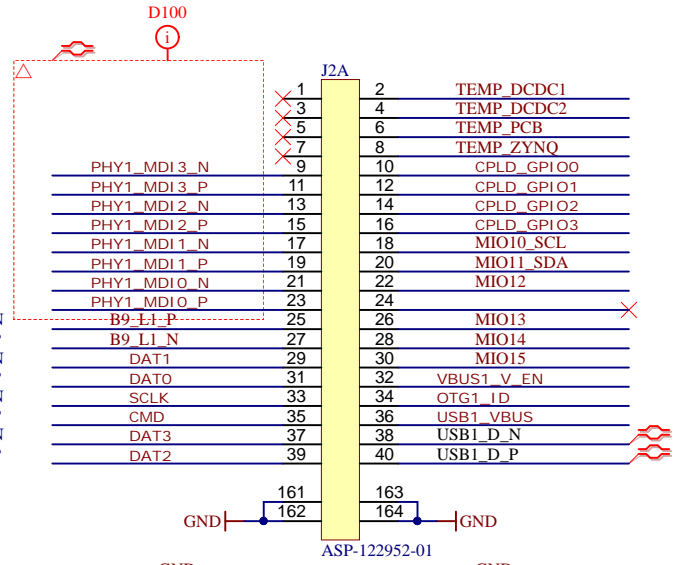
D



Next signals has different functionality in TE0782 and TEBT0782.

TE0782

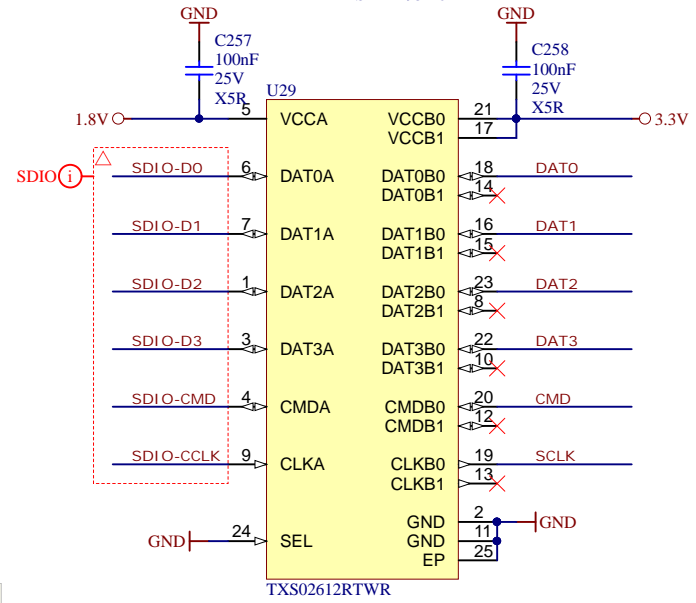
- PHY2_MDI3_N
- PHY2_MDI3_P
- PHY2_MDI2_N
- PHY2_MDI2_P
- PHY2_MDI1_N
- PHY2_MDI1_P
- PHY2_MDI0_N
- PHY2_MDI0_P



Next signals has different functionality in TE0782 and TEBT0782.

TE0782

- CPLD_GPIO4
- CPLD_GPIO5
- OTG2_ID
- USB2_VBUS
- USB2_D_N
- USB2_D_P
- VBUS2_V_EN



SDCARD

- DAT0
- DAT1
- DAT2
- DAT3
- CMD
- SCLK

* - C3.3V: Normally leave unconnected



Title: HSMC_Connector_J2		
A4	Number: TE0783 035-21	Rev. 02
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Filename: HSMC_CONN_J2.SchDoc		

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A

A

U_PS-DDR
PS-DDR.SchDoc



U_B9
B9.SchDoc



U_MIO-BANKS
MIO-BANKS.SchDoc



U_B10
B10.SchDoc



U_HP-BANKS
HP-BANKS.SchDoc



U_B11
B11.SchDoc



B

B

U_FPGA-MGT
FPGA-MGT.SchDoc



U_B12
B12.SchDoc



U_FPGA-CFG
FPGA-CFG.SchDoc



U_B13
B13.SchDoc



C

C

U_FPGA-PWR
FPGA-PWR.SchDoc



D

D



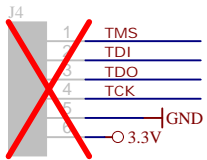
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A4	Number: TE0783 035-2I	Rev. 02
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Filename: SOC.SchDoc		

1

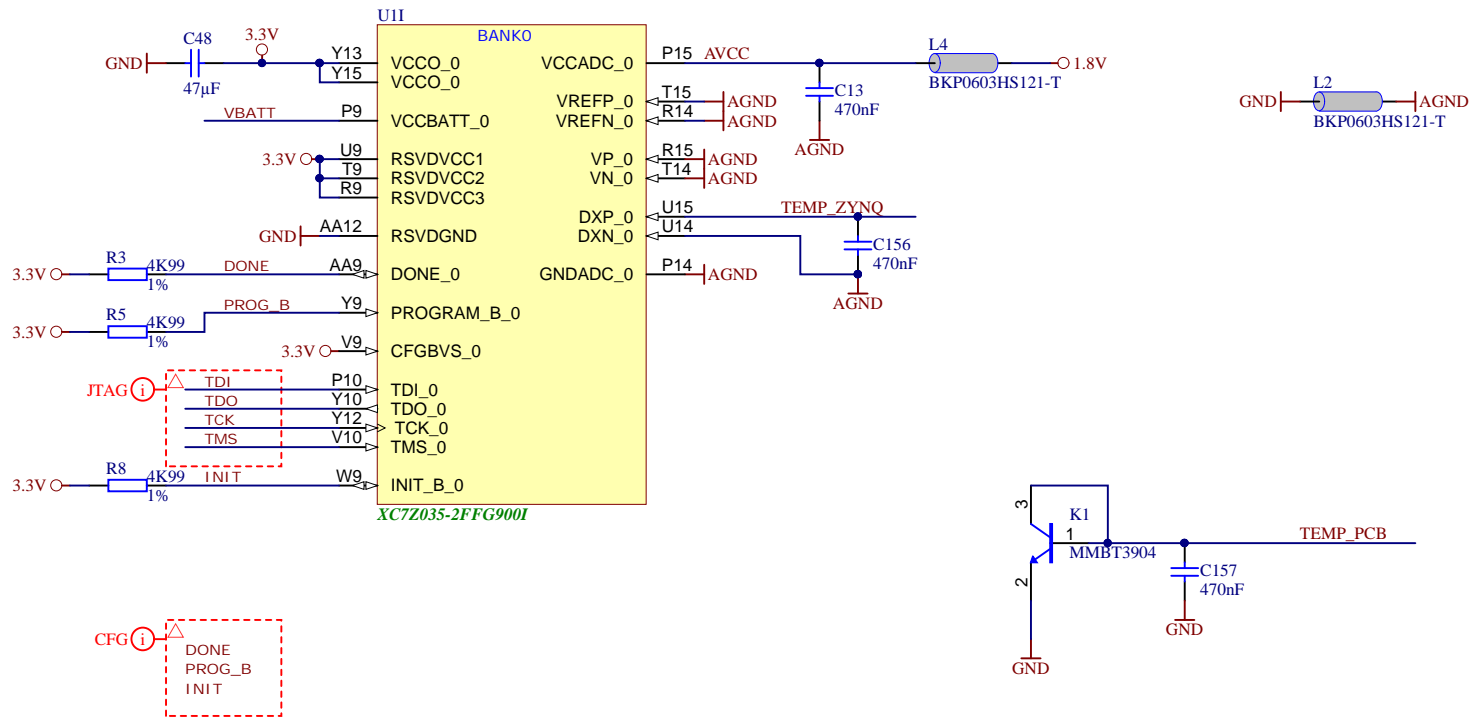
2

3

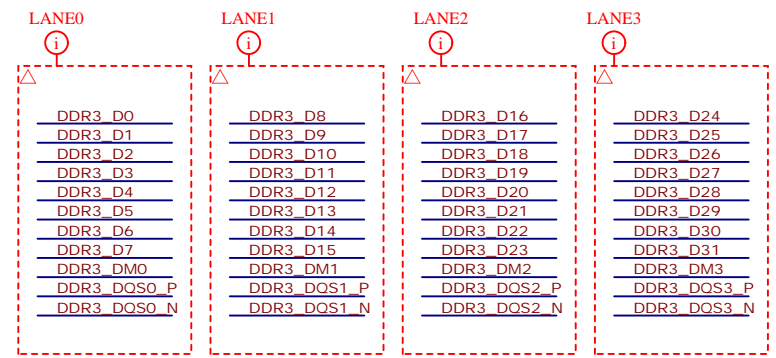
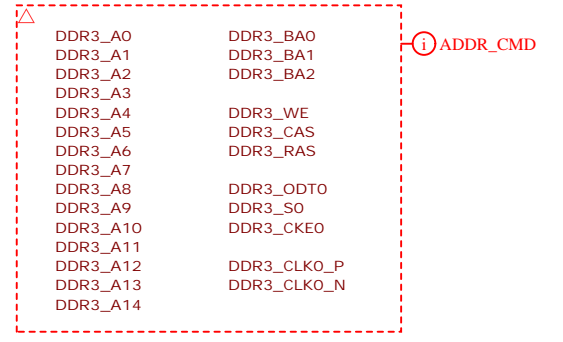
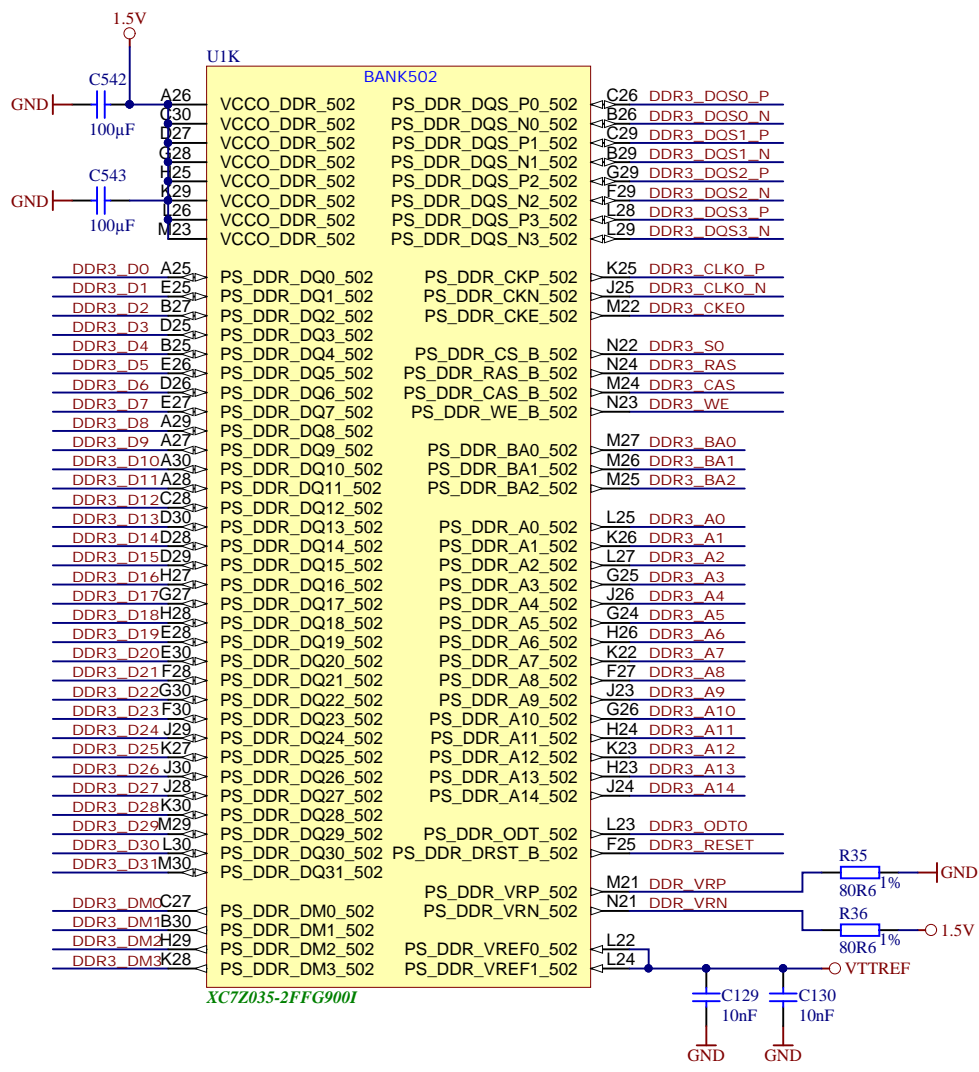
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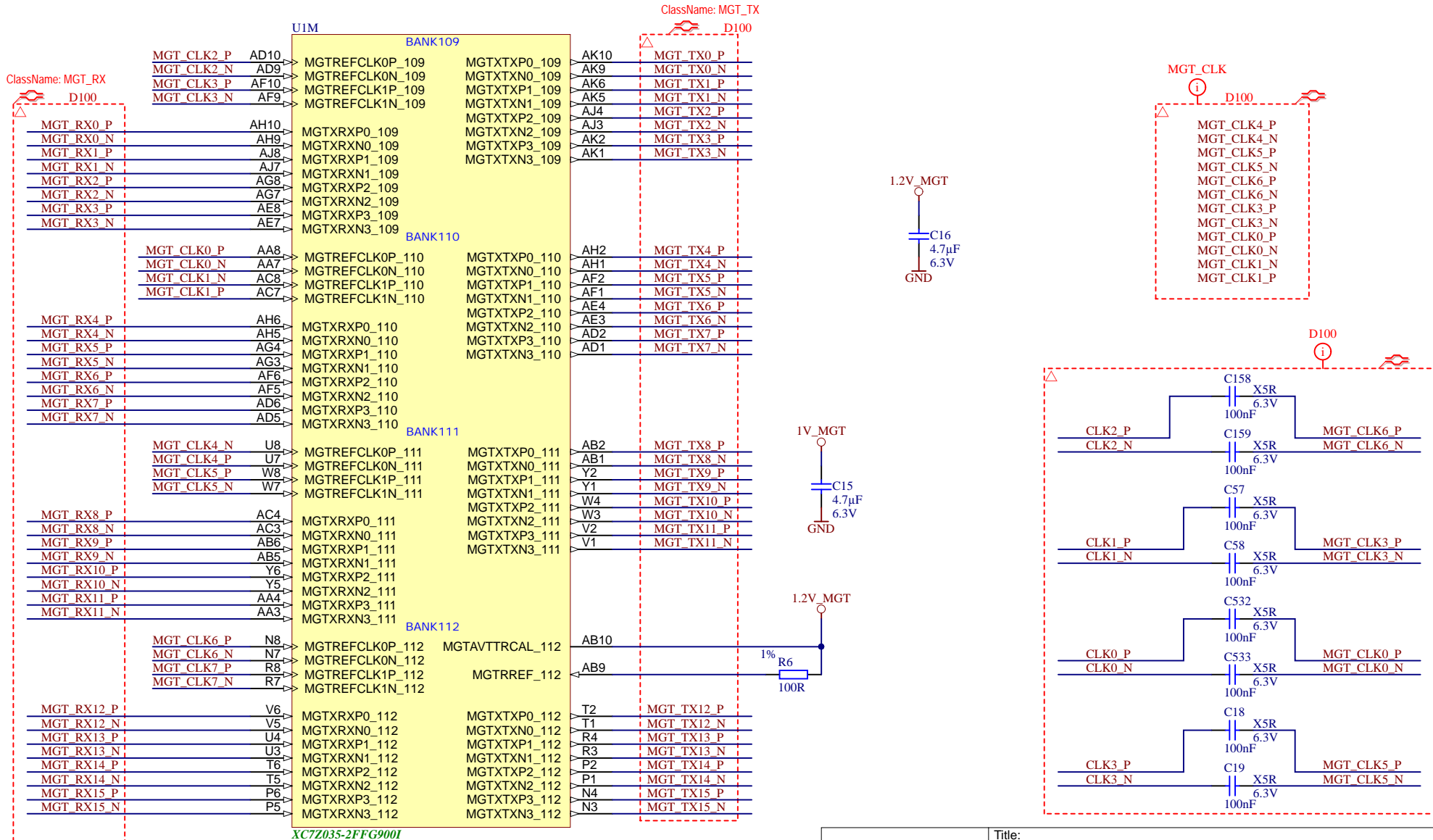
Placeholder 1 row 6 pin header



Title: FPGA Configuration		
A4	Nummer: TE0783 035-2I	Rev. 02
Datum: 13.07.2018	Zeichner: Trenz Electronic GmbH	Blatt 7 von 32
Filename: FPGA-CFG.SchDoc		



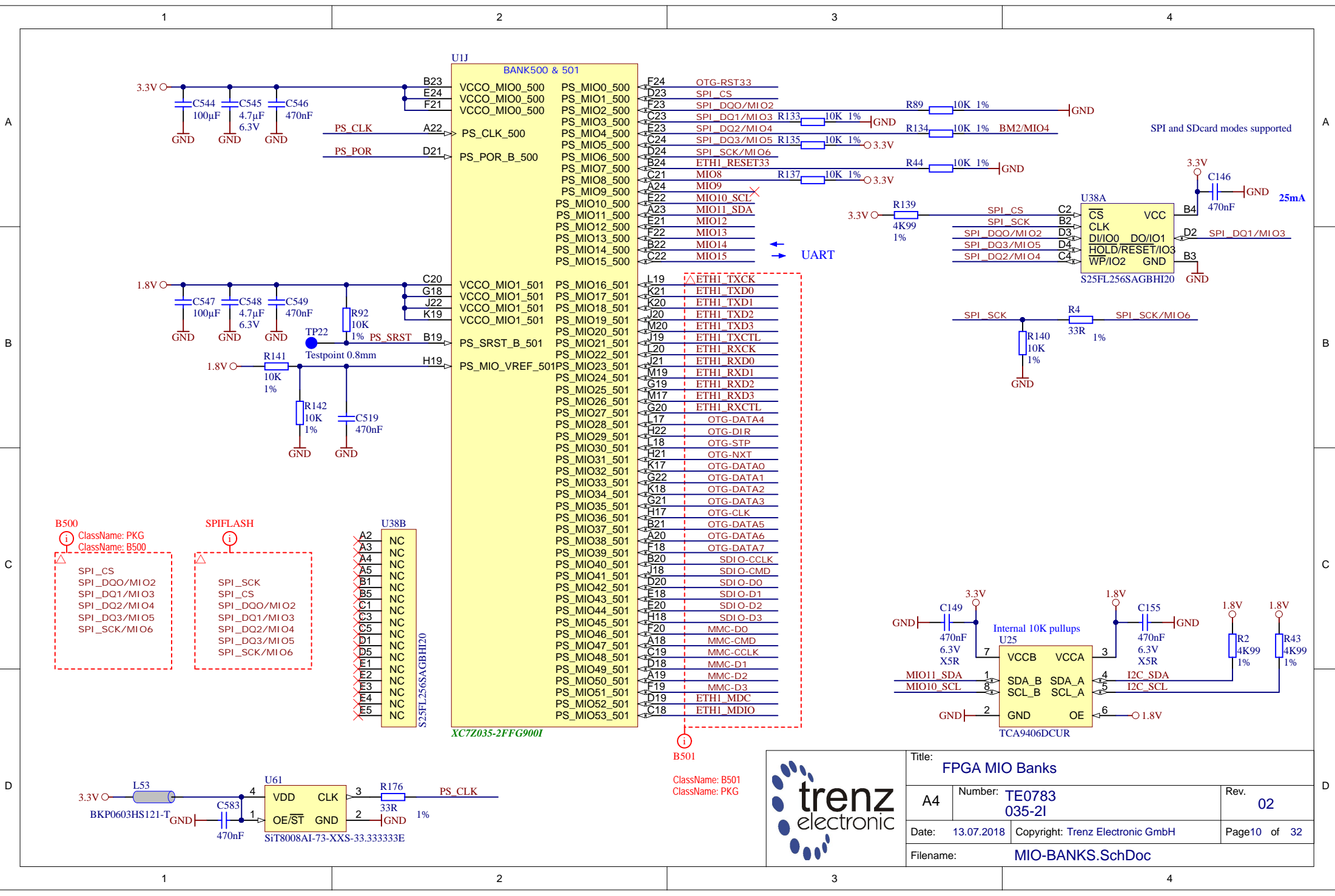
Title: FPGA DDR Banks		
A4	Number: TE0783 035-21	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 8 of 32
Filename: PS-DDR.SchDoc		



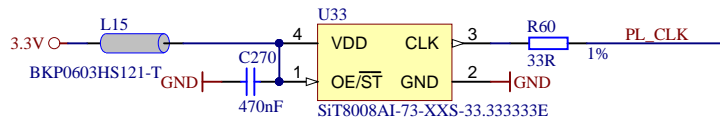
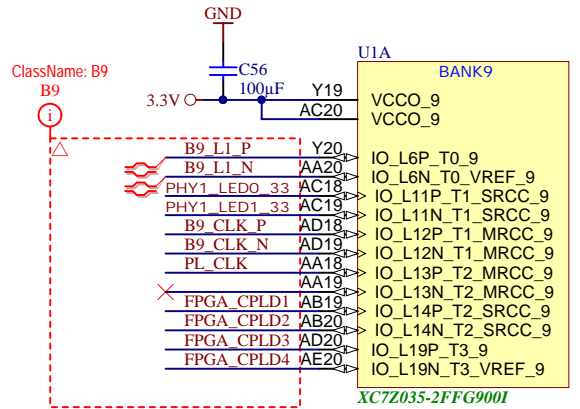
XC7Z035-2FFG900I



Title: FPGA MGT		
A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 9 of 32
Filename: FPGA-MGT.SchDoc		

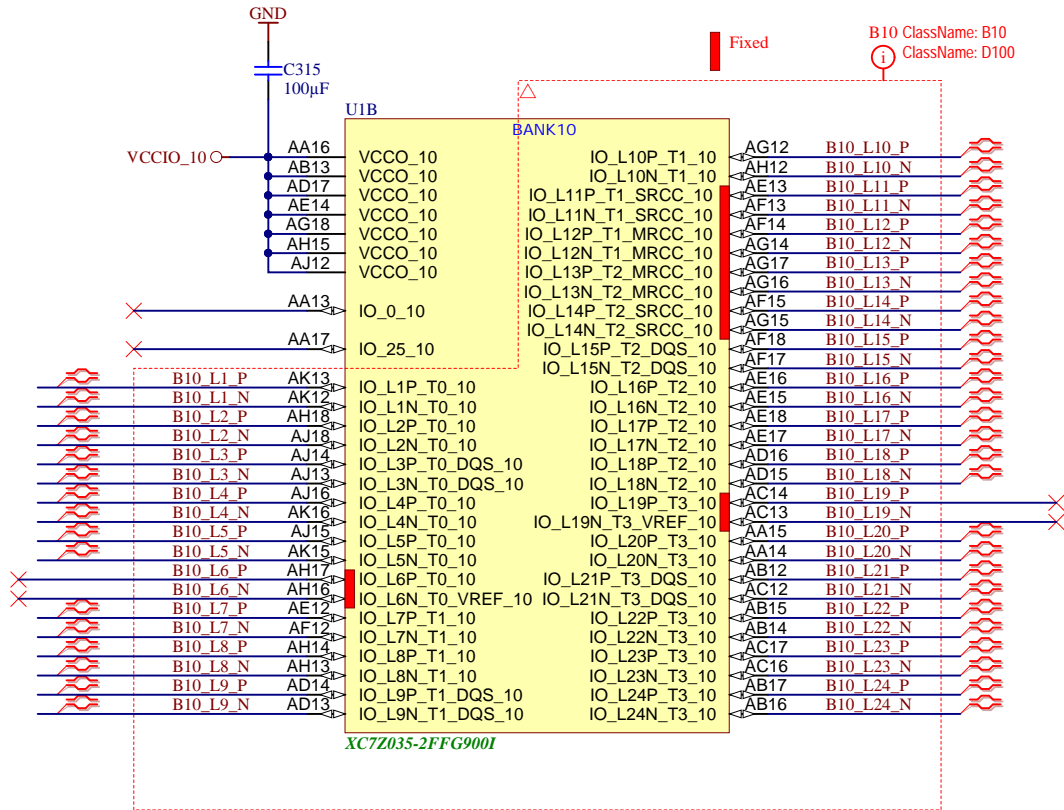


Title: FPGA MIO Banks		
A4	Number: TE0783 035-21	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 10 of 32
Filename: MIO-BANKS.SchDoc		



Title: FPGA B9		
A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 11 of 32
Filename: B9.SchDoc		

TP4
 ● VCCIO_10
 ○ Testpoint 0.8mm



Title: FPGA B10		
A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 12 of 32
Filename: B10.SchDoc		

A

A

B

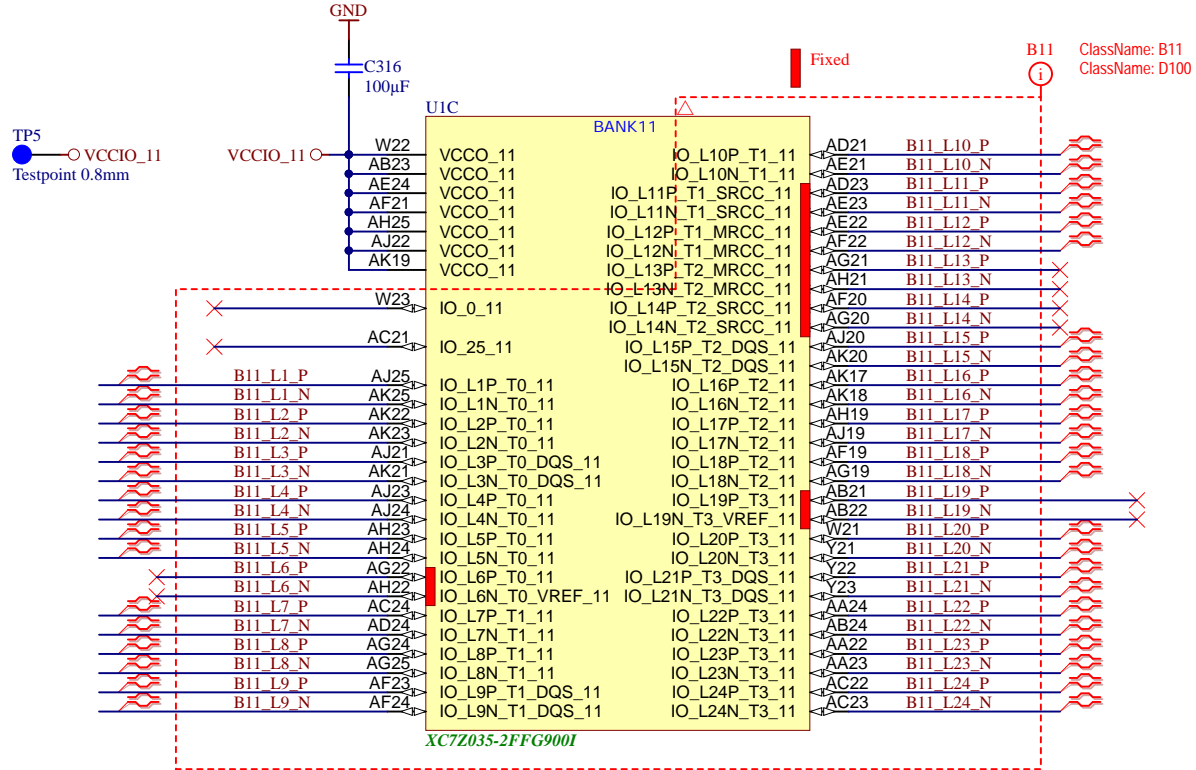
B

C


C

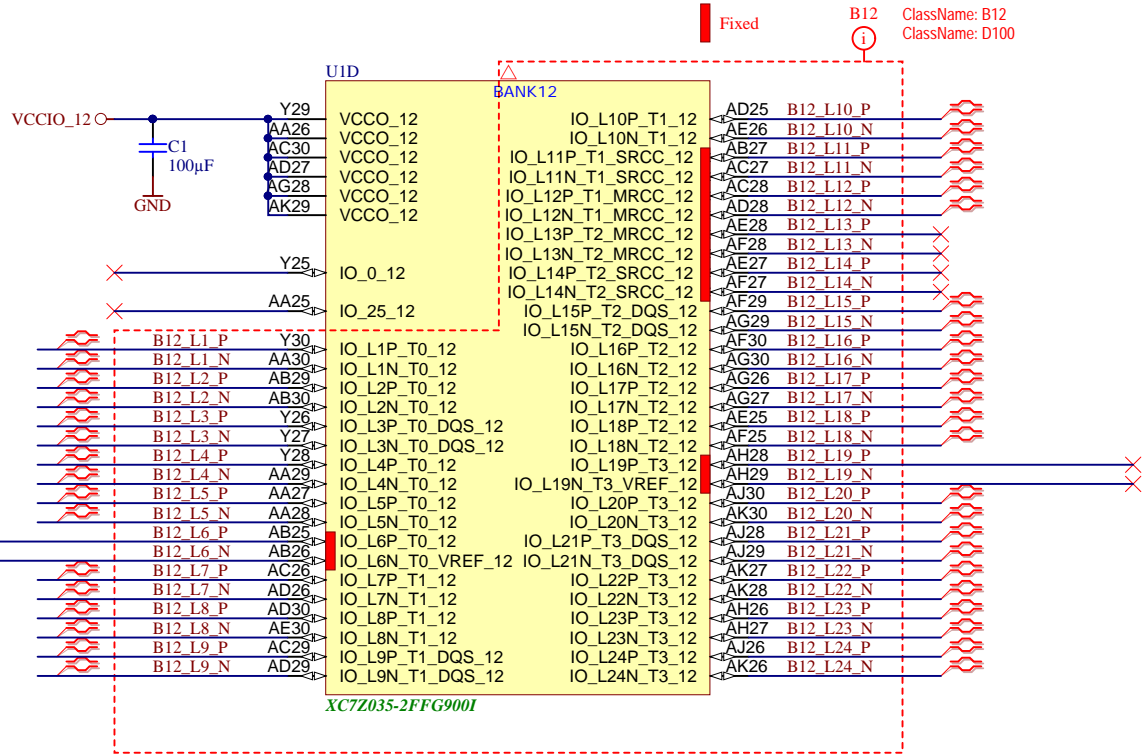
D

D

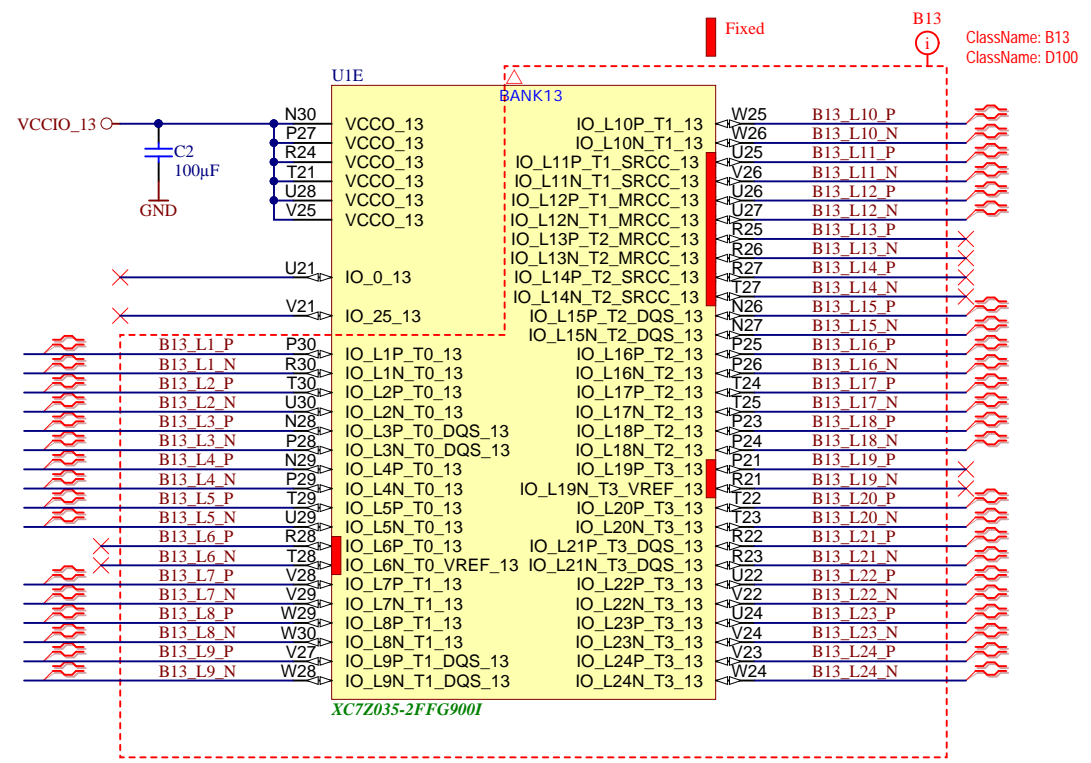
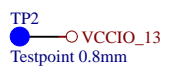


	Title: FPGA B11		
	A4	Number: TE0783 035-2I	Rev. 02
	Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 13 of 32
	Filename: B11.SchDoc		

TP1
 VCCIO_12
 Testpoint 0.8mm



Title: FPGA B12		
A4	Number: TE0783 035-2I	Rev. 02
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Filename: B12.SchDoc		



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Title: FPGA B13		
A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 15 of 32
Filename: B13.SchDoc		

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U_B33
B33.SchDoc



U_B34
B34.SchDoc



U_B35
B35.SchDoc



U_DDR3-RAM-PL1
DDR3-RAM-PL1.SchDoc



U_DDR3-RAM-PL2
DDR3-RAM-PL2.SchDoc



A

A

B

B

C

C

D

D



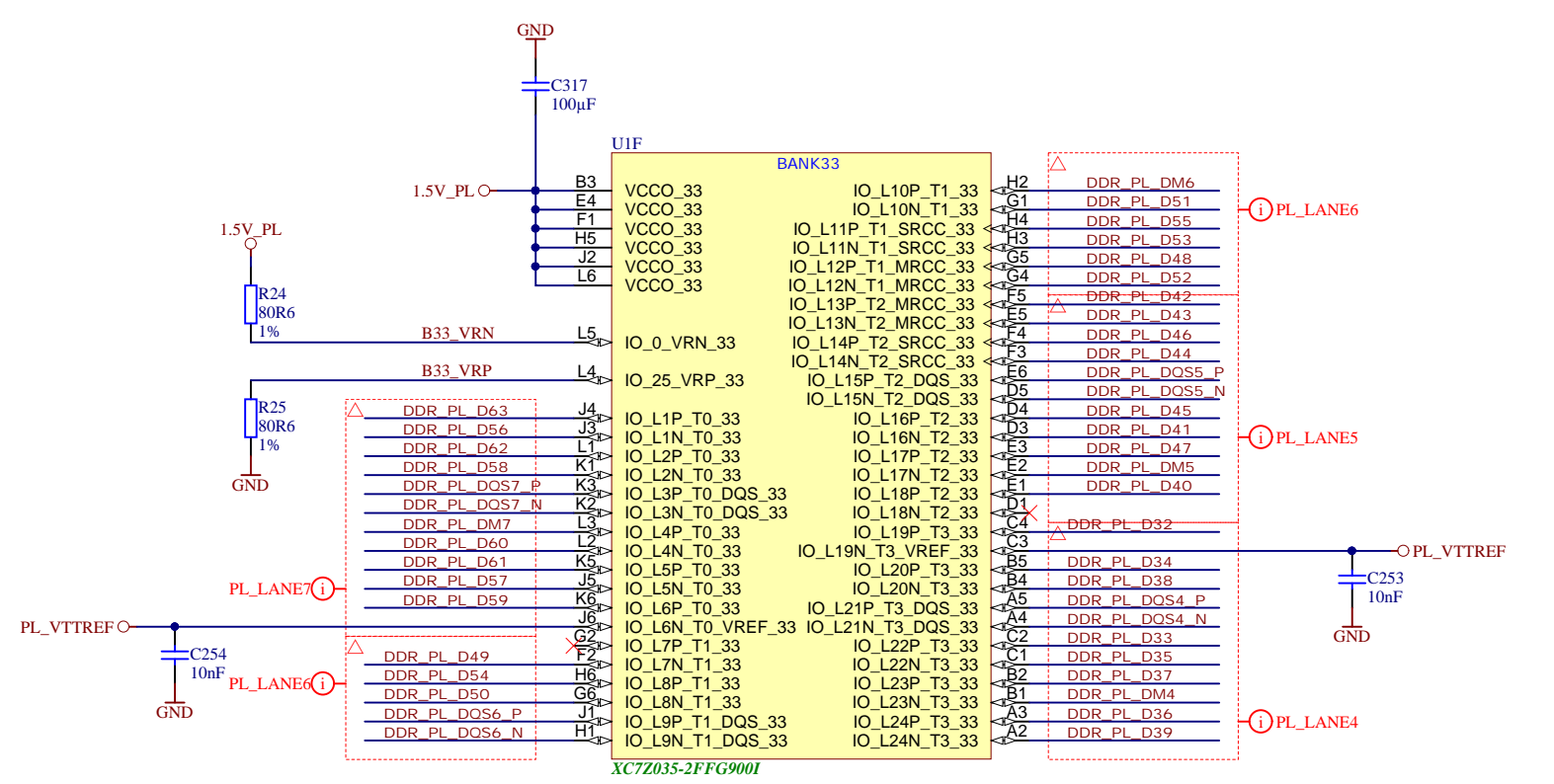

Title: FPGA HP Banks		
A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 16 of 32
Filename: HP-BANKS.SchDoc		

1

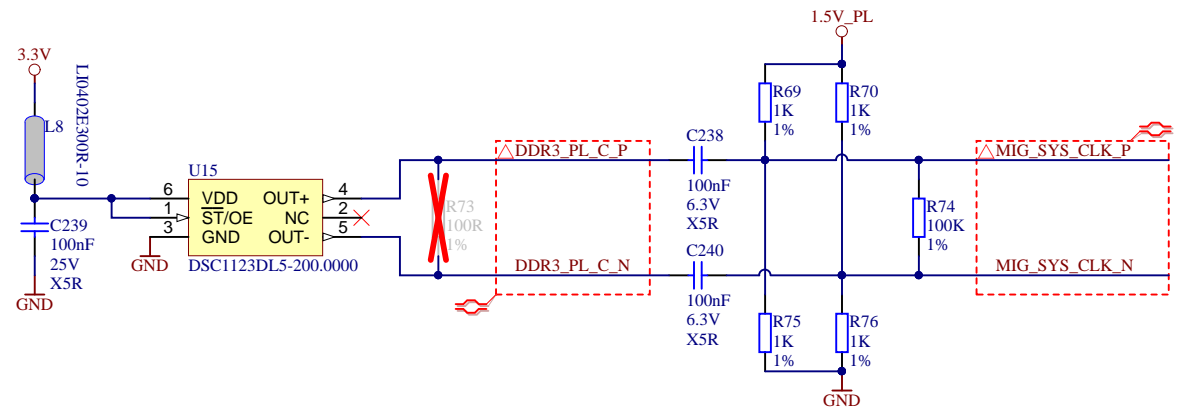
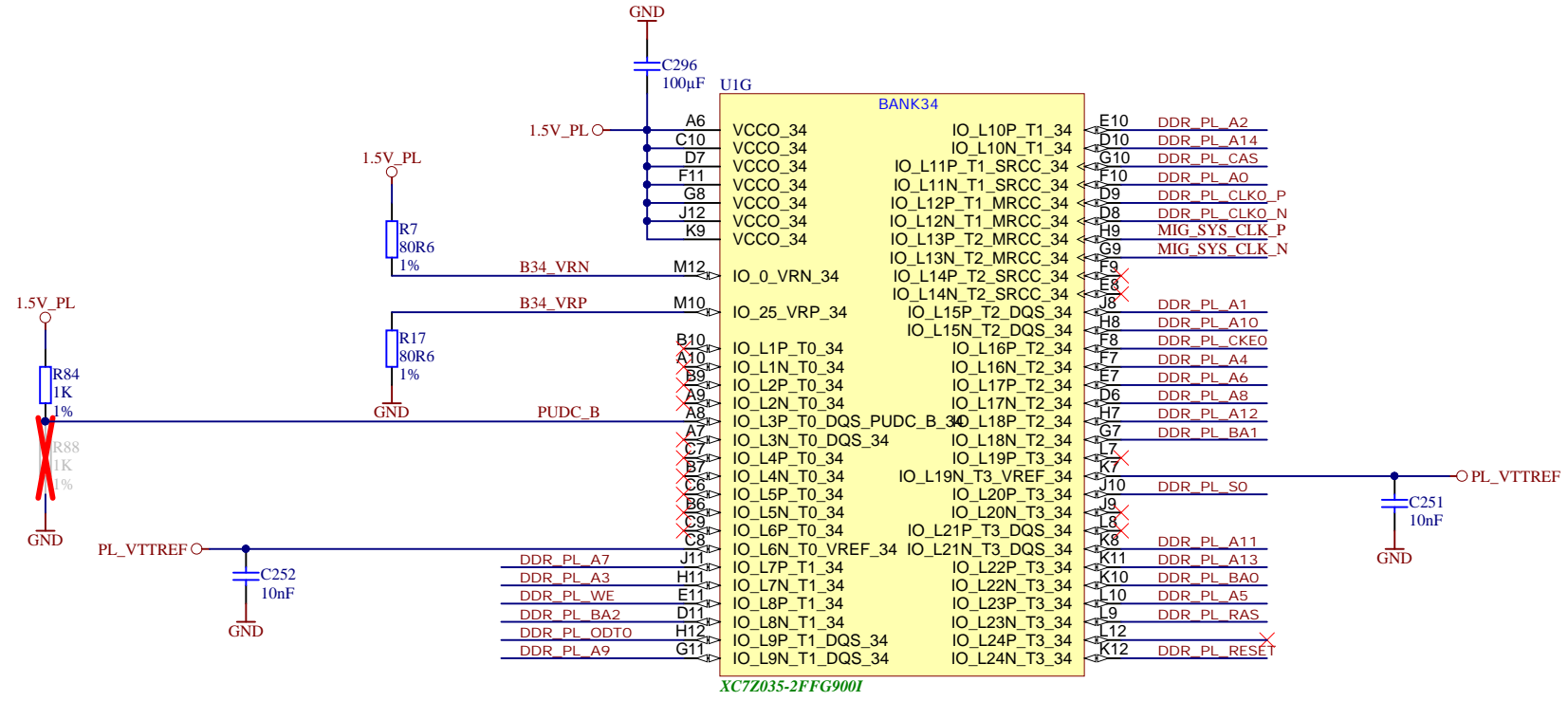
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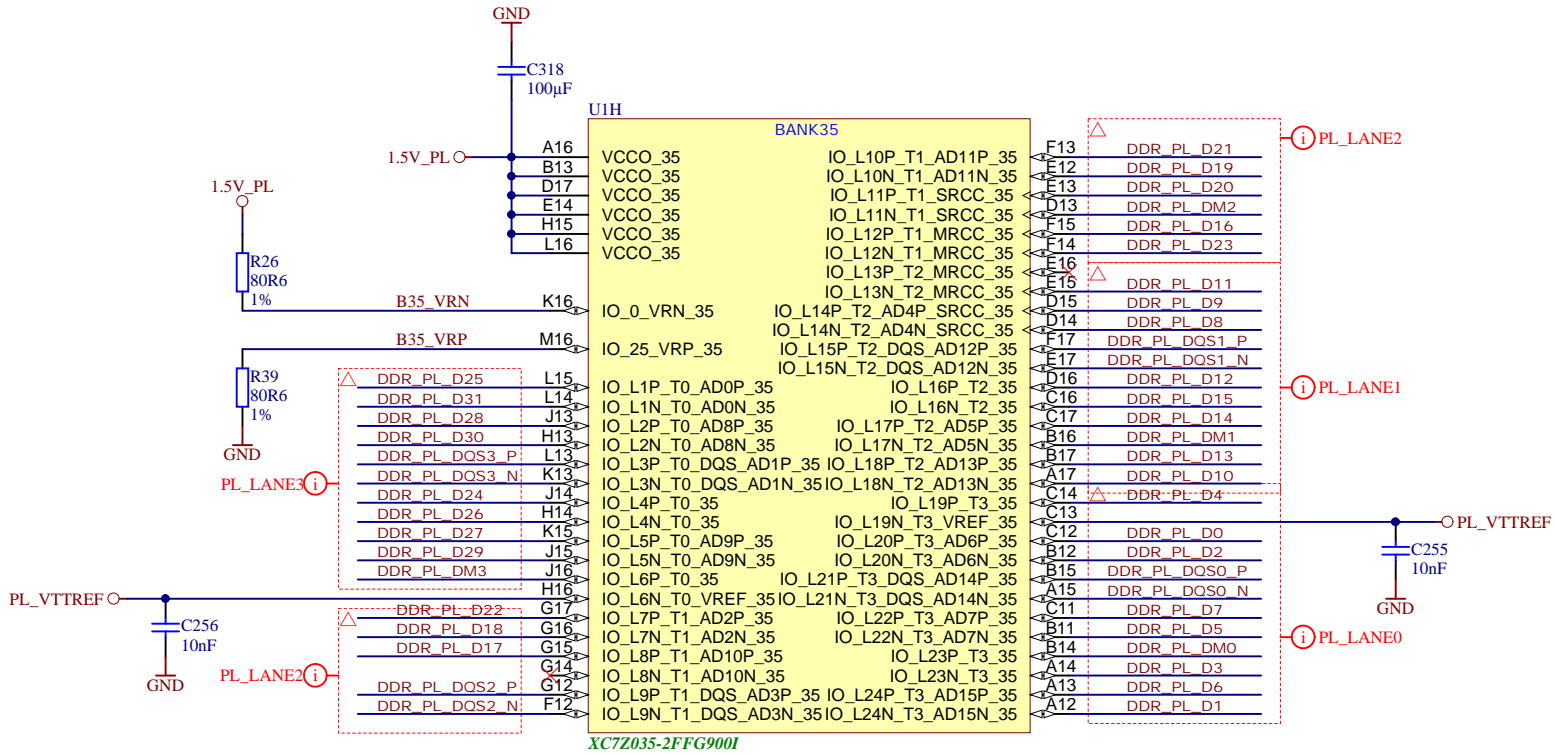
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A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 17 of 32
Filename: B33.SchDoc		




Check clock source. R74 100R changed to 100K



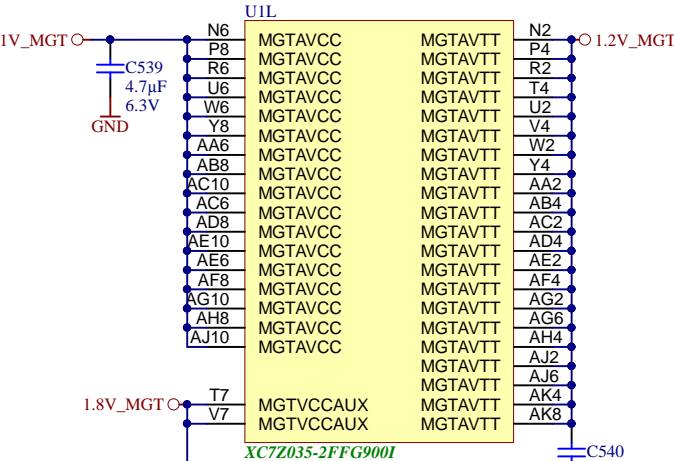
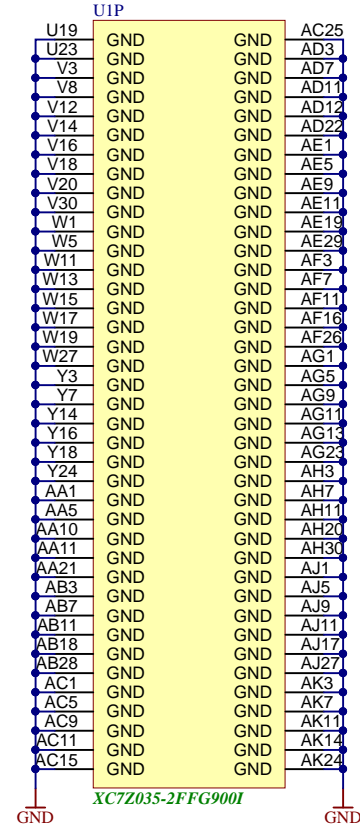
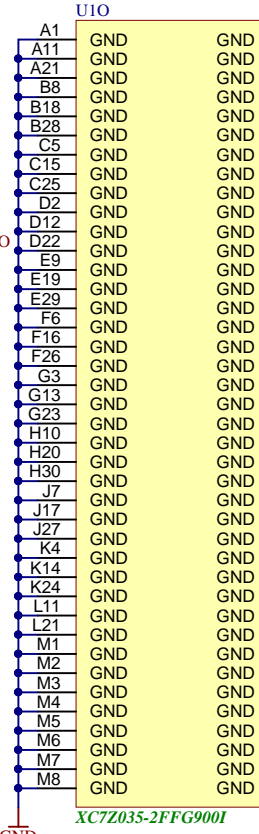
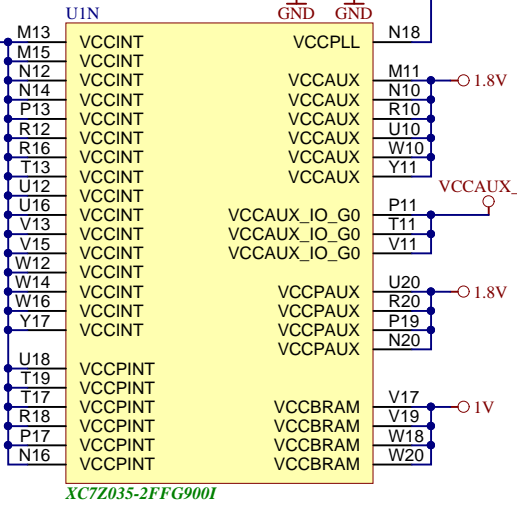
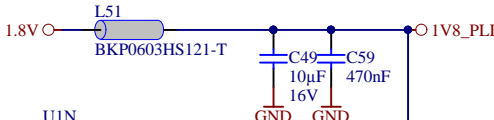
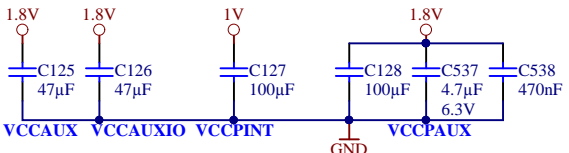
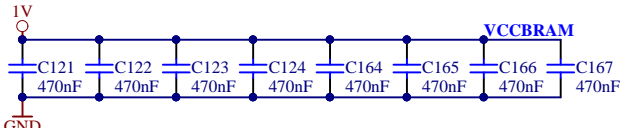
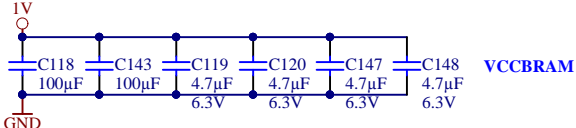
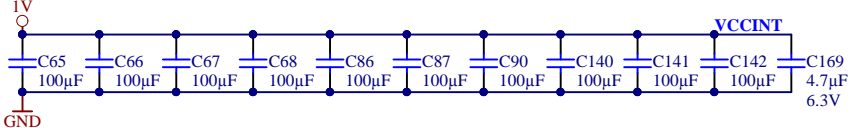
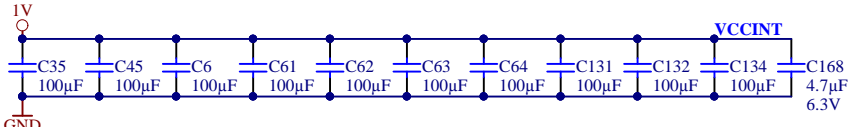
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A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 18 of 32
Filename: B34.SchDoc		



XC7Z035-2FFG9001

	Title: FPGA B35		
	A4	Number: TE0783 035-2I	Rev. 02
	Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 19 of 32
	Filename: B35.SchDoc		

Capacitors suitable for XC7Z100



Title: ZYNQ POWER		
A4	Number: TE0783 035-21	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page20 of 32
Filename: FPGA-PWR.SchDoc		

A

B

C

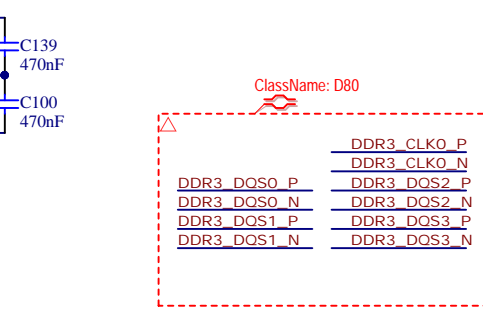
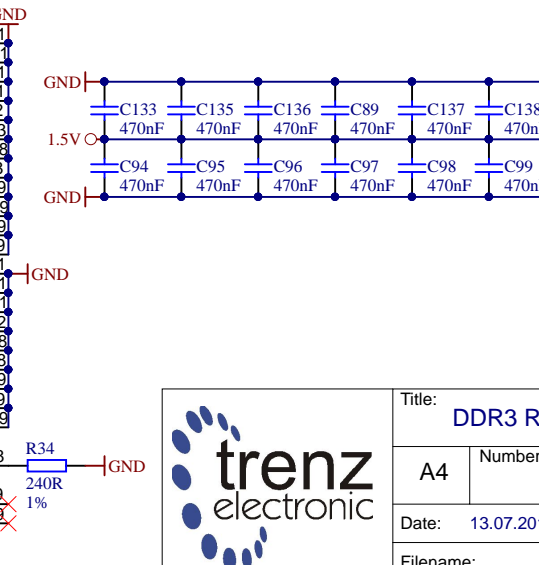
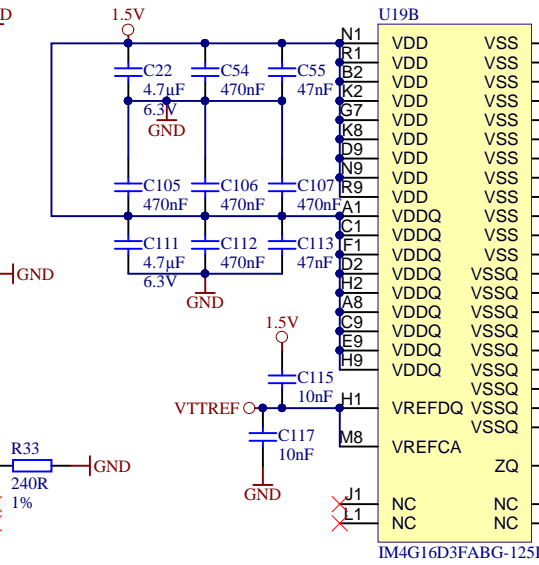
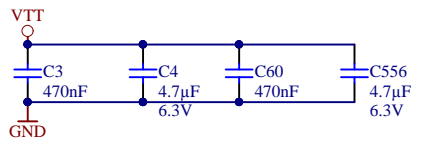
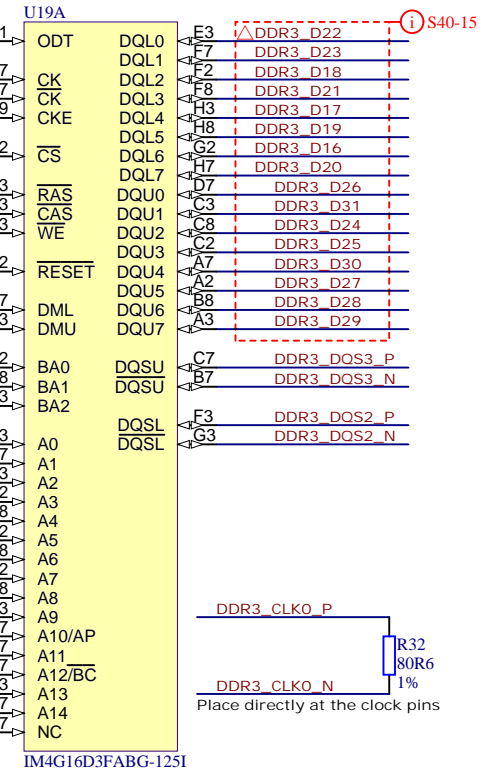
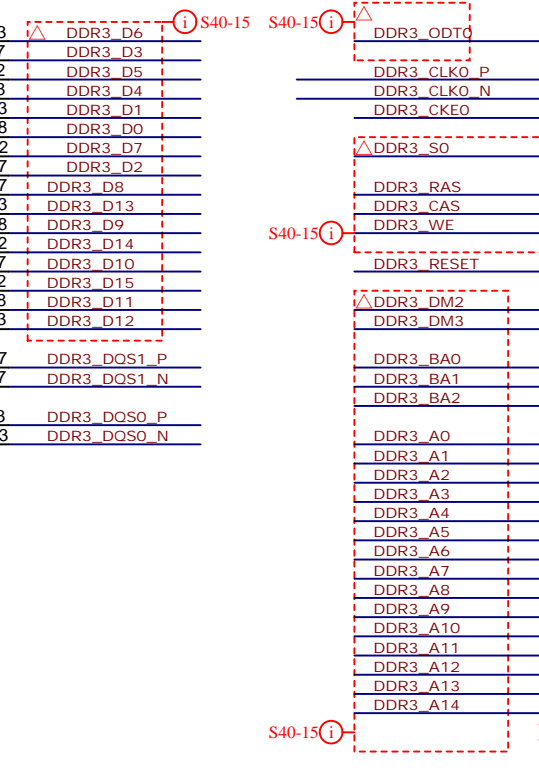
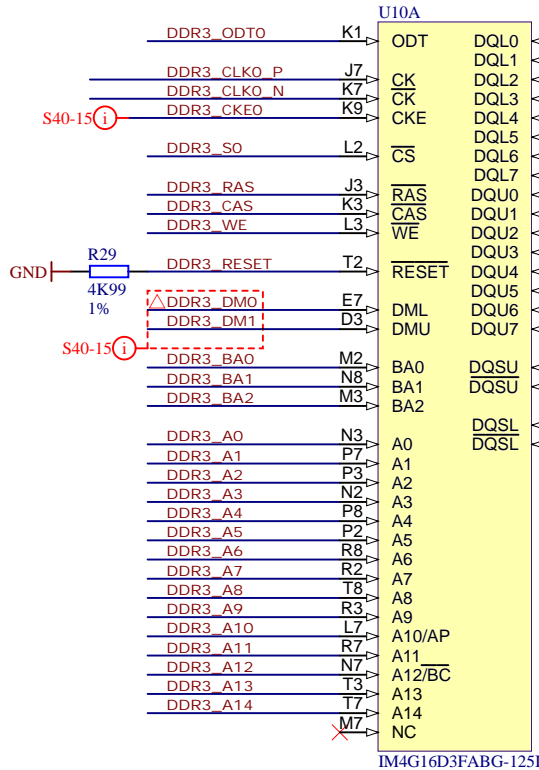
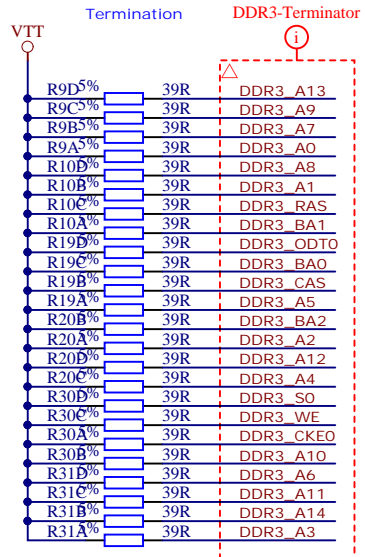
D

A

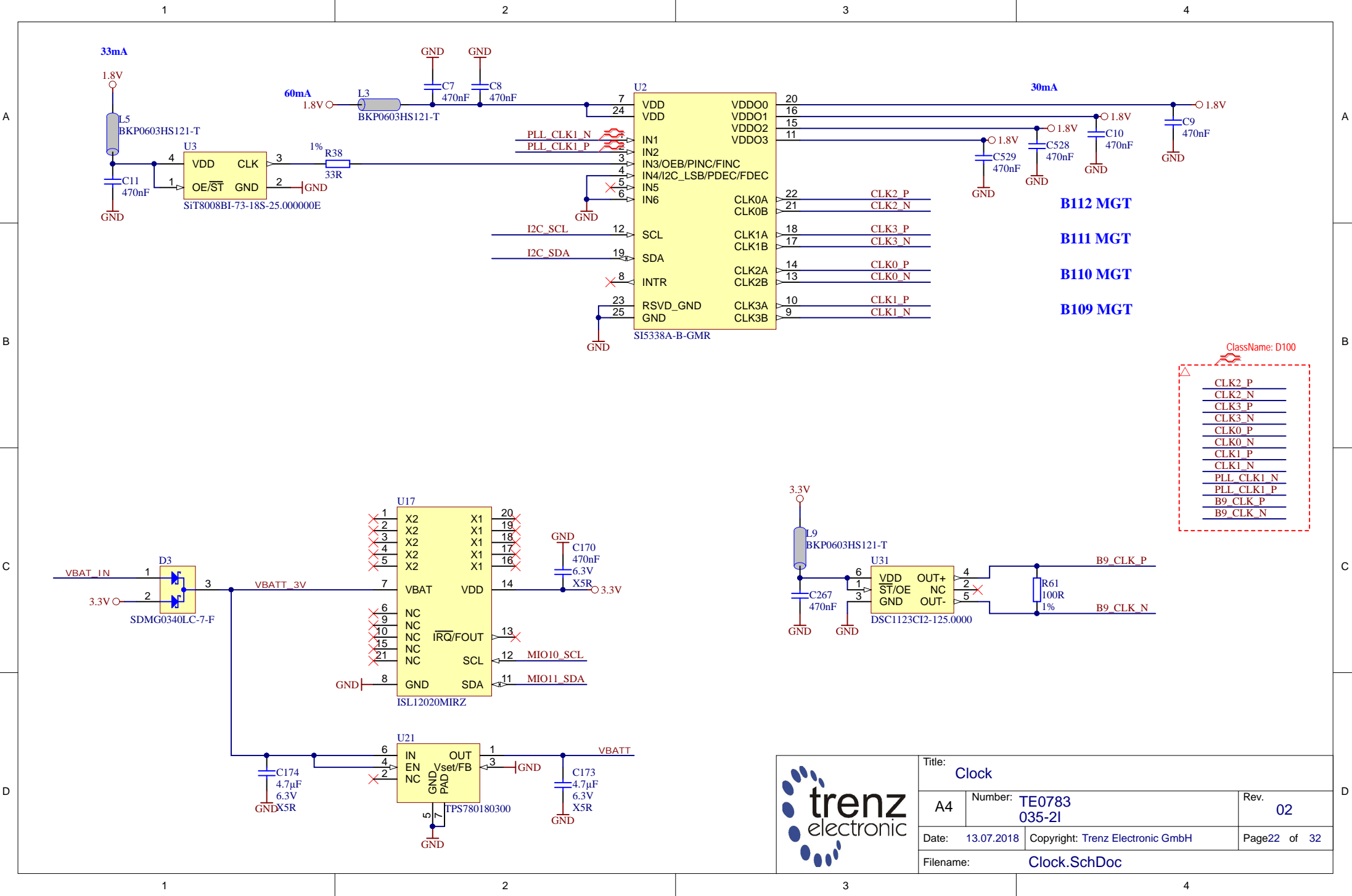
B

C

D




Title: DDR3 RAM PS		
A4	Number: TE0783 035-21	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 21 of 32
Filename: DDR3-RAM.SchDoc		



B112 MGT
B111 MGT
B110 MGT
B109 MGT

- ClassName: D100
- CLK2_P
 - CLK2_N
 - CLK3_P
 - CLK3_N
 - CLK0_P
 - CLK0_N
 - CLK1_P
 - CLK1_N
 - PLL_CLK1_N
 - PLL_CLK1_P
 - B9_CLK_P
 - B9_CLK_N



Title: Clock		
A4	Number: TE0783 035-21	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 22 of 32
Filename: Clock.SchDoc		

A

A

B

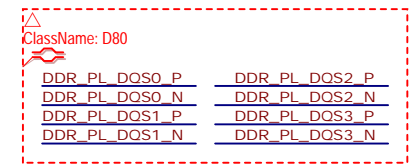
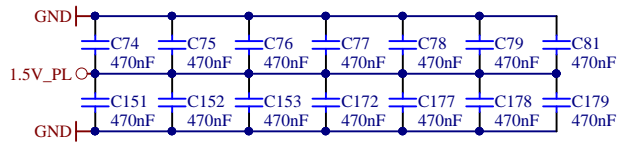
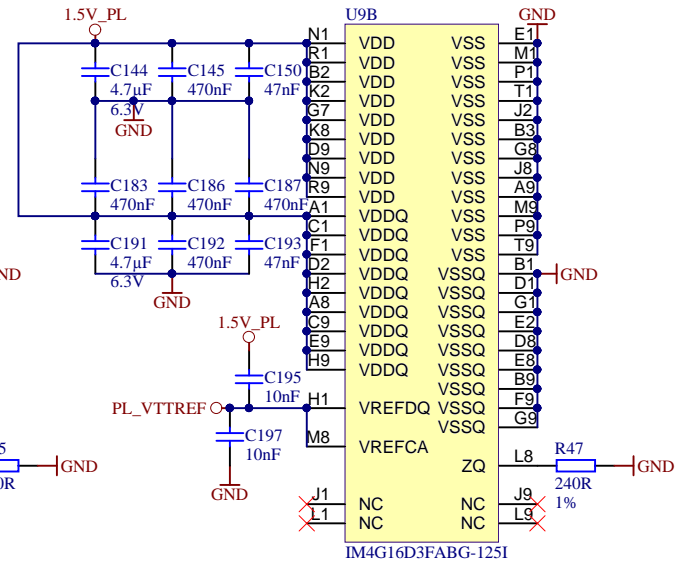
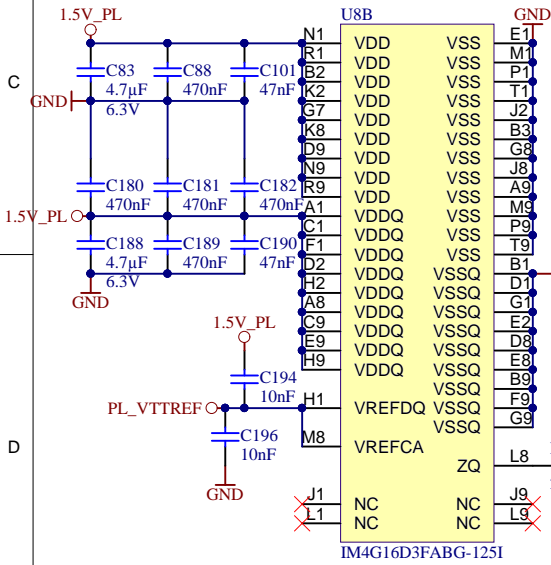
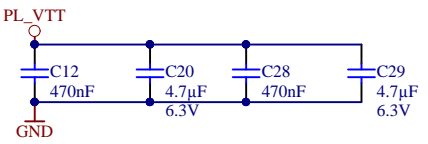
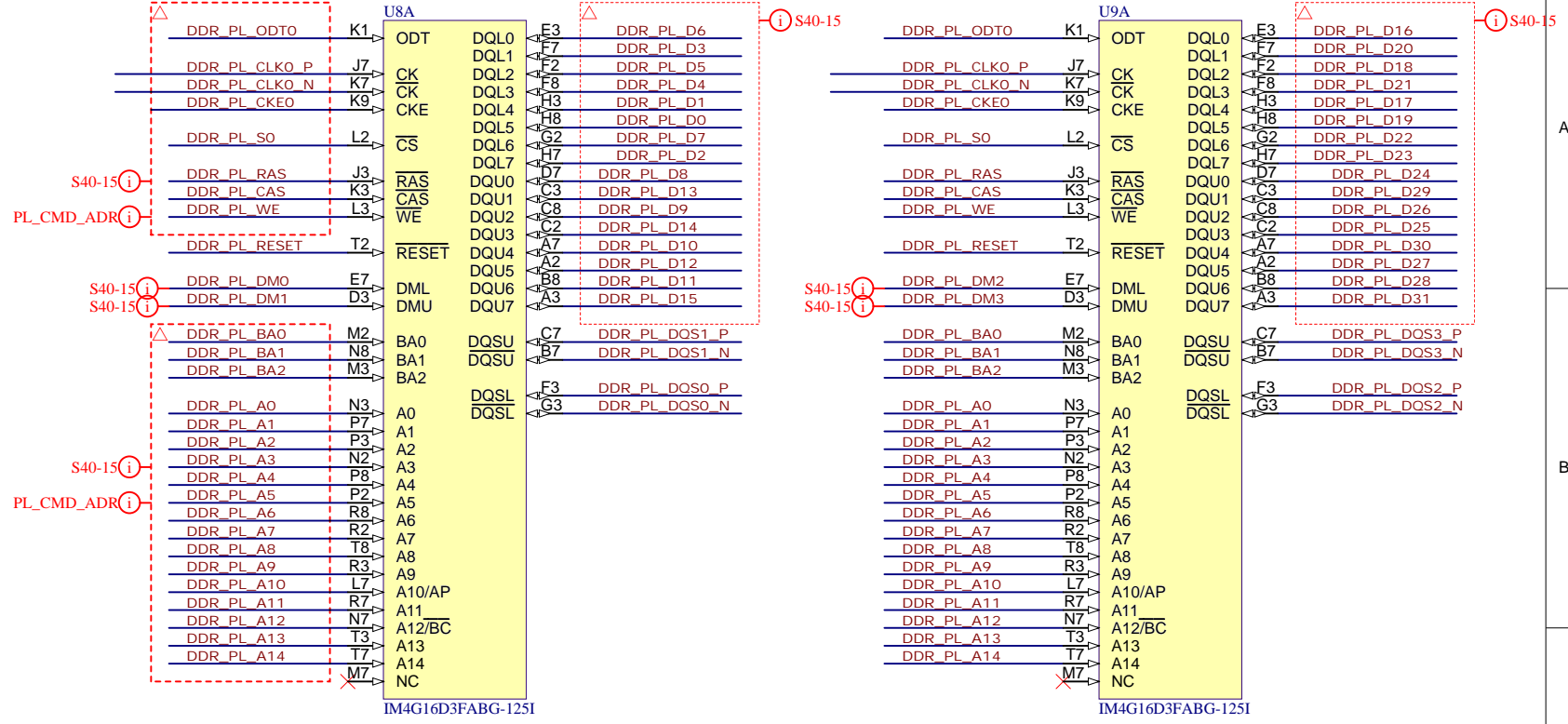
B

C

C

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D



Title: DDR3 RAM PL		
A4	Number: TE0783 035-21	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 23 of 32
Filename: DDR3-RAM-PL1.SchDoc		

A

B

C

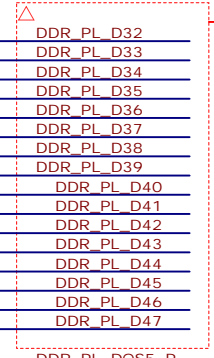
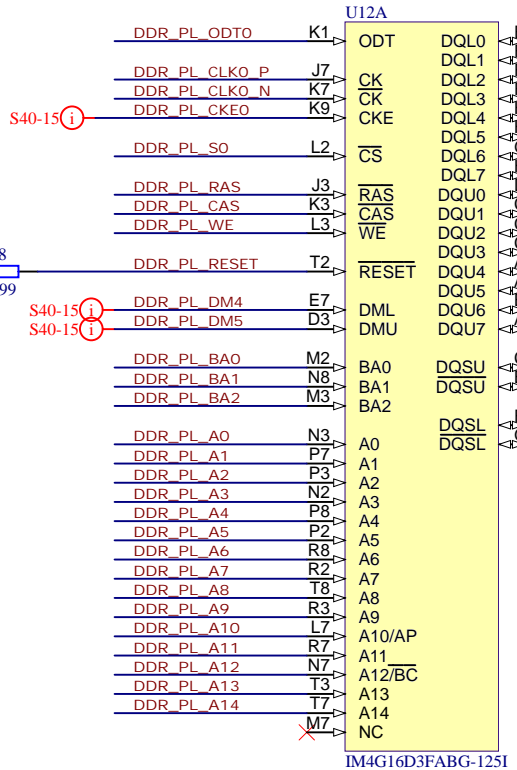
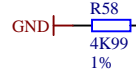
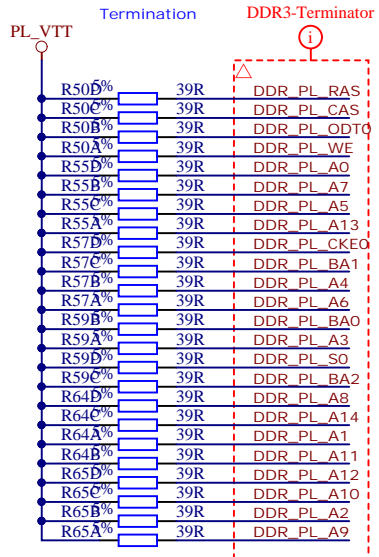
D

A

B

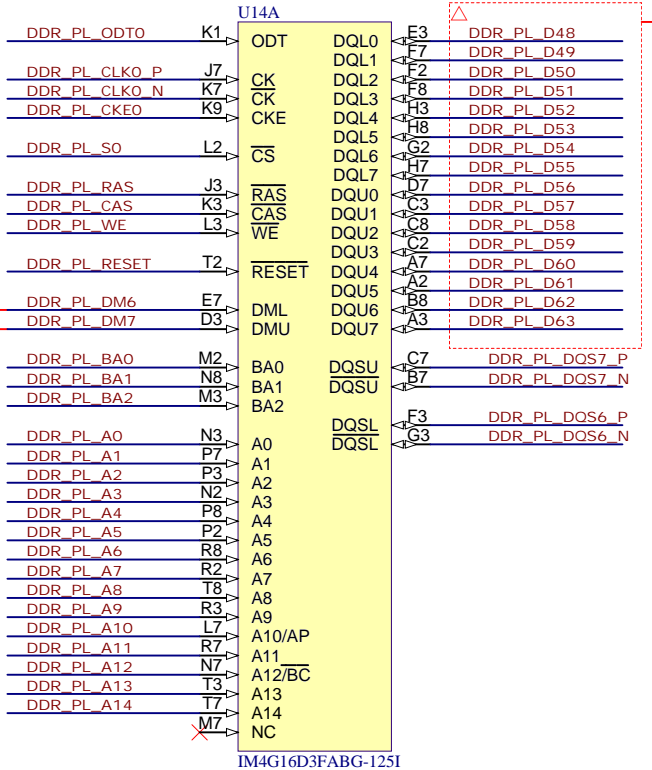
C

D

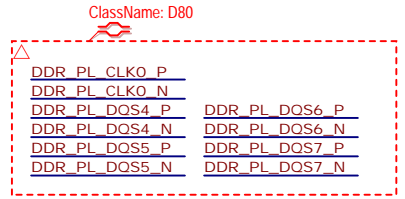
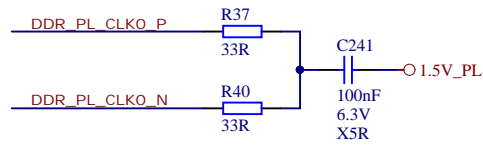
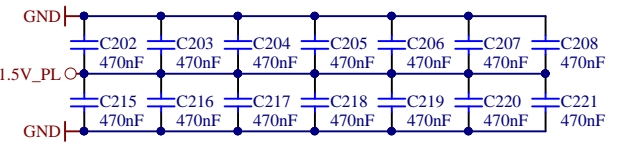
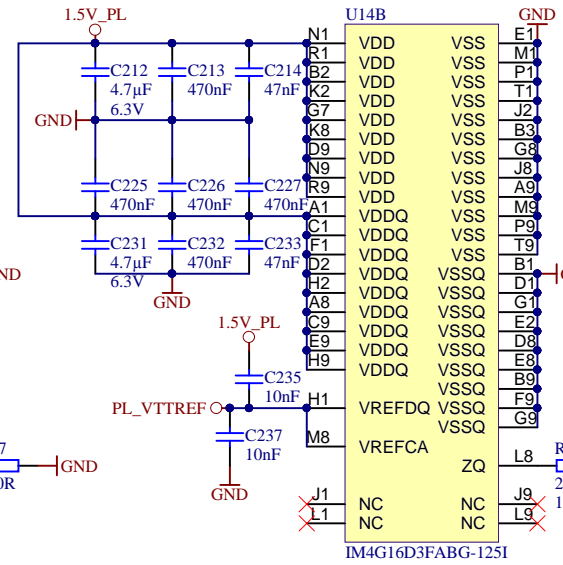
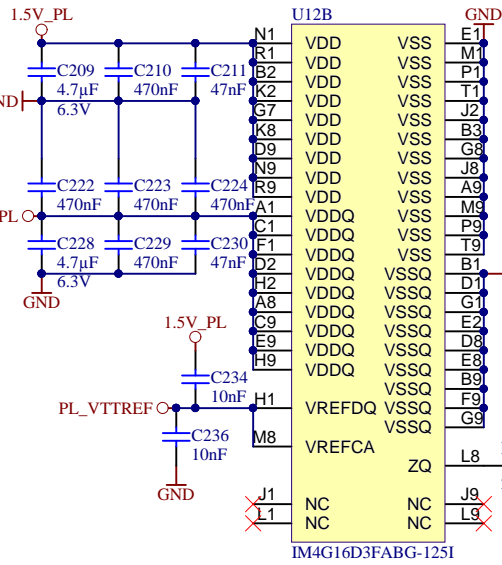
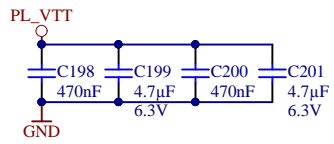


S40-15

S40-15



S40-15



Place directly at the clock pins



Title: DDR3 RAM PL		
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Filename: DDR3-RAM-PL2.SchDoc		

A

B

C

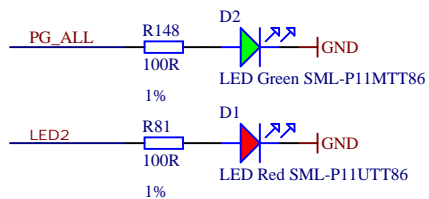
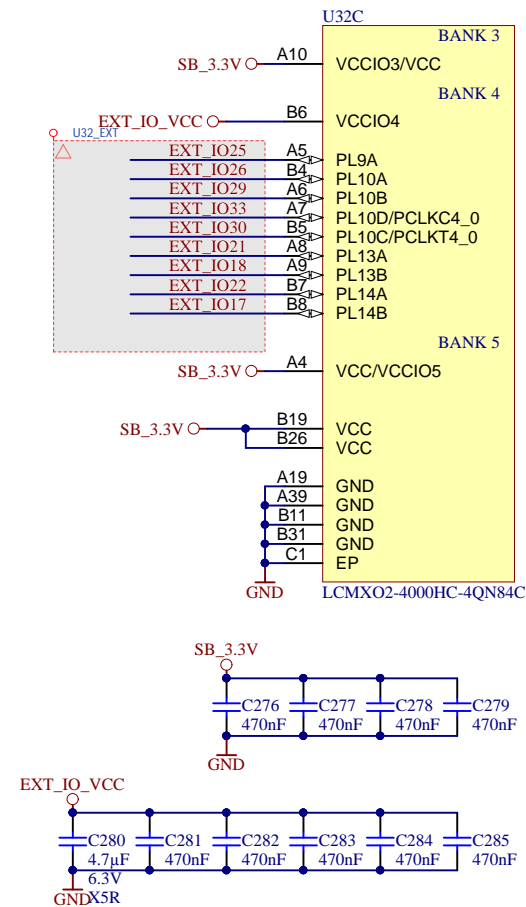
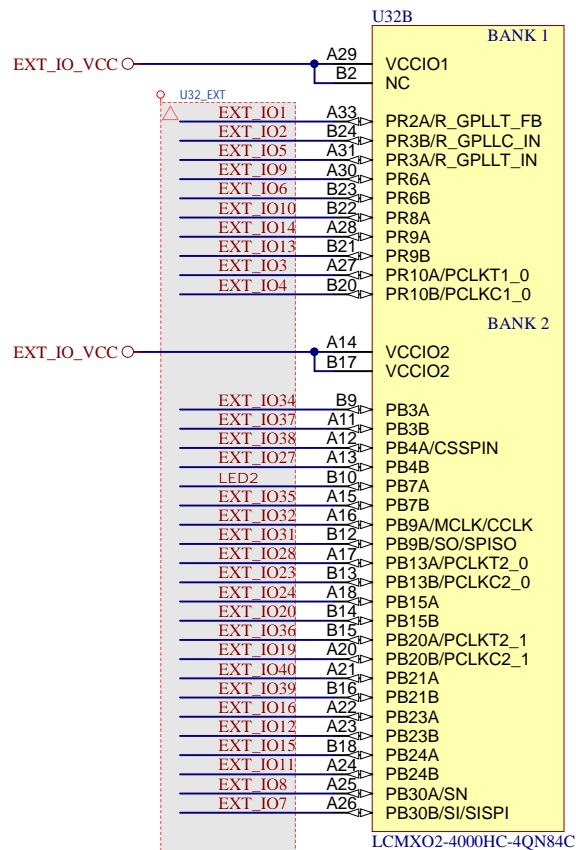
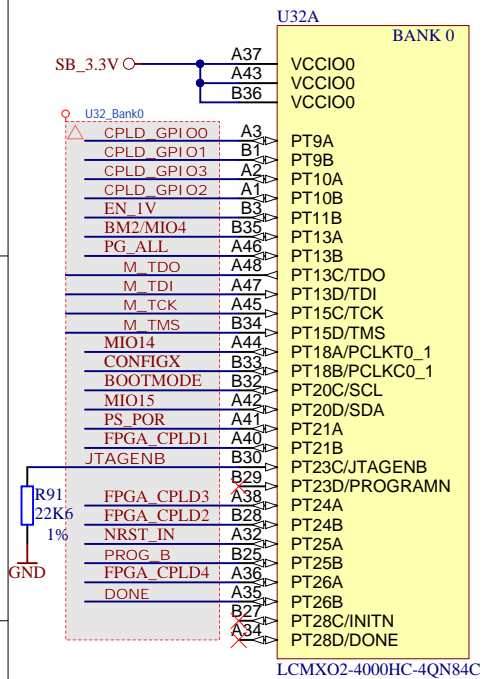
D

A

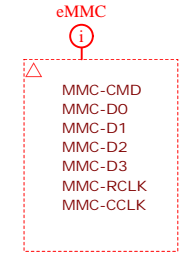
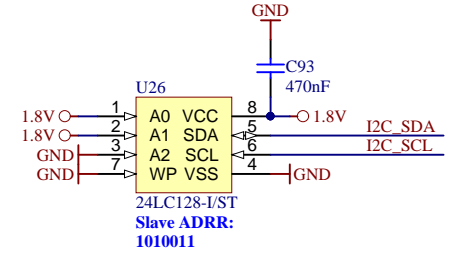
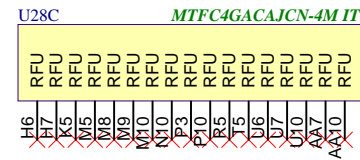
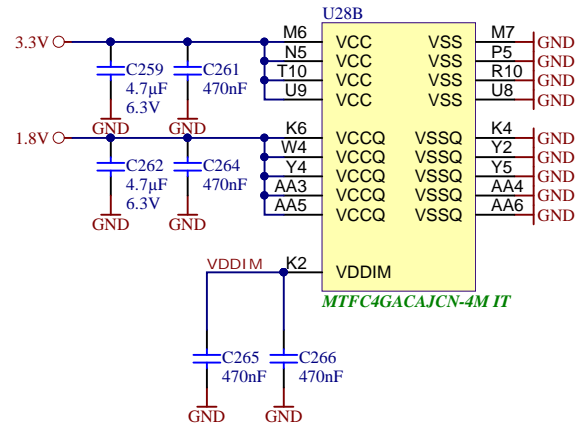
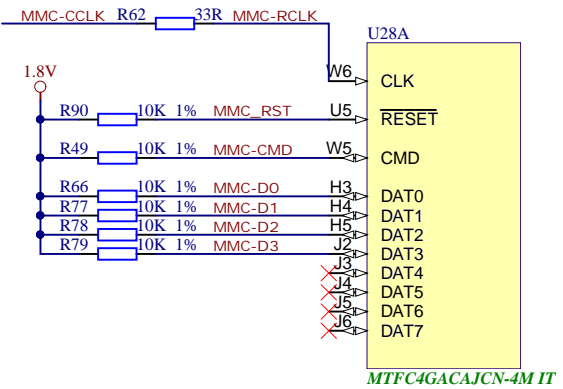
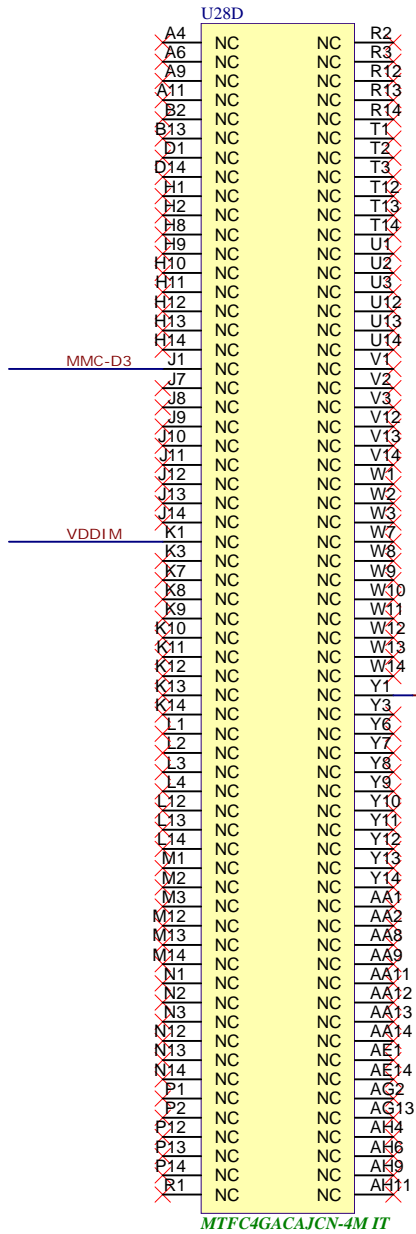
B

C

D



Title: CPLD		
A4	Number: TE0783 035-21	Rev. 02
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Title: eMMC		
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1

2

3

4

A

A

B

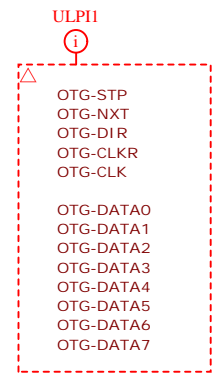
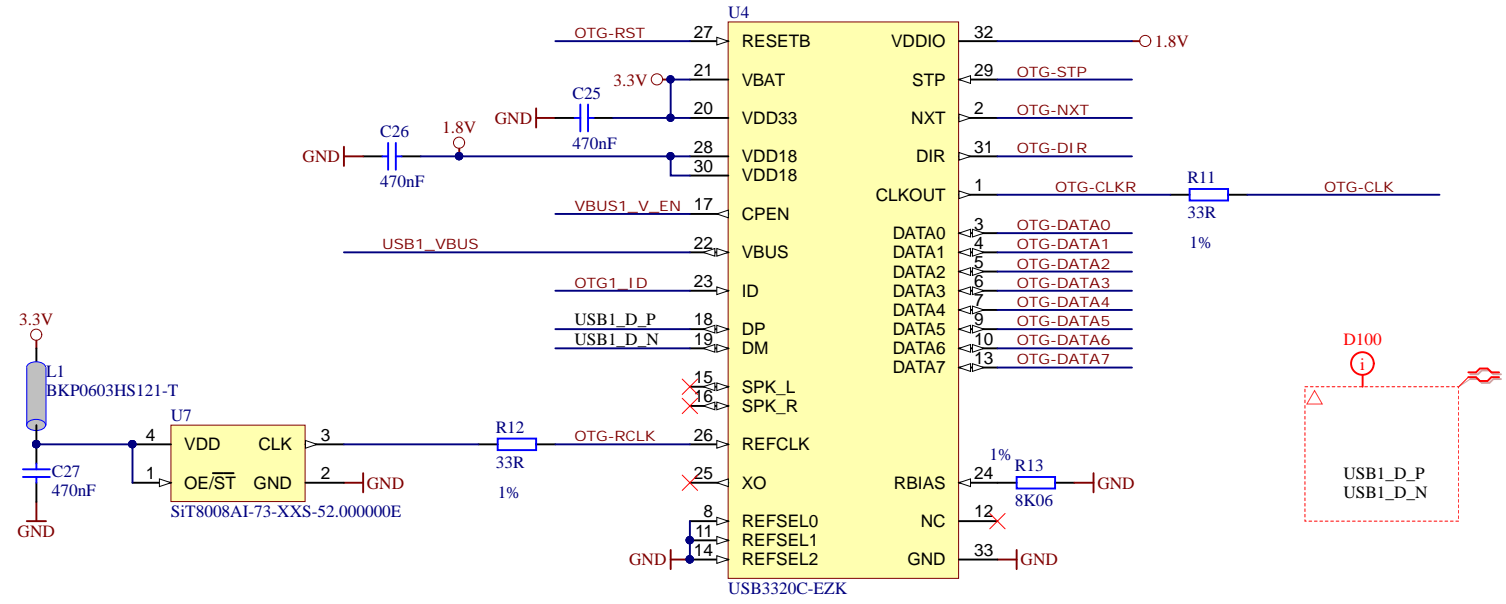
B

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C

D

D



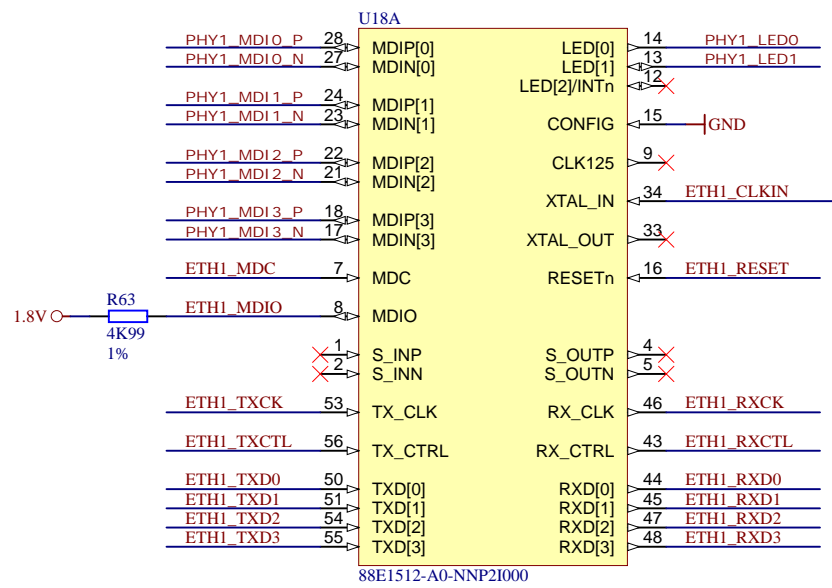
Title: USB-PHY		
A4	Number: TE0783 035-2I	Rev. 02
Date: 13.07.2018	Copyright: Trenz Electronic GmbH	Page 27 of 32
Filename: USB-PHY.SchDoc		

1

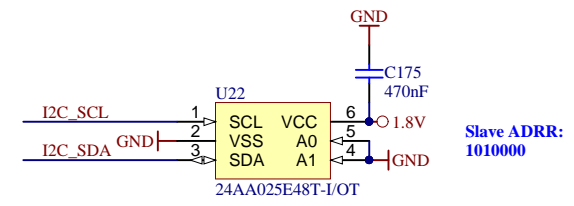
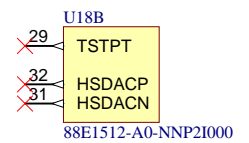
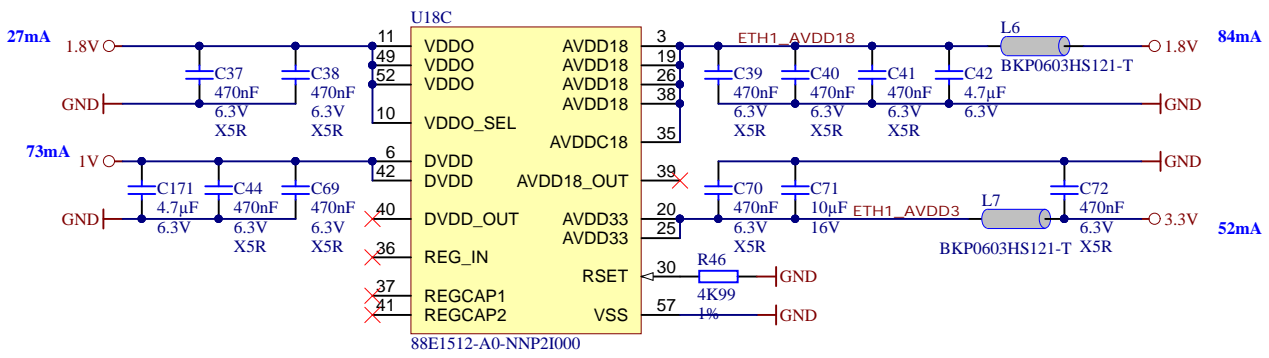
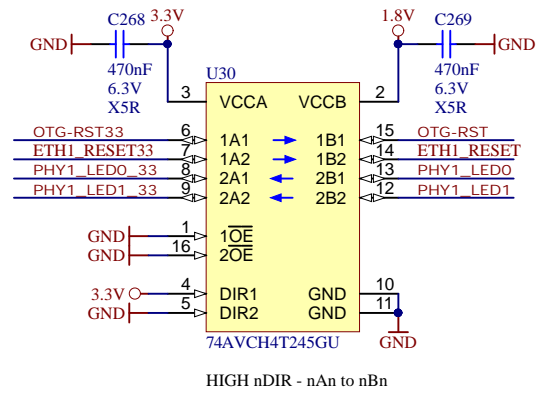
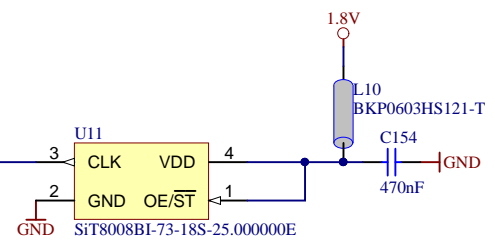
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3

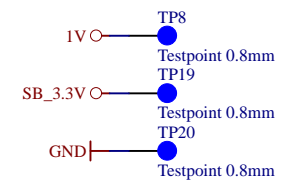
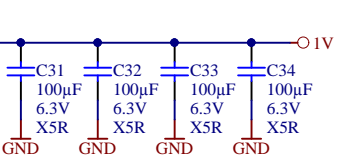
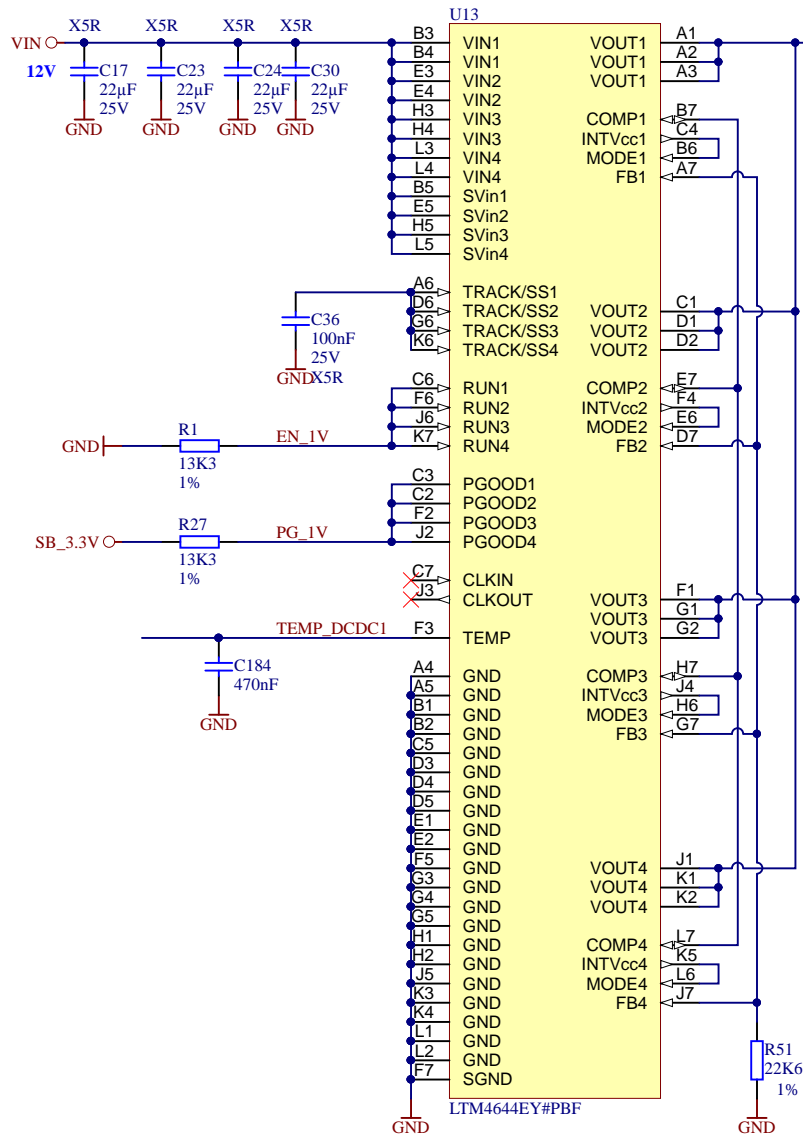
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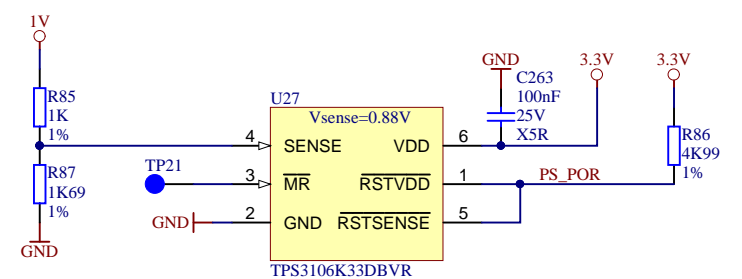
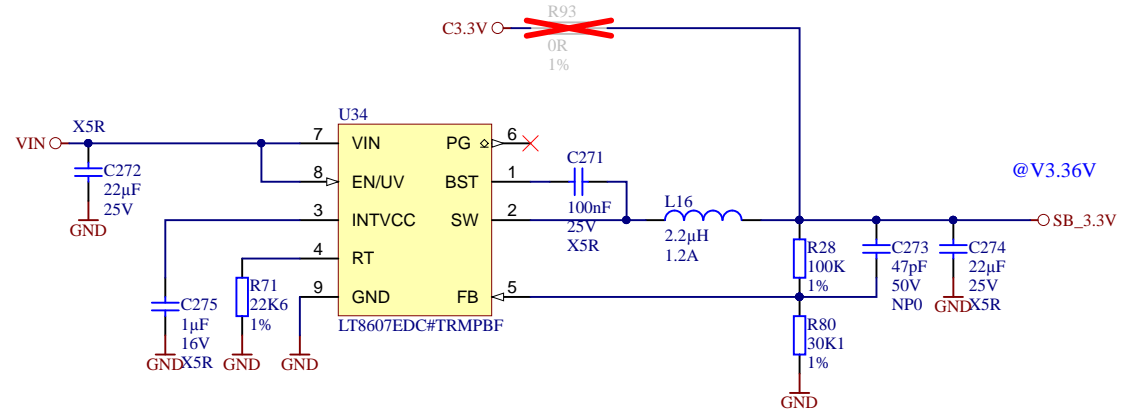
B9



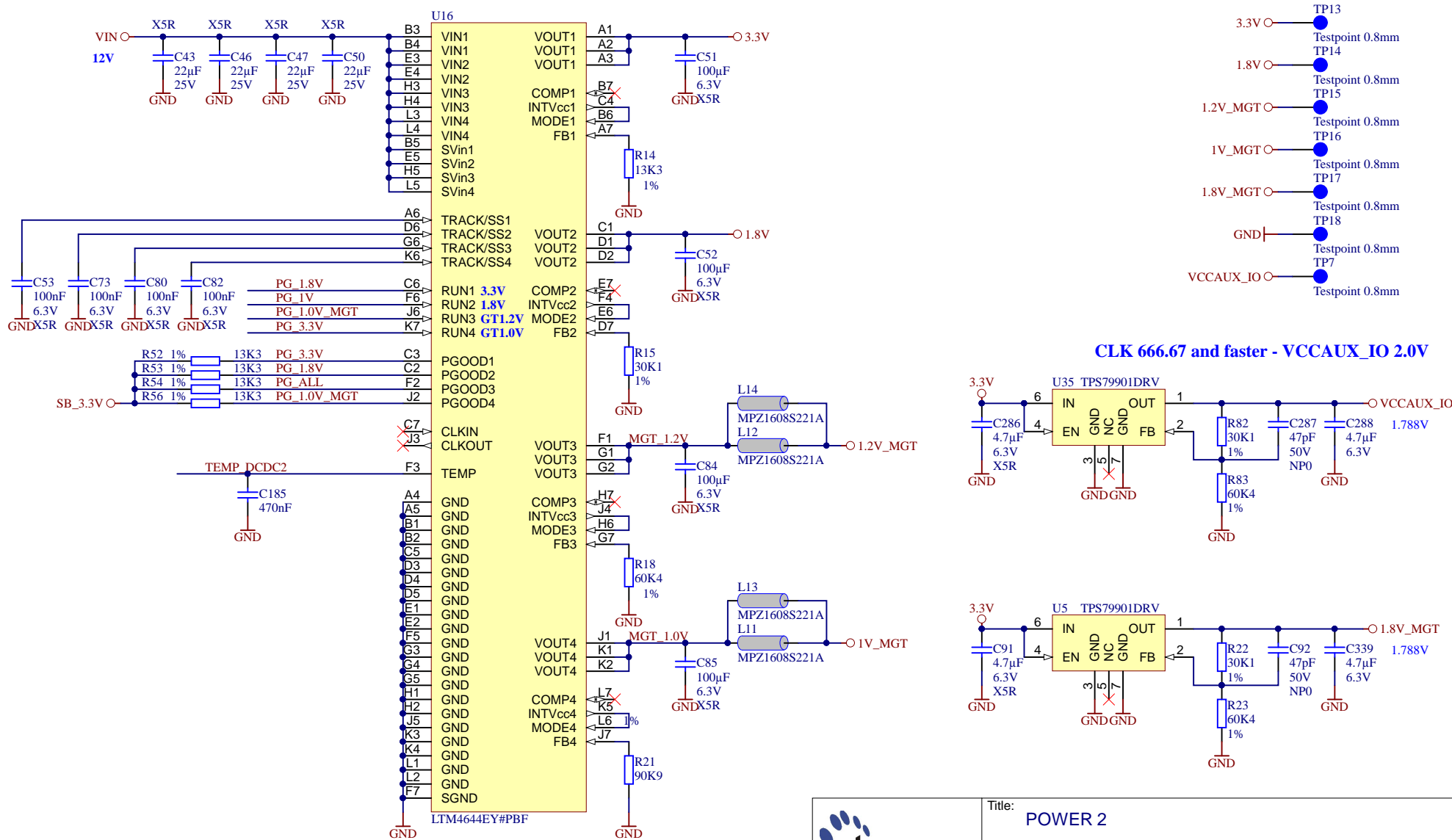
	Title: ETH_PHY1	
	A4	Number: TE0783 035-21
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Filename: ETH1.SchDoc		




R93: Do not mount when U34 mounted



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			Title: POWER 2	
			A4	Number: TE0783 035-21
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Filename: POWER2.SchDoc				

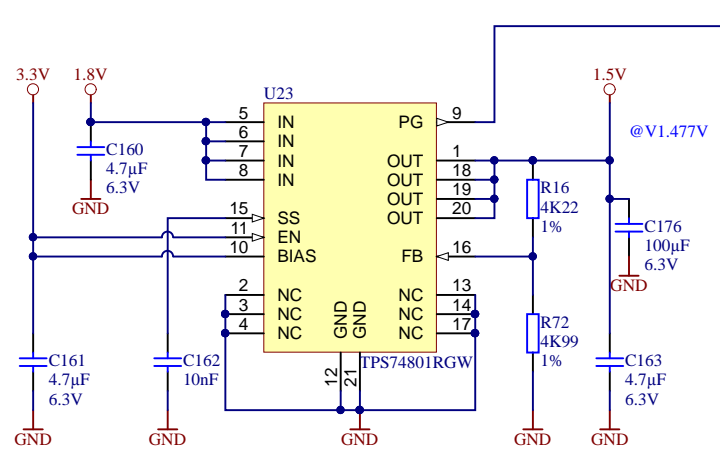
1

2

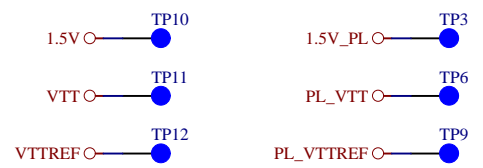
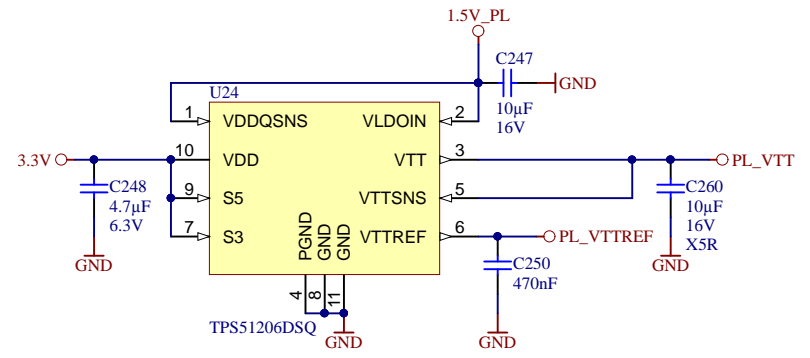
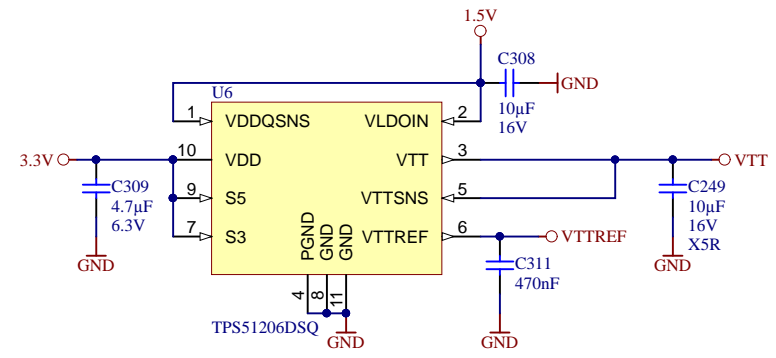
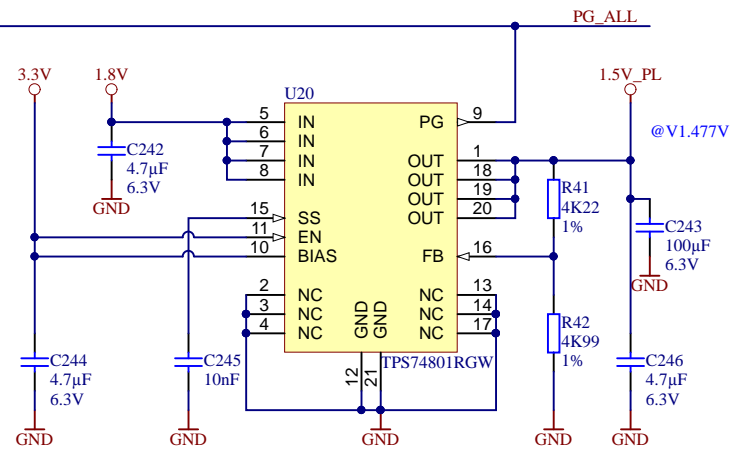
3

4

DDR3 PS



DDR3 PL



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A4	Number: TE0783 035-21	Rev. 02
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1

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1

2

3

4

REV. 02:

1) Changed power-up sequence: 3.3V next to 1.8V. MGT power domain next to 3.3V

A

A

B


B

C

C

D

D

	Title: Revision Changes		
	A4	Number: TE0783 035-2I	Rev. 02
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	Filename: Revision Changes.SchDoc		

1

2

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4