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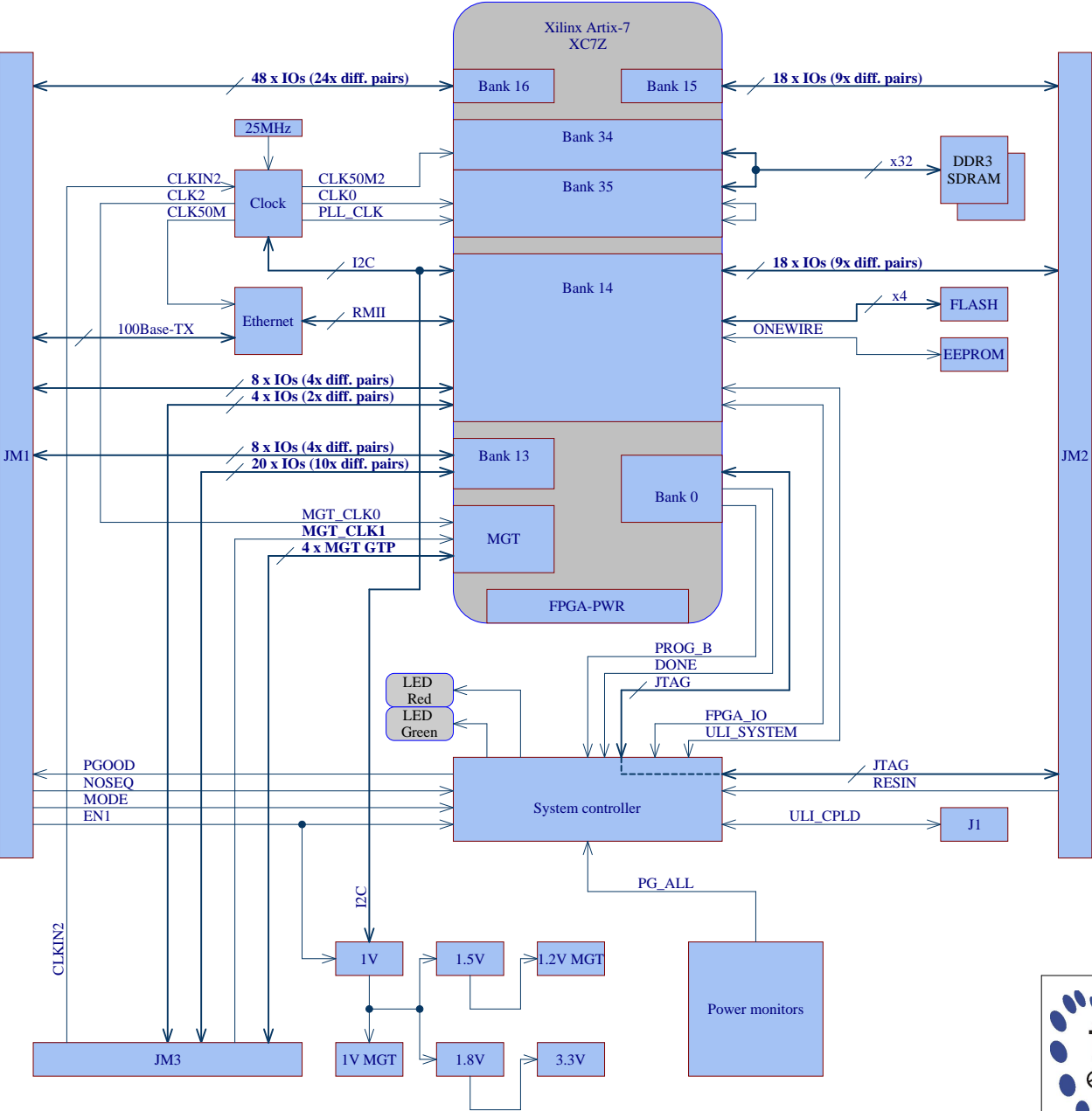
Schematics and other handouts serve for informational purposes only!

	Title:		
	A4	Number: TE0712 81136-X	Rev. 03
	Date: *	Copyright: Trenz Electronic GmbH / TT	Page 1 of 20
	Filename: Legal Notices Modules.SchDoc		

REV	Description	
-01	Initial revision	
-02		
-03	<p>1. Added Legal notices, project overview and revision changes. Updated page count and page order.</p> <p>2. Added a [D3] diode between the [INIT] and [PROG_B] signals to keep the FPGA in the reset state while [PROG_B] is low during the initial power-up.</p> <p>3. Resistors [R2] , [R68] replaced by 2K2 (were 4K87) to improve I2C stability at higher baud rates.</p> <p>4. Change obsolete ferrite beads BKP0603HS121-T to MPZ0603S121HT000.</p> <p>5. Revised power supply circuit. Change obsolete components: - EN63A0QI - MP8869SGL-Z ([U14]); - EP53F8QI - MPM3834CGPA ([U6] , [U16]).</p> <p>6. Change [Q1] power switch TPS27082LDDCR to MP5077GG-Z.</p> <p>7. Added power monitors [U10] , [U11] STM6710LWB6F. System controller pin U3.25 connected to net [PG_ALL] instead of [3.3V] .</p> <p>8. [U14] I2C interface connected to bus [PLL_SDA] / [PLL_SCL] [U1B] . Added table with device addresses on the I2C bus. A new device will be detected during a bus scan</p> <p>9. Change capacitors in net "VIN" from 47 uF 6.3 V to 22 uF 10 V for [C70] , [C80] , [C126] , [C127] , [C132] , [C176] , [C177] .</p>	VY


	Title: Revision History		
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- U_Revision Changes
- U_TE0712
- U_Power_Diagram

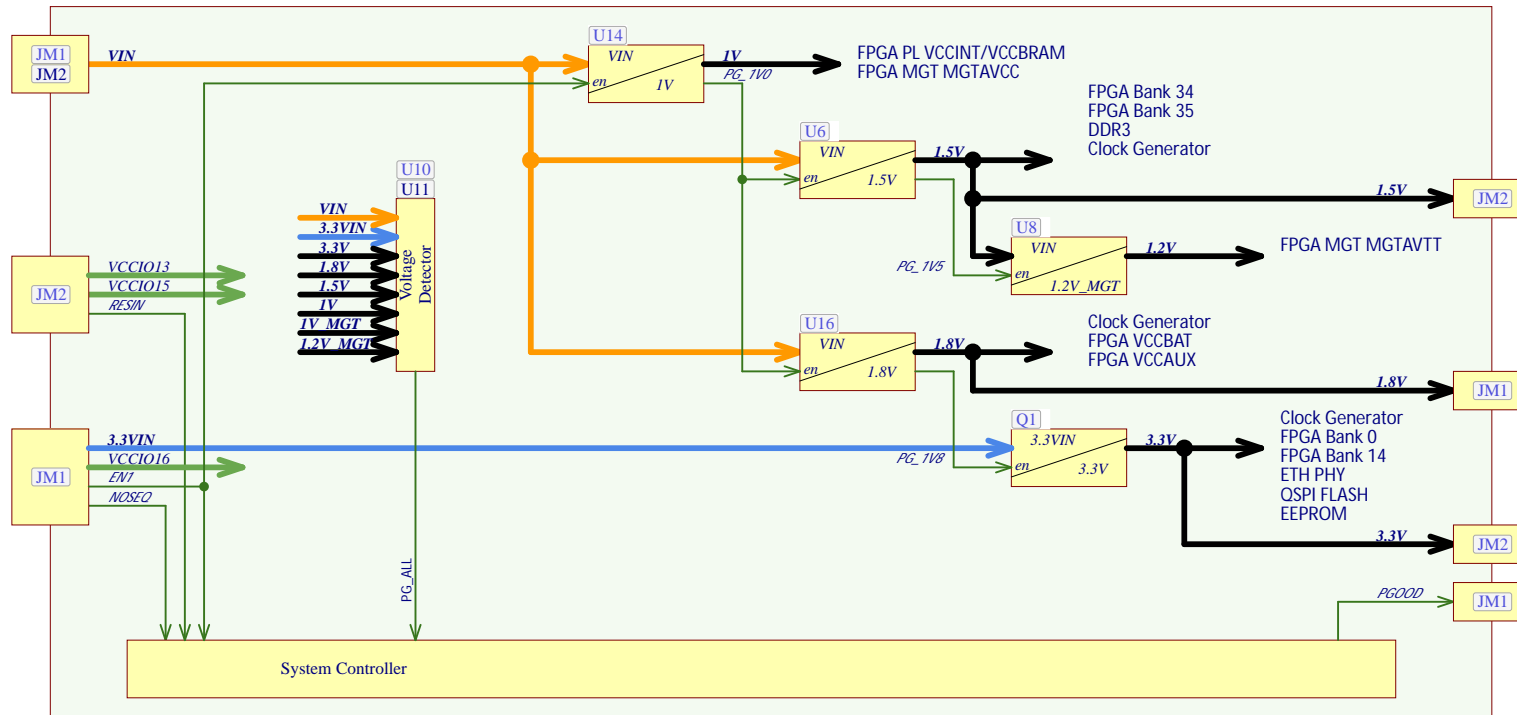


Special notes:

-
-

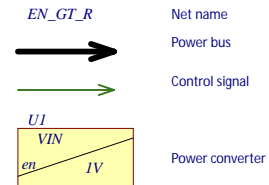
			Title: System Overview	
			A4	Number: TE0712 81136-X
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Filename: Overview.SchDoc				

Power-on sequencing:



Recommended Operating Conditions

Power Rail	Direction	Range	Tolerance	Description	Note
VIN	IN	3.3 - 5V	+/-5%	Micromodule Power	Mandatory
3.3VIN	IN	3.3V	+/-3%	Micromodule Power	Mandatory
VCCIO13	IN	1.2 - 3.3V	+/-3%	HR IO Bank13	-
VCCIO14	IN	3.3V	+/-3%	HR IO Bank14	Fixed
VCCIO15	IN	1.2 - 3.3V	+/-3%	HR IO Bank15	-
VCCIO16	IN	1.2 - 3.3V	+/-3%	HR IO Bank16	-
1.5V	OUT	1.5V	+/-3%	For Carrier card Periphery	-
1.8V	OUT	1.8V	+/-3%	For Carrier card Periphery	-
3.3V	OUT	3.3V	+/-3%	For Carrier card Periphery	-
VREF_JTAG	OUT	3.3V	+/-3%	For Carrier card Periphery	Connected to 3.3V



Title: GigaZee - Power Diagram		
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Filename: Power_Diagram.SchDoc		

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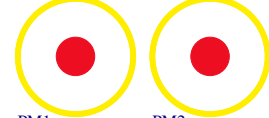
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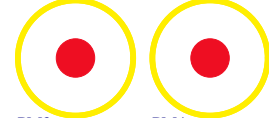
Special notes:

- .
- .

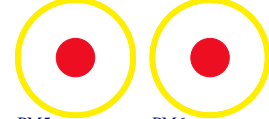
FIDU-DOT - mini FIDU-DOT - mini



PM1 FIDU-DOT - mini PM2 FIDU-DOT - mini

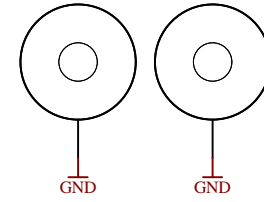


PM3 FIDU-DOT - mini PM4 FIDU-DOT - mini

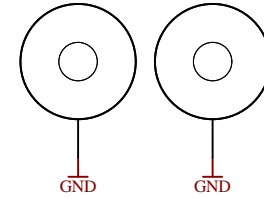


PM5 PM6

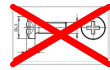
Mount.Hole 3.2mm Mount.Hole 3.2mm



Mount.Hole 3.2mm Mount.Hole 3.2mm



Top of Board



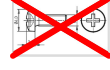
Screw M3x4



Screw M3x4



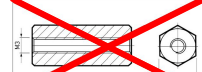
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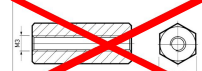
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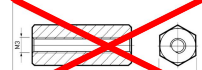
Standoff M3x8 II



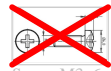
Standoff M3x8 II



Standoff M3x8 II



Standoff M3x8 II



Screw M3x6



Screw M3x6



Screw M3x6



Screw M3x6

Serial
Serial
Serialnumber 6,3 x 6.3mm

SerialI
TE Address Overlay
LOGO ADDRESS

Assembly variant	81136-X
Created by	MR
Modified by	MR
Modified at	2021-02-16
SVN Revision	14002



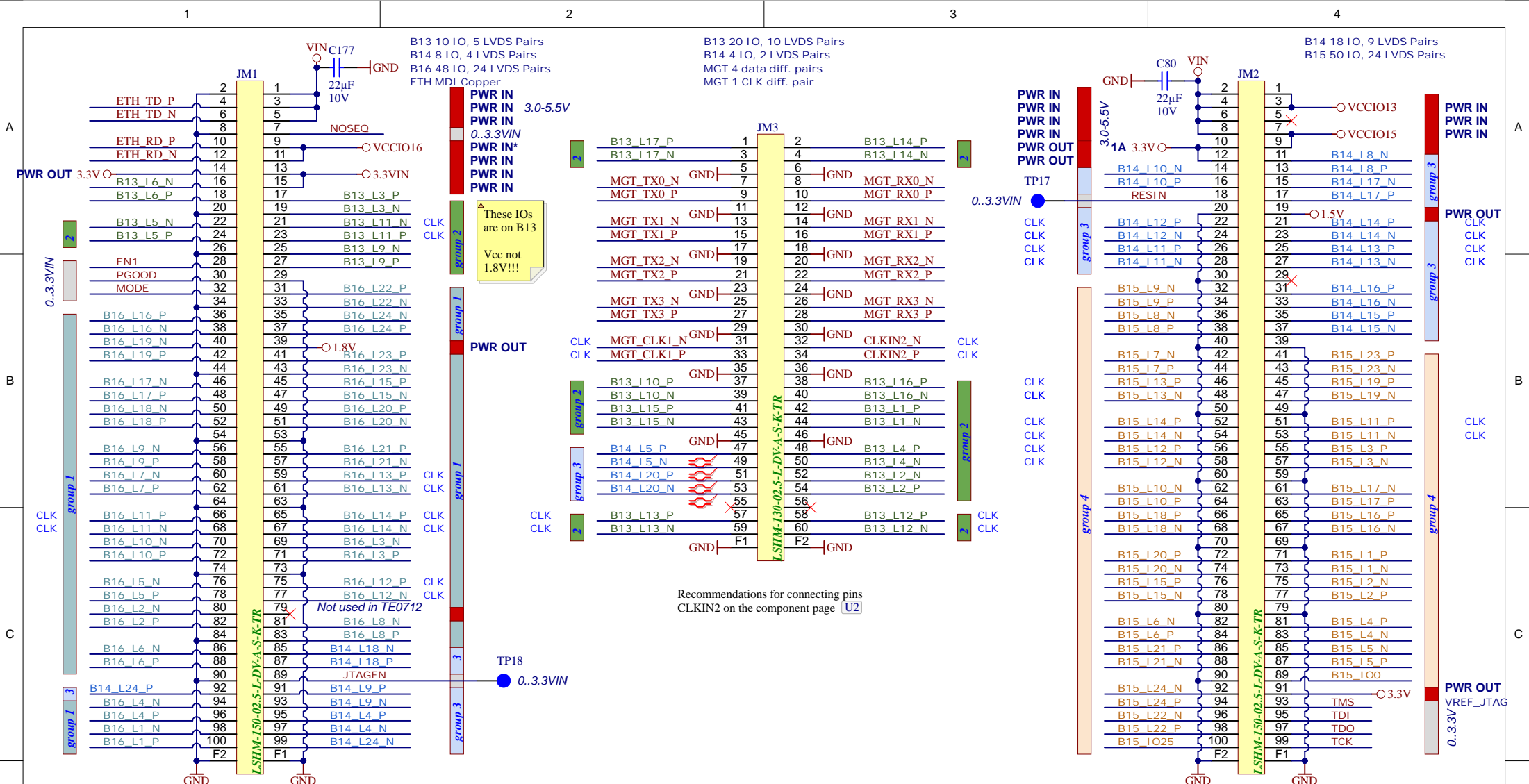
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B13 10 IO, 5 LVDS Pairs
 B14 8 IO, 4 LVDS Pairs
 B16 48 IO, 24 LVDS Pairs
 ETH MDI Copper

B13 20 IO, 10 LVDS Pairs
 B14 4 IO, 2 LVDS Pairs
 MGT 4 data diff. pairs
 MGT 1 CLK diff. pair

B14 18 IO, 9 LVDS Pairs
 B15 50 IO, 24 LVDS Pairs

PWR IN
 PWR IN
 PWR IN
 PWR IN*
 PWR IN
 PWR IN
 PWR IN

3.0-5.5V

These IOs are on B13
 Vcc not 1.8V!!!

Recommendations for connecting pins
 CLKIN2 on the component page [U2](#)

PWR OUT 3.3V - 1A
 PWR OUT 1.8V - 1A
 PWR OUT 1.5V - 1A



Title: B2B		
A4	Number: TE0712 81136-X	Rev. 03
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A

B

C

D

A

B

C

D

1

2

3

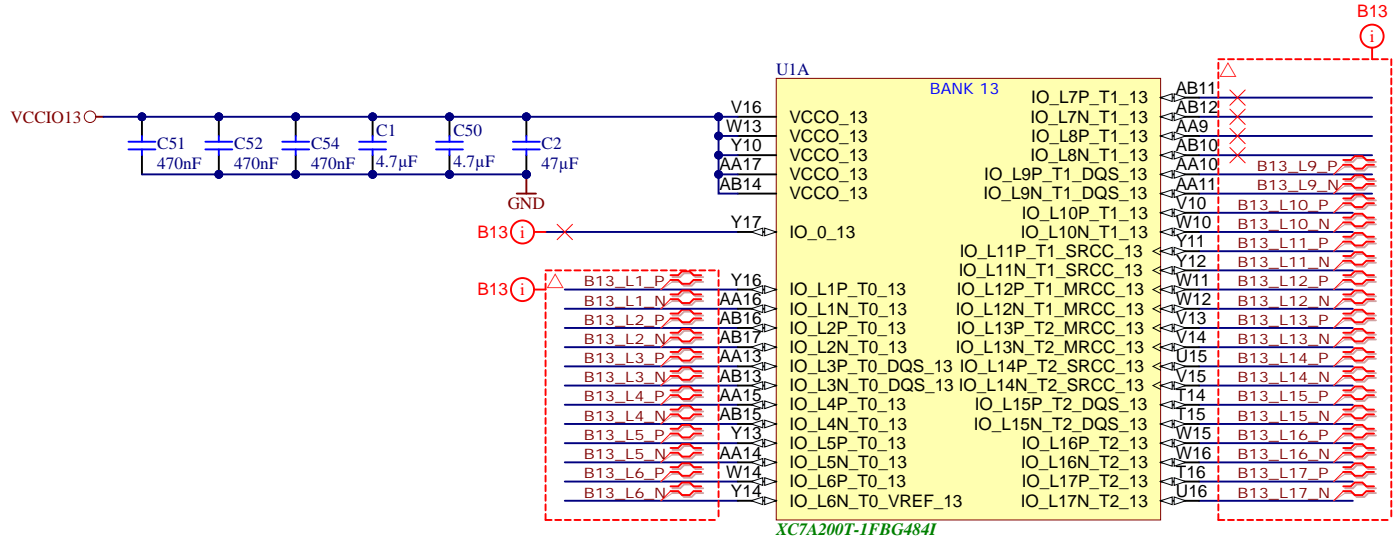
4

1

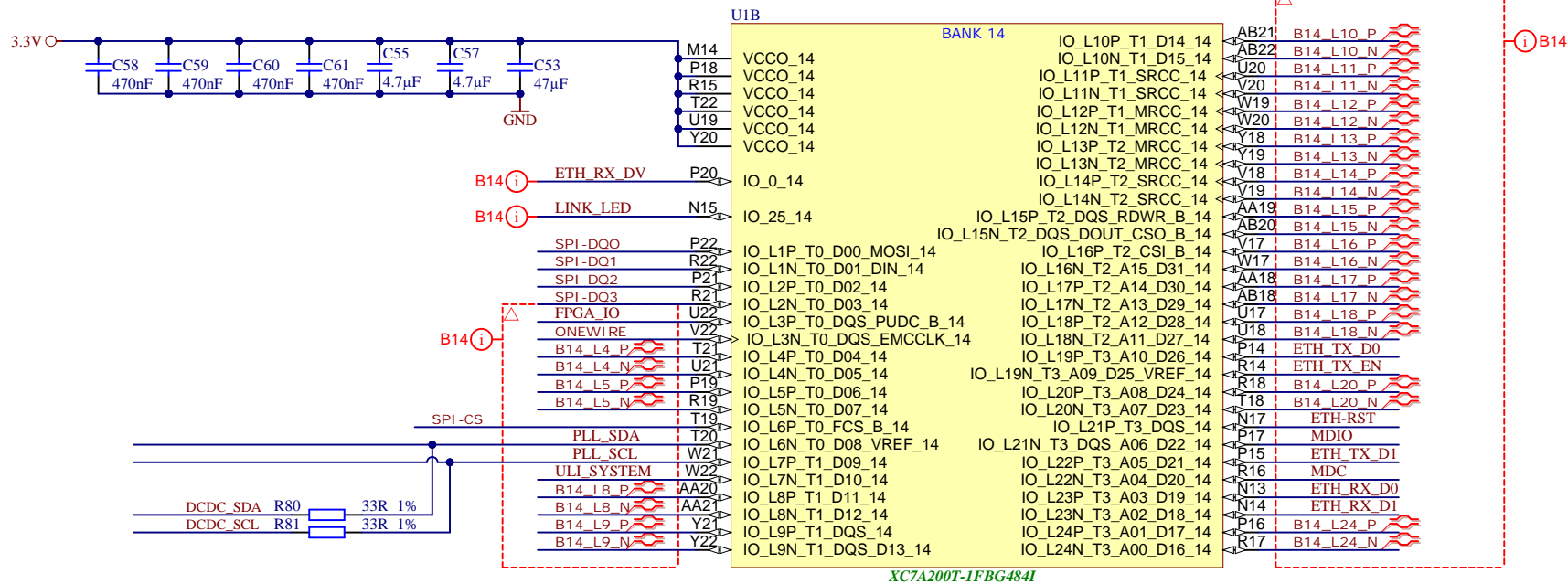
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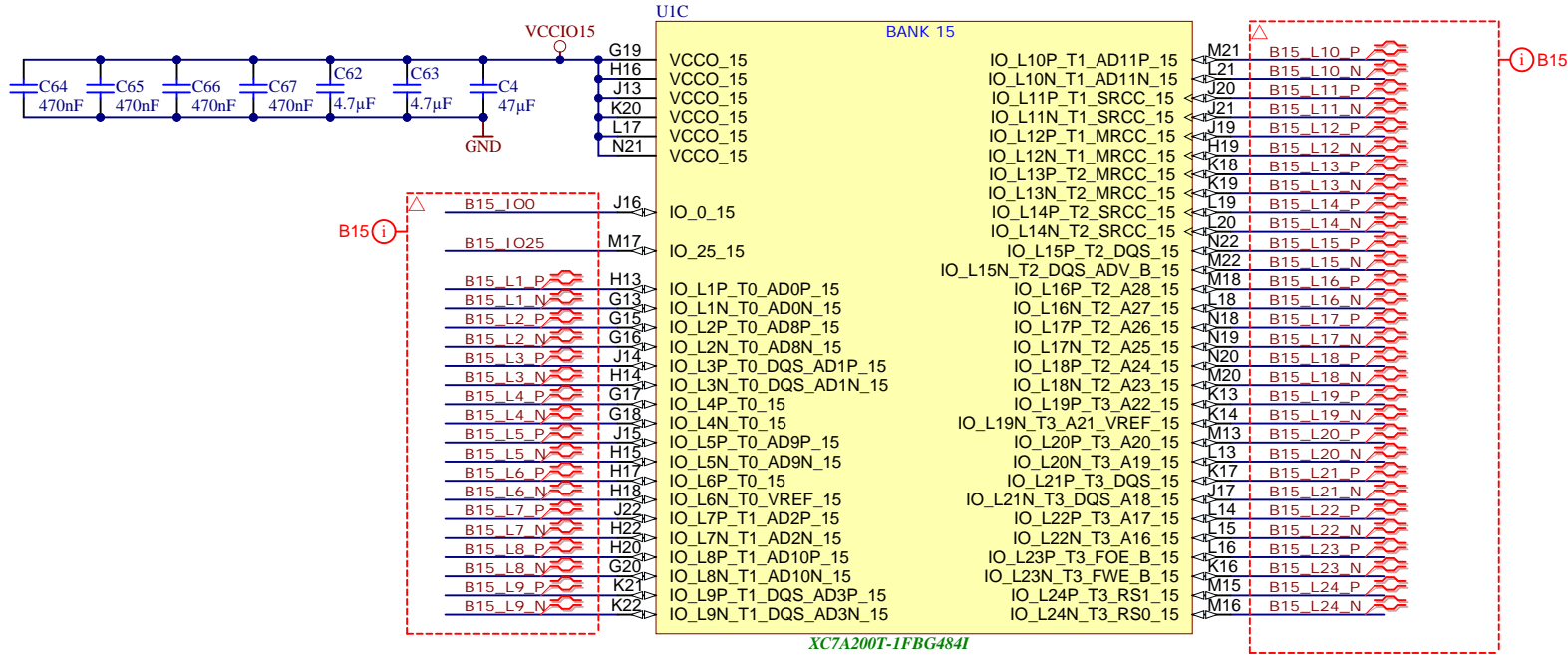
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Date: 2015-12-09	Copyright: Trenz Electronic GmbH	Page 7 of 20
Filename: B13.SchDoc		



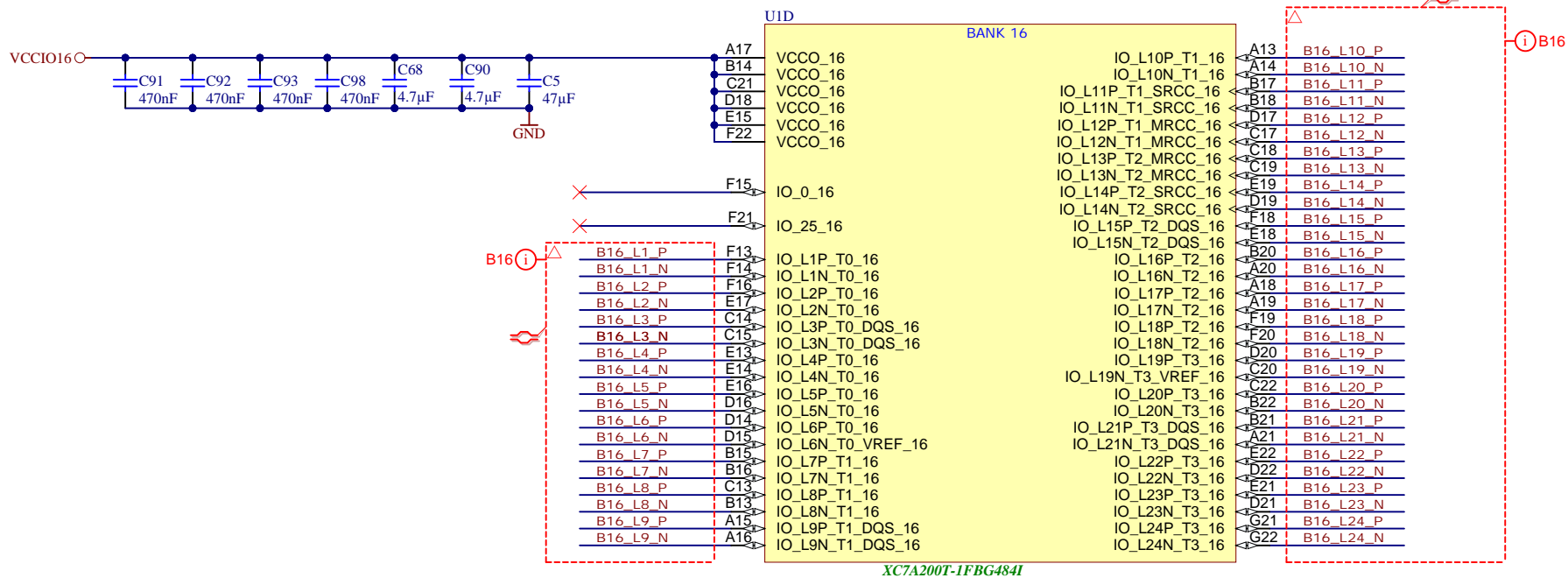
I2C bus addresses		
UIB	FPGA B14	h**
U2	Clock generator	h70
U14	DCDC VCCINT	h61



Title: B14		
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Filename: B14.SchDoc		



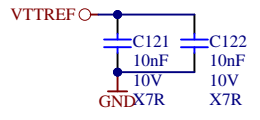
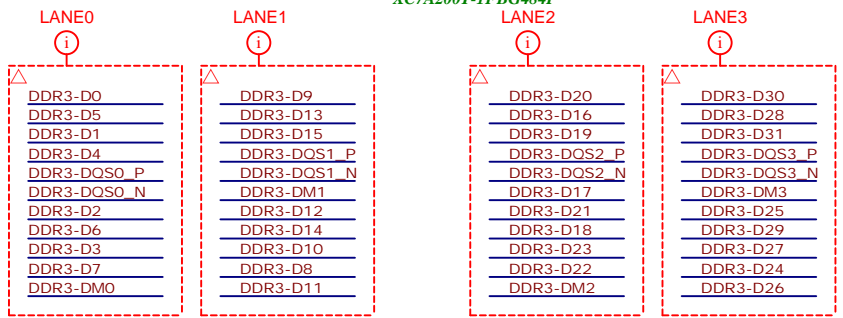
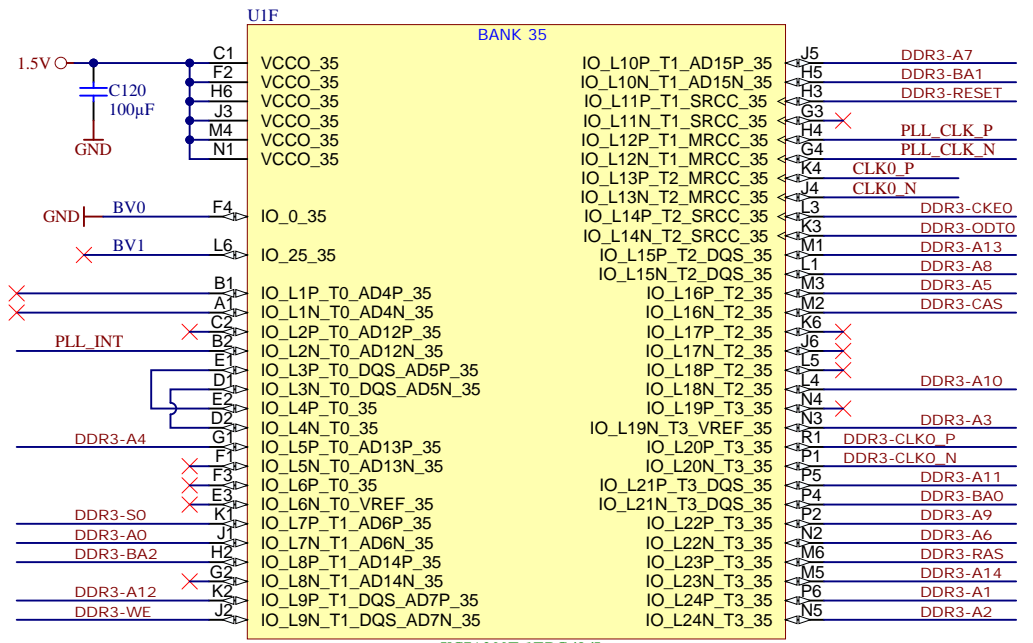
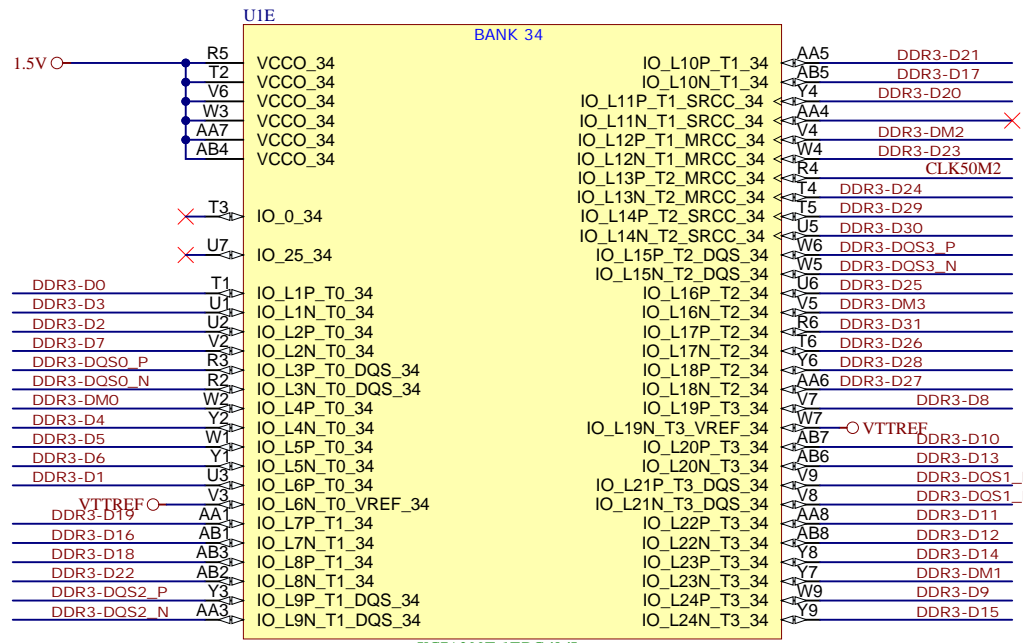
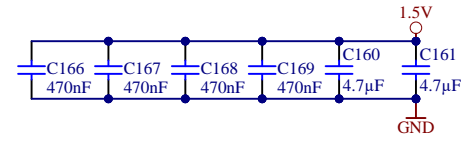
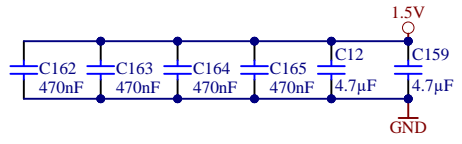
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A4	Number: TE0712 81136-X	Rev. 03
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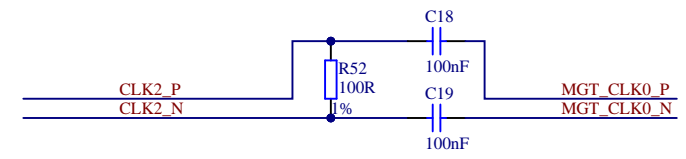
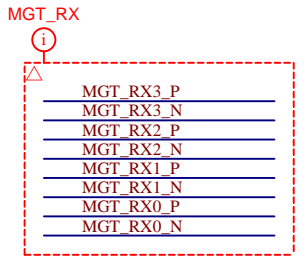
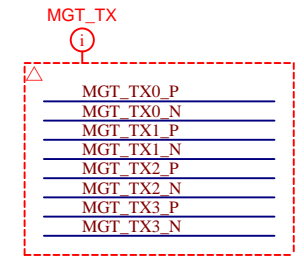
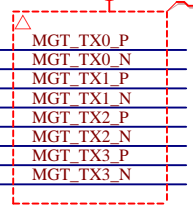
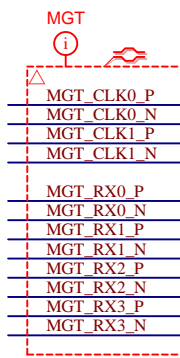
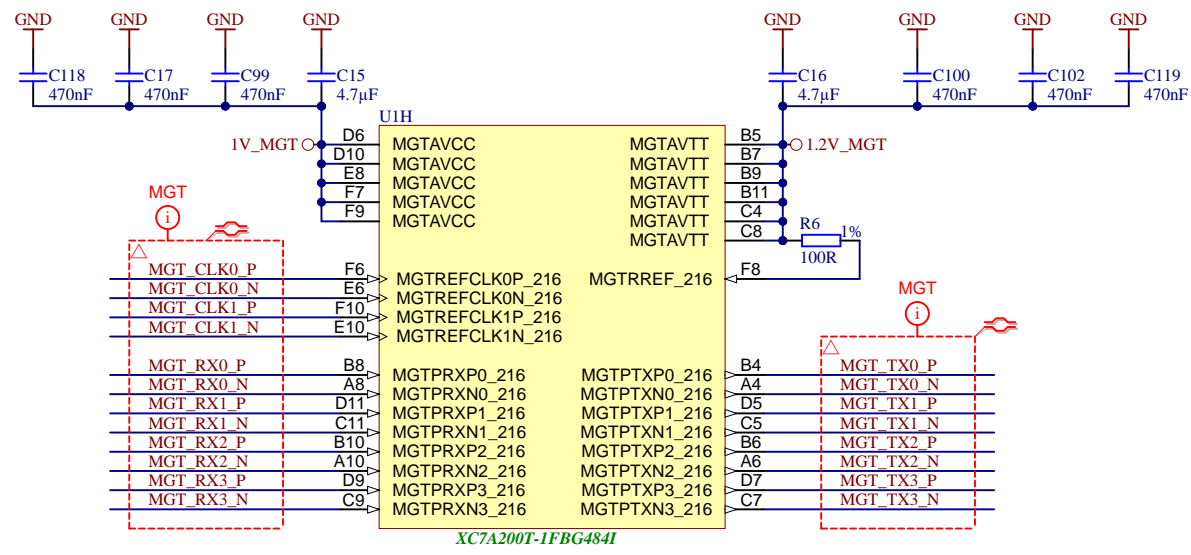
XC7A200T-1FBG484I



Title: B16		
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Title: B34		
A4	Number: TE0712 81136-X	Rev. 03
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Filename: B34.SchDoc		

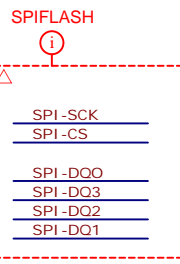
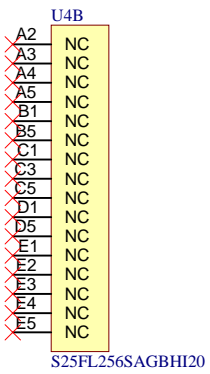
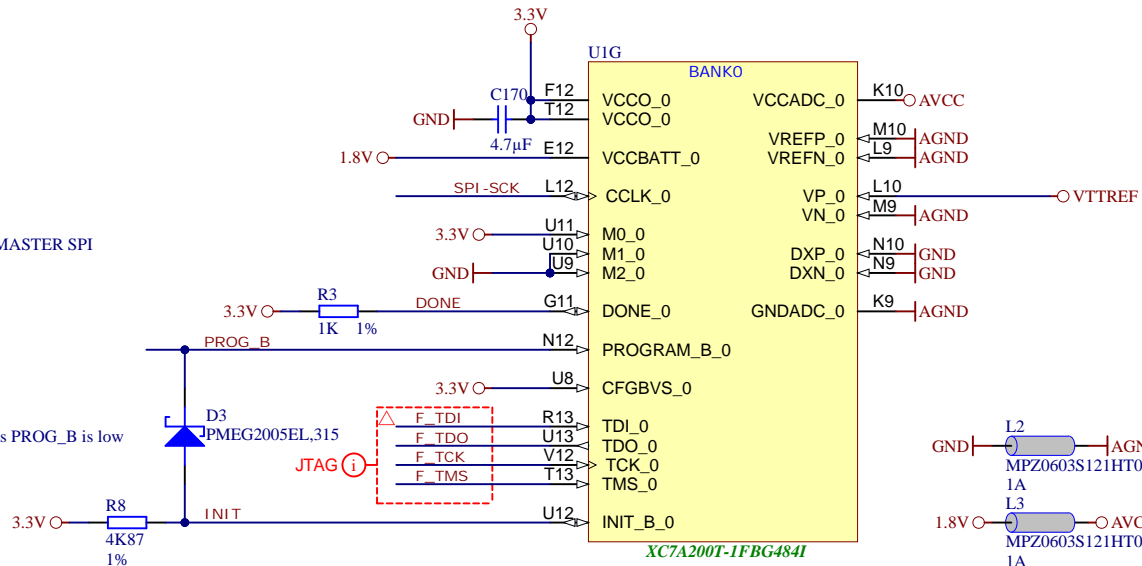


	Title: MGT	
	A4	Number: TE0712 81136-X
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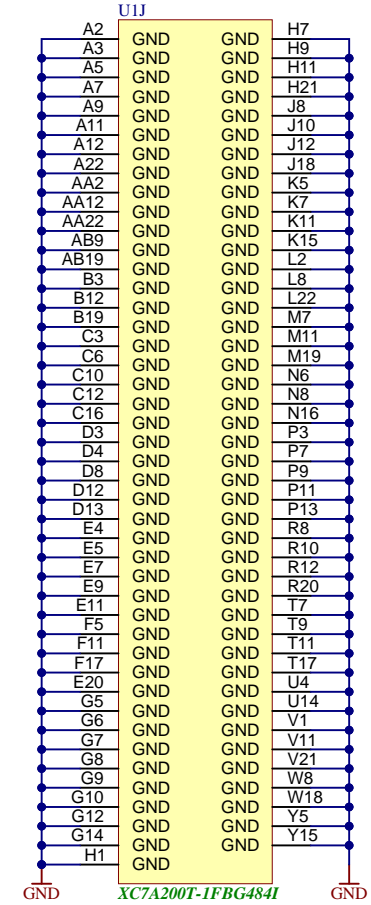
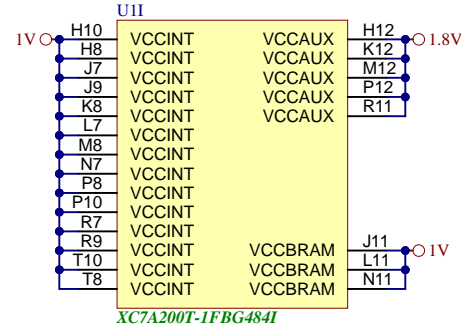
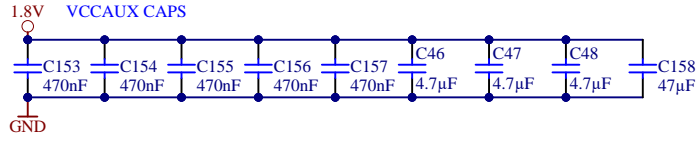
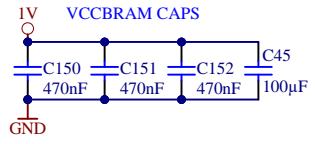
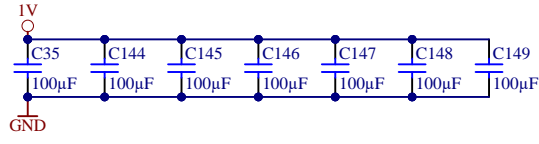
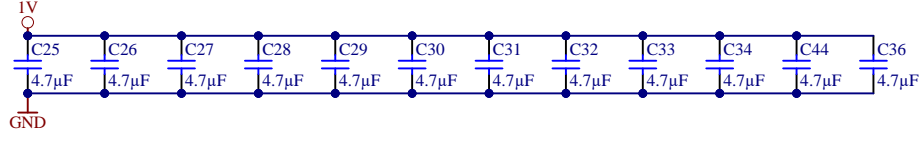
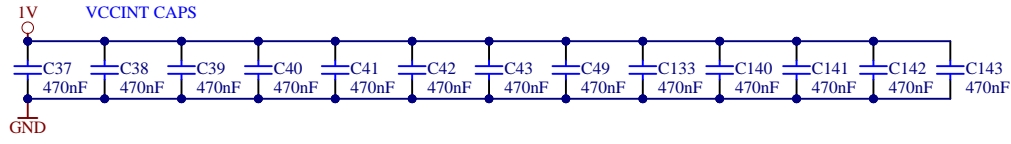
BOOTMODE = MASTER SPI

D3 keeps INIT low as long as PROG_B is low

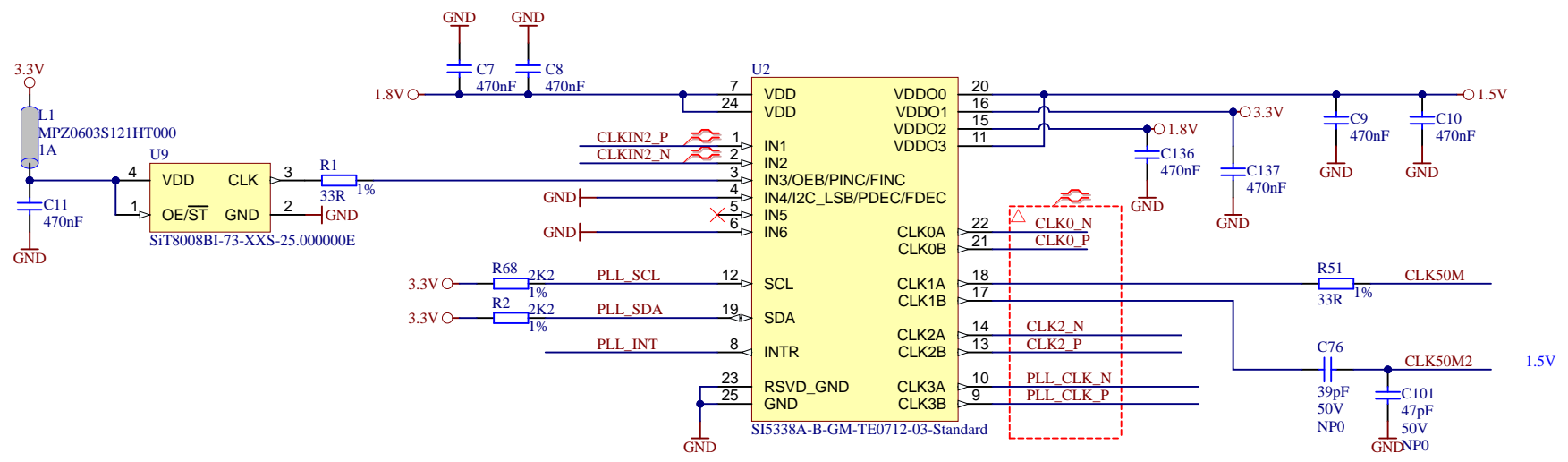


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Title: CFG		
A4	Number: TE0712 81136-X	Rev. 03
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Title: PWR		
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Filename: FPGA-PWR.SchDoc		



Datasheet SI5338:

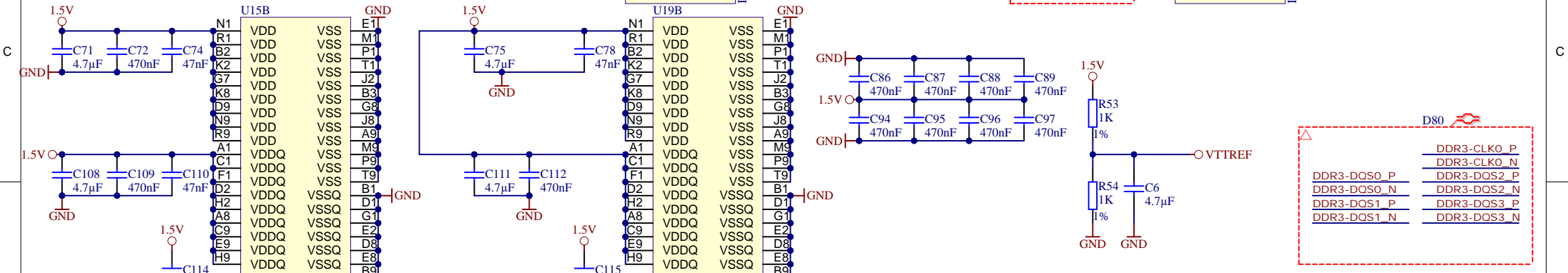
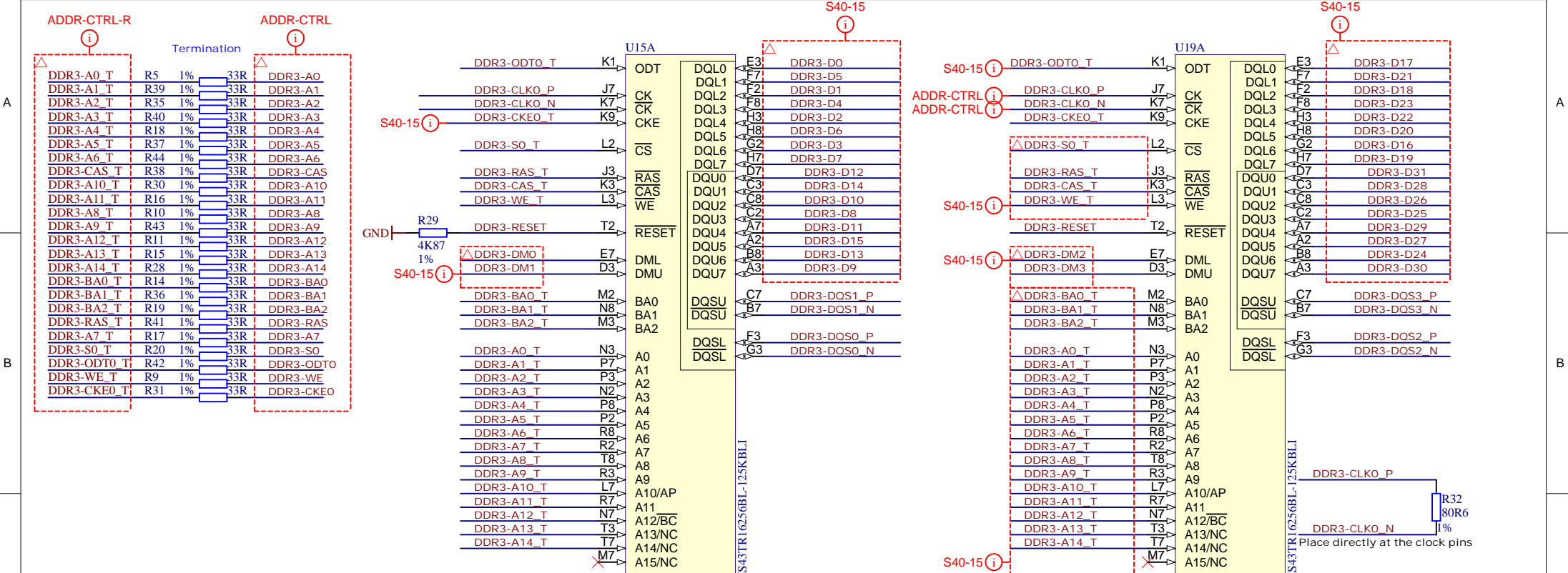
IN1/IN2

These pins are used as the main differential clock input or as the XTAL input. See "3.2. Input Stage" on page 19, Figure 3 and Figure 4, for connection details. Clock inputs to these pins must be ac-coupled. Keep the traces from pins 1,2 to the crystal as short as possible and keep other signals and radiating sources away from the crystal.

When not in use, leave IN1 unconnected and IN2 connected to GND.

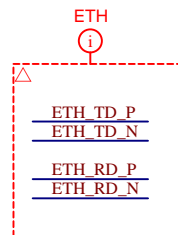
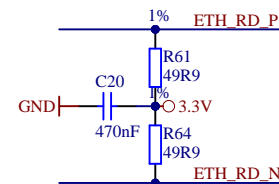
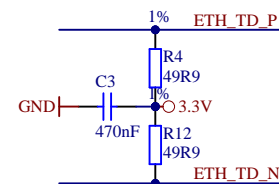
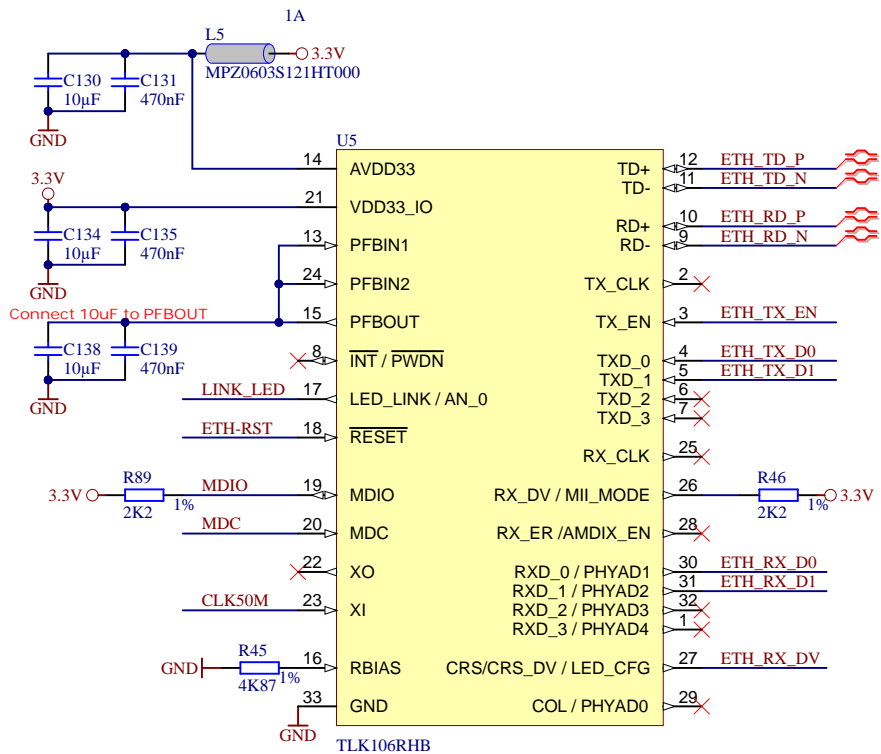


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A4	Number: TE0712 81136-X	Rev. 03
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Title: **DDR3**

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	Title: ETH		
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	Filename: ETHERNET.SchDoc		

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A

A

B

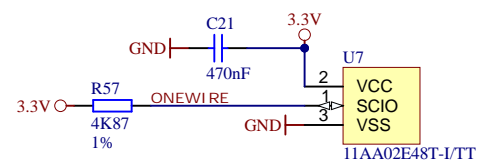
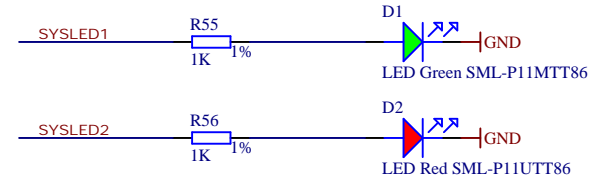
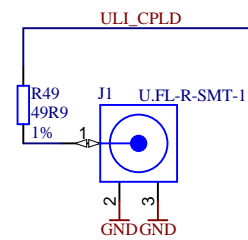
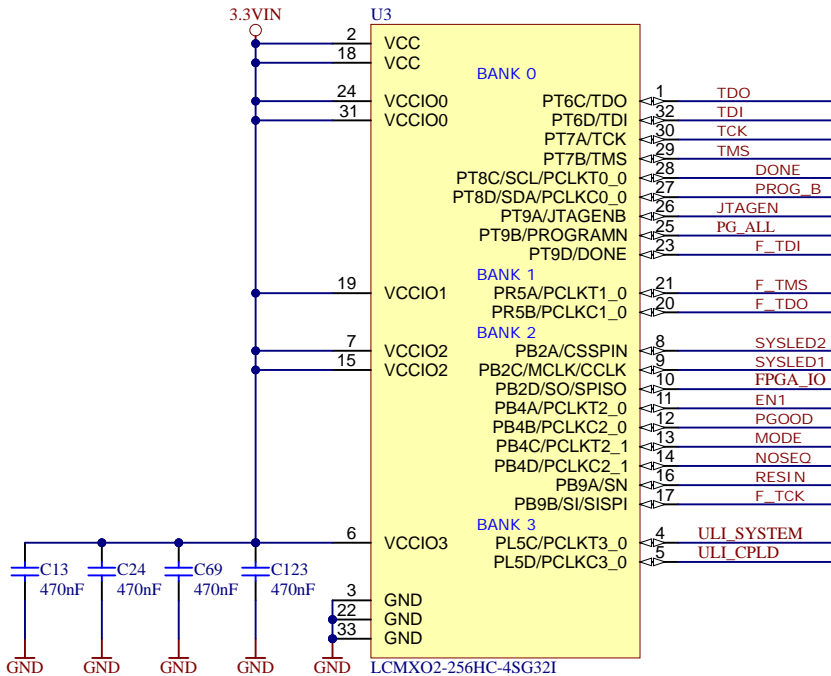
B


C

C

D

D



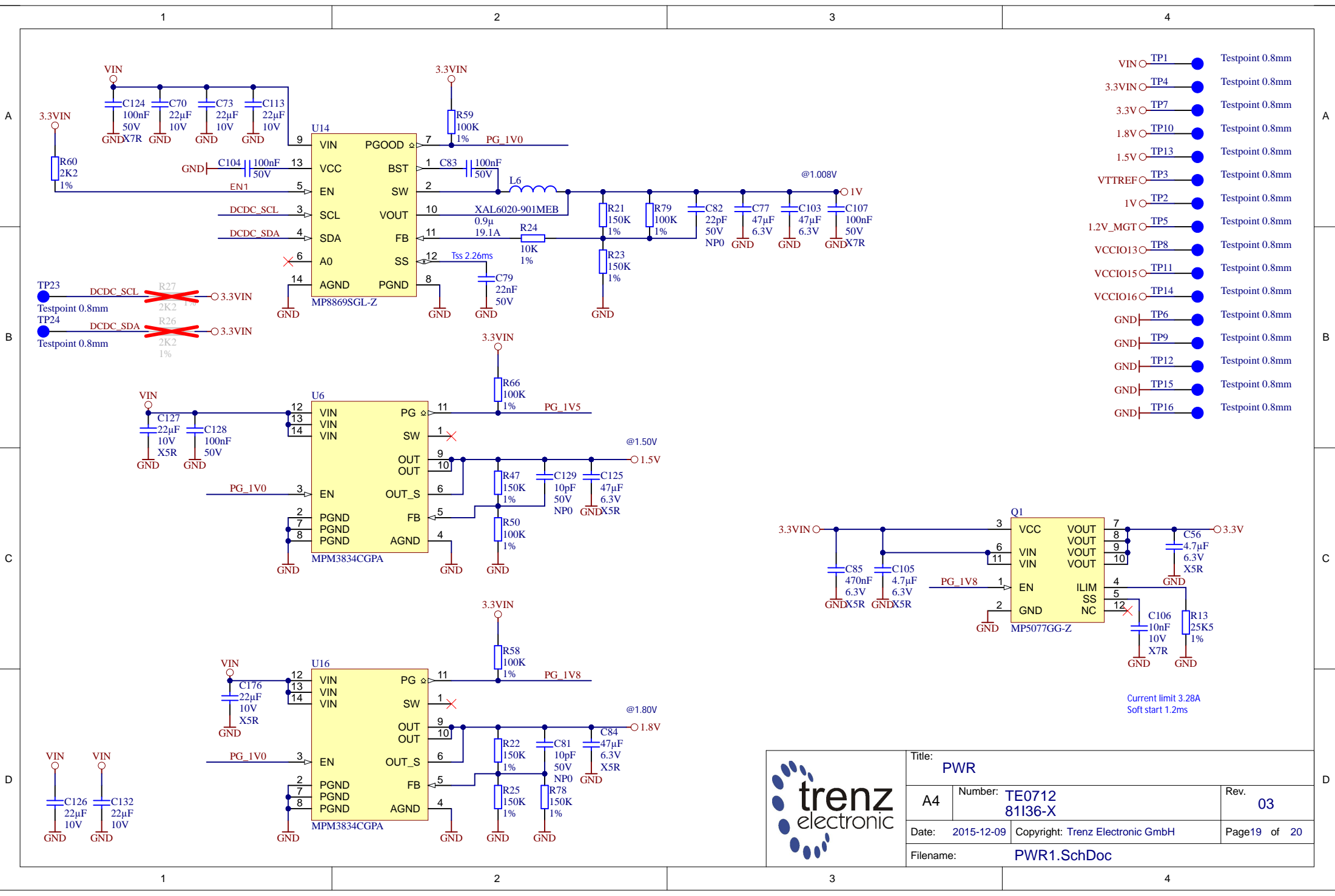
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			A4	Number: TE0712 81136-X
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4



- VIN ○ TP1 ● Testpoint 0.8mm
- 3.3VIN ○ TP4 ● Testpoint 0.8mm
- 3.3V ○ TP7 ● Testpoint 0.8mm
- 1.8V ○ TP10 ● Testpoint 0.8mm
- 1.5V ○ TP13 ● Testpoint 0.8mm
- VTTREF ○ TP3 ● Testpoint 0.8mm
- 1V ○ TP2 ● Testpoint 0.8mm
- 1.2V_MGT ○ TP5 ● Testpoint 0.8mm
- VCCIO13 ○ TP8 ● Testpoint 0.8mm
- VCCIO15 ○ TP11 ● Testpoint 0.8mm
- VCCIO16 ○ TP14 ● Testpoint 0.8mm
- GND ○ TP6 ● Testpoint 0.8mm
- GND ○ TP9 ● Testpoint 0.8mm
- GND ○ TP12 ● Testpoint 0.8mm
- GND ○ TP15 ● Testpoint 0.8mm
- GND ○ TP16 ● Testpoint 0.8mm



Title: PWR		
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Current limit 3.28A
Soft start 1.2ms

1

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4

A

A

B

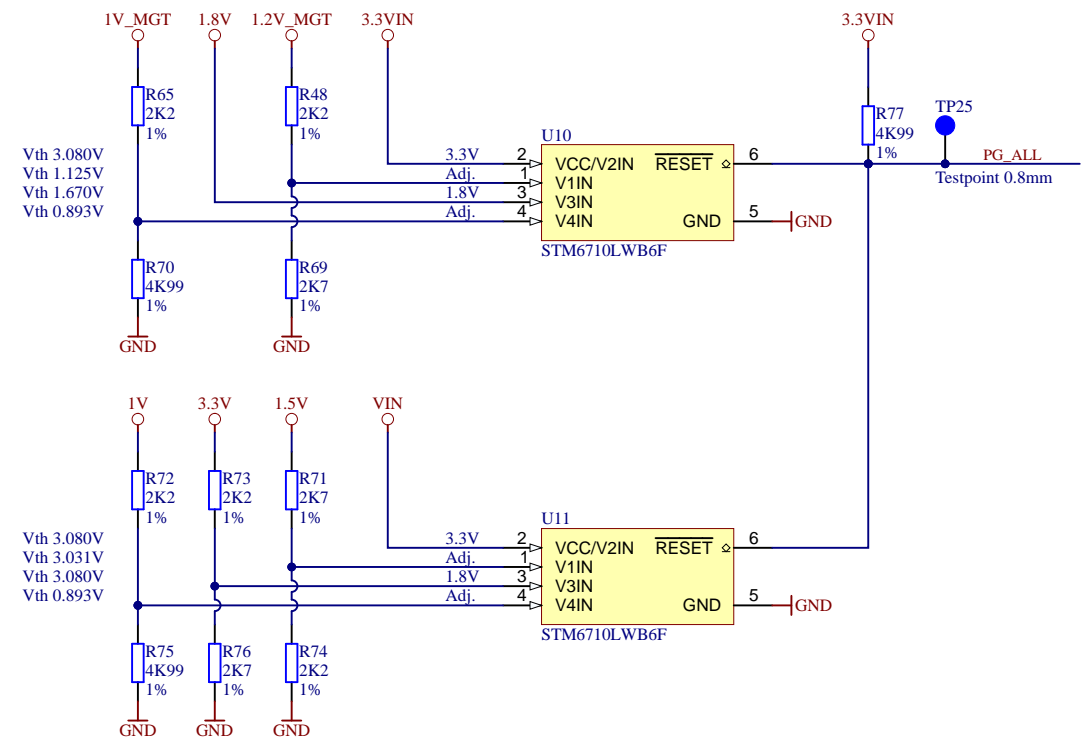
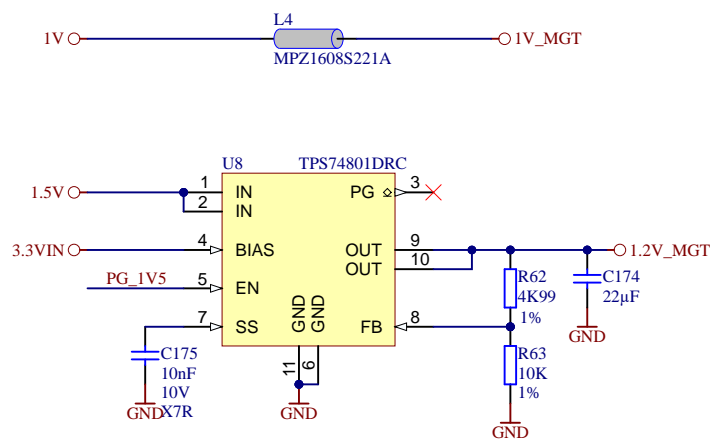

B

C

C

D

D

Title: PWR		
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