

LCR CHASSIS MANAGER

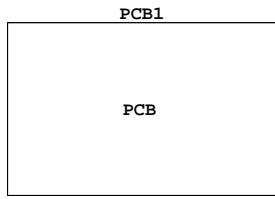
9/9/2024:
Removed C31, C48-C50, C121, C124, C440-C443, C455-C457, C460-C464, C532-C534

9/10/2024:
Reduced size of R37, R38, R207, R208, R228, R232, R233, R417 from 0402 to 0201
Reduced size of C54; C55, from 0603 to 0402

10/22/2024:
Changed part number of U35 from 88E1116R to 88E1512
Added L13, L15, C31, C48, C49
Removed C34, C38, C39, C41, C52, R15, R46-R49, R245, R247, R248

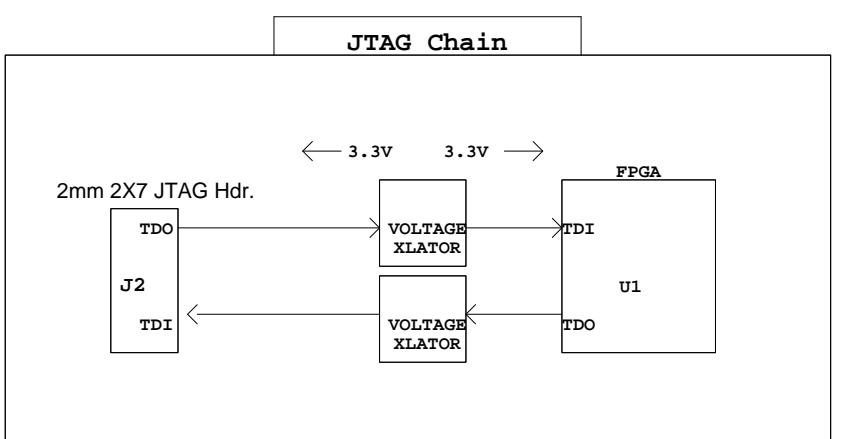
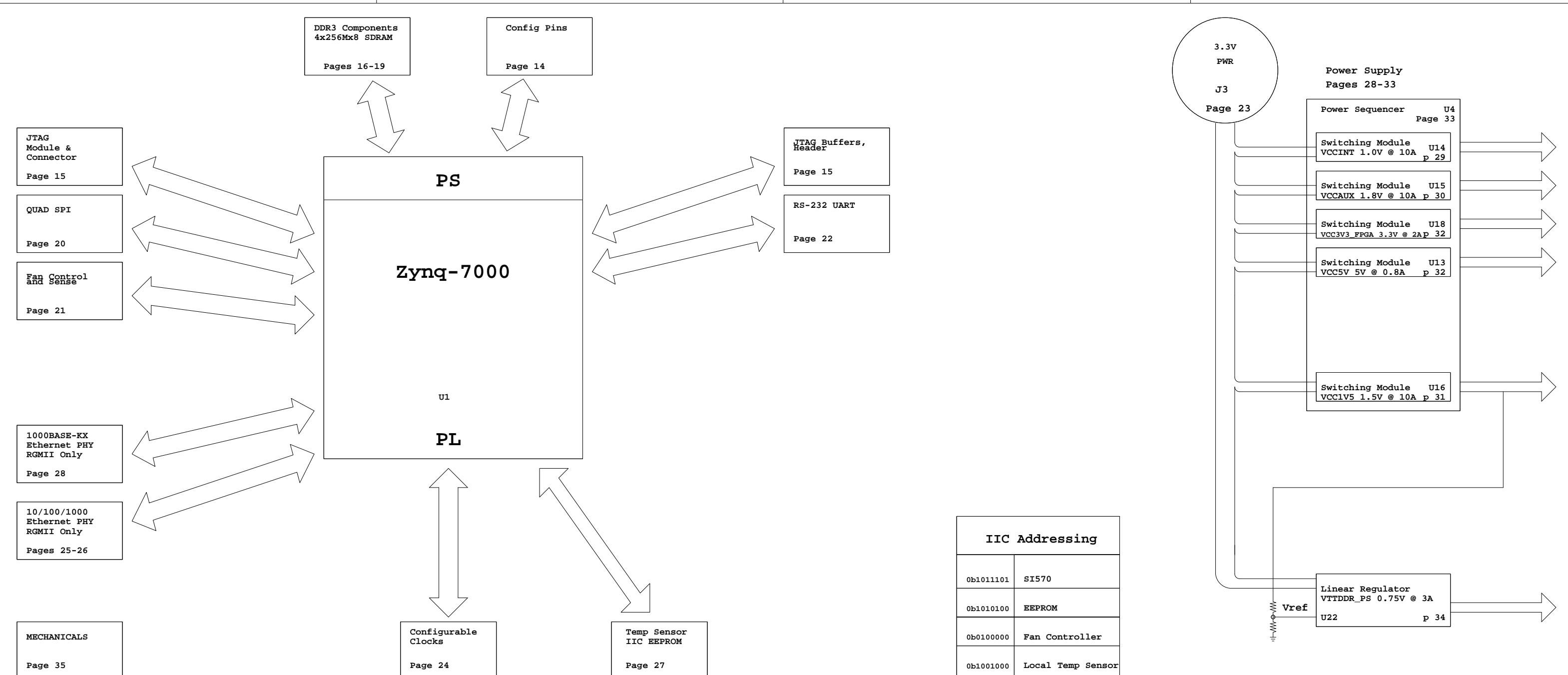
10/31/2024:
Disconnected 4 mounting holes from GND and connected to CHASSIS-1_GND
Disconnected 4 mounting holes from GND and connected to CHASSIS-2_GND
Added C36, C38, C41, C121 between CHASSIS-1_GND and GND
Added C34, C50, C52, C121 between CHASSIS-2_GND and GND
Swapped some DDR3 DQ signals within byte groupings 0, 1, 2, 3

11/8/2024:
Removed C433, C434, C444, C465-C467
Changed C148 part number to C1608X5R1A106K080AC
Changed PCB part number from 7PC-000-0455.PCB to 7PC-000-0455



TRIPLE CROWN

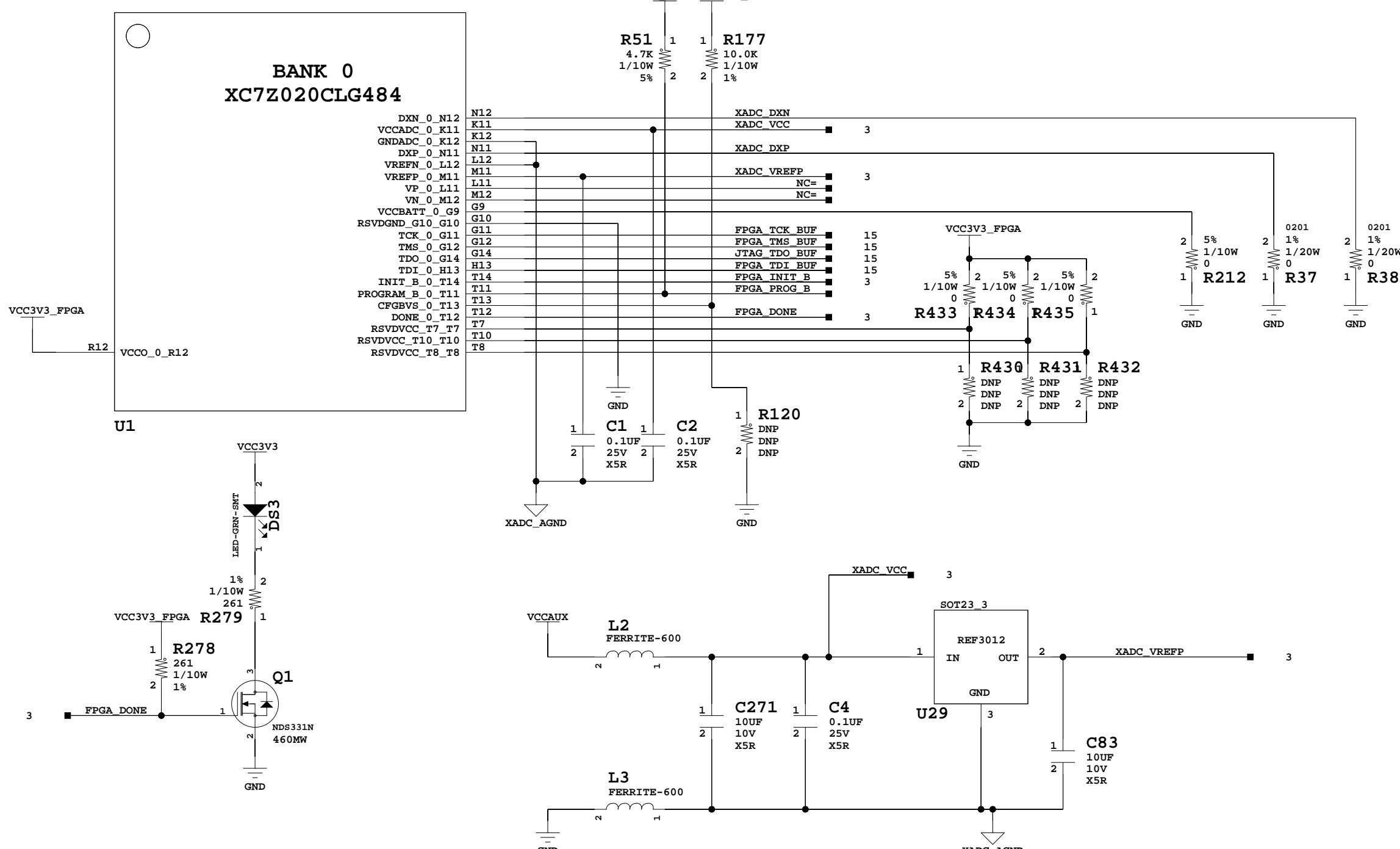
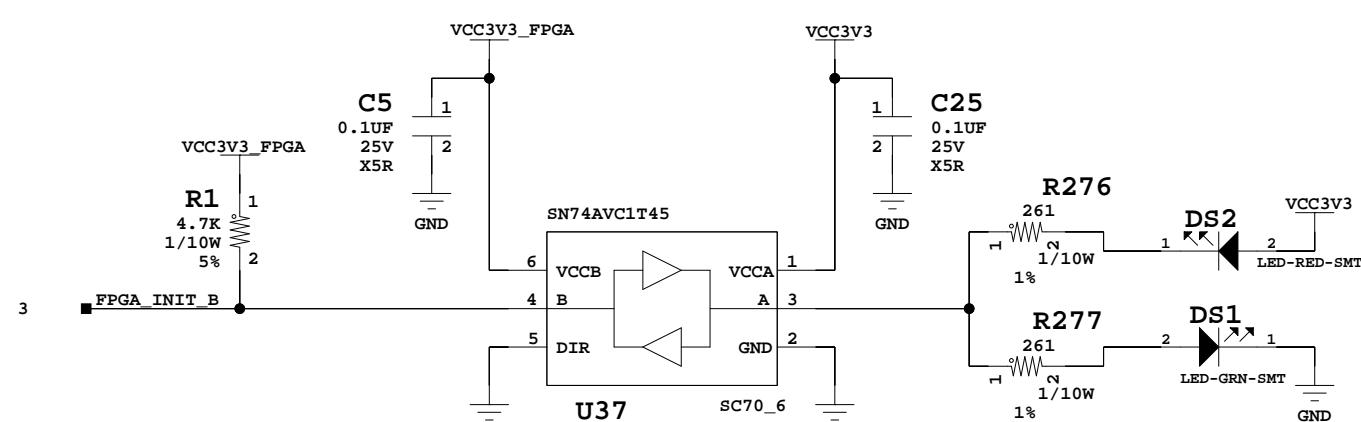
Title: LCR CHASSIS MANAGER	ASSY P/N: 7CM-100-0001-1 PCB P/N: 7PC-000-0455 SCH P/N: 7PC-000-0455-SCH.SCH
Date: 10/11/2024:01:10	Ver: 1.0
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TRIPLE CROWN

Title: Block Diagram	
Date: 10/11/2024:01:10	Ver: 1.0
Sheet Size: B	Rev: 01
Sheet 2 of 35 Drawn By TG	

XC7Z020

**XADC Reference****Zynq Bank 0****TRIPLE CROWN**

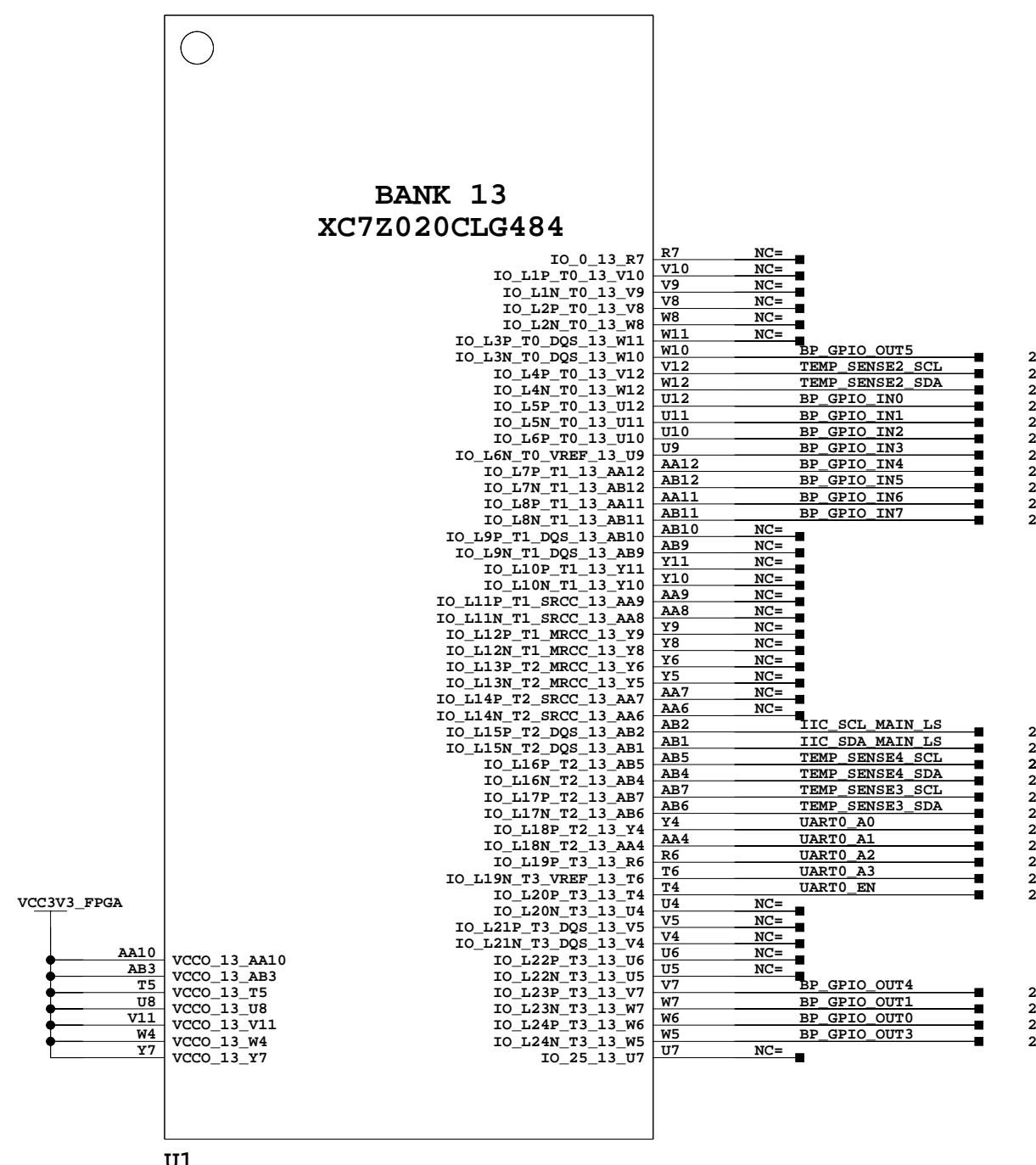
Title: Zynq Bank 0

Date: 10/11/2024:01:10 Ver: 1.0

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XC7Z020



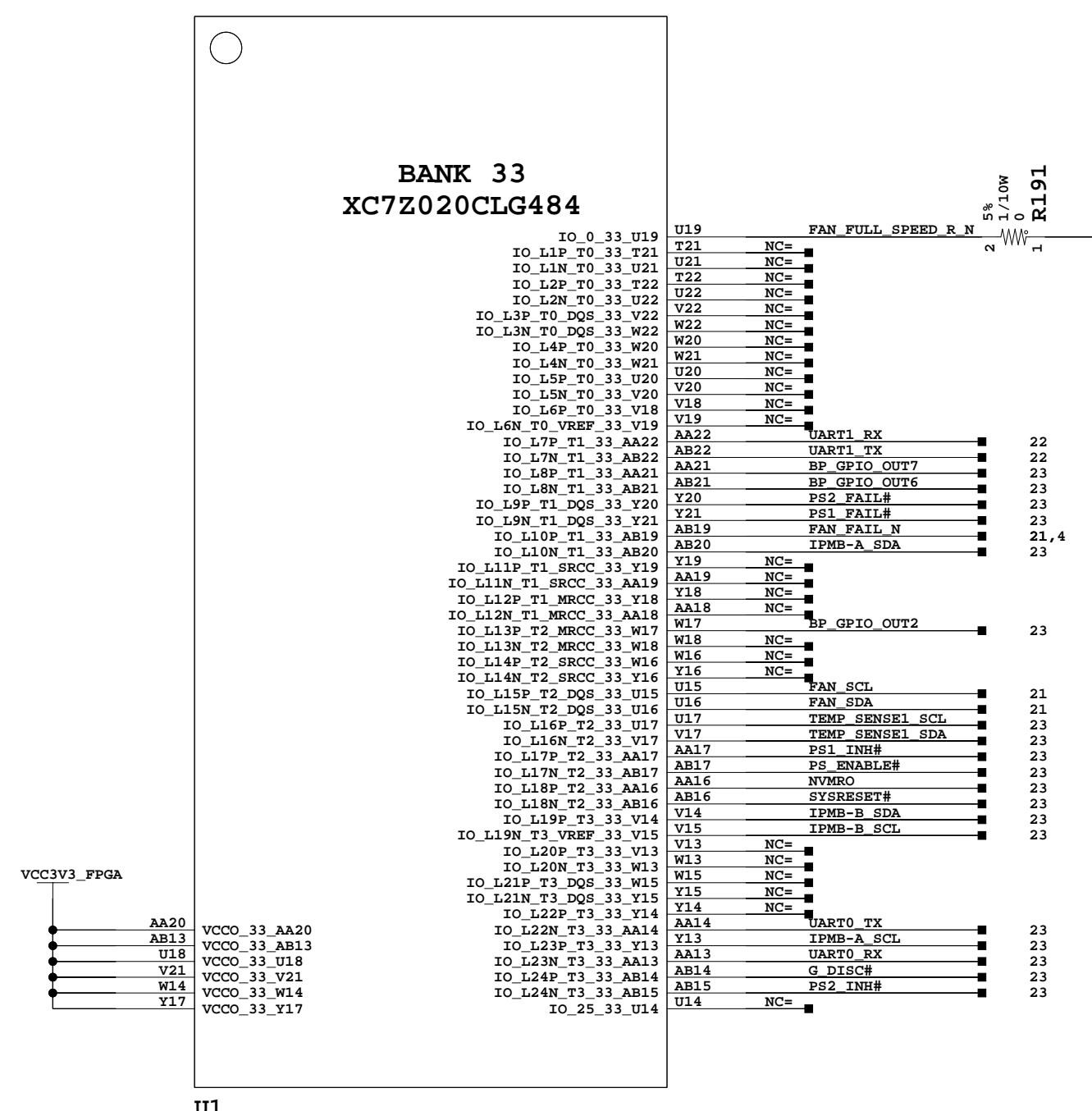
Zynq Bank 13

TRIPLE CROWN

Title: Zynq Bank 13

Date:	10/11/2024:01:10	Ver:	1.0
Sheet Size:	B	Rev:	01
Sheet	4 of 35	Drawn By	TG

XC7Z020

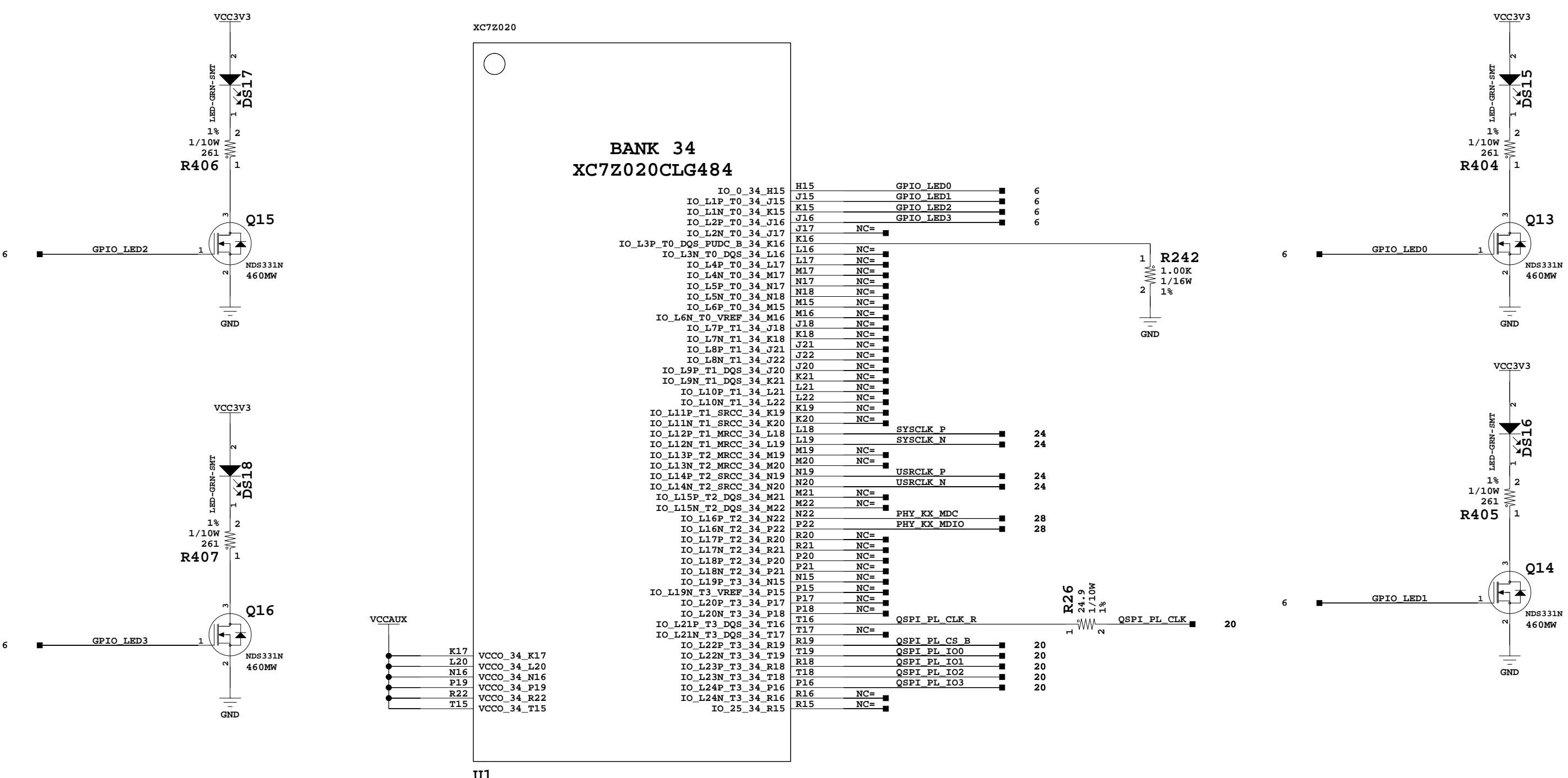


Zynq Bank 33

TRIPLE CROWN

Title: Zynq Bank 33

Date:	10/11/2024:01:10	Ver:	1.0
Sheet Size:	B	Rev:	01
Sheet	5 of 35	Drawn By	TG



Zynq Bank 34

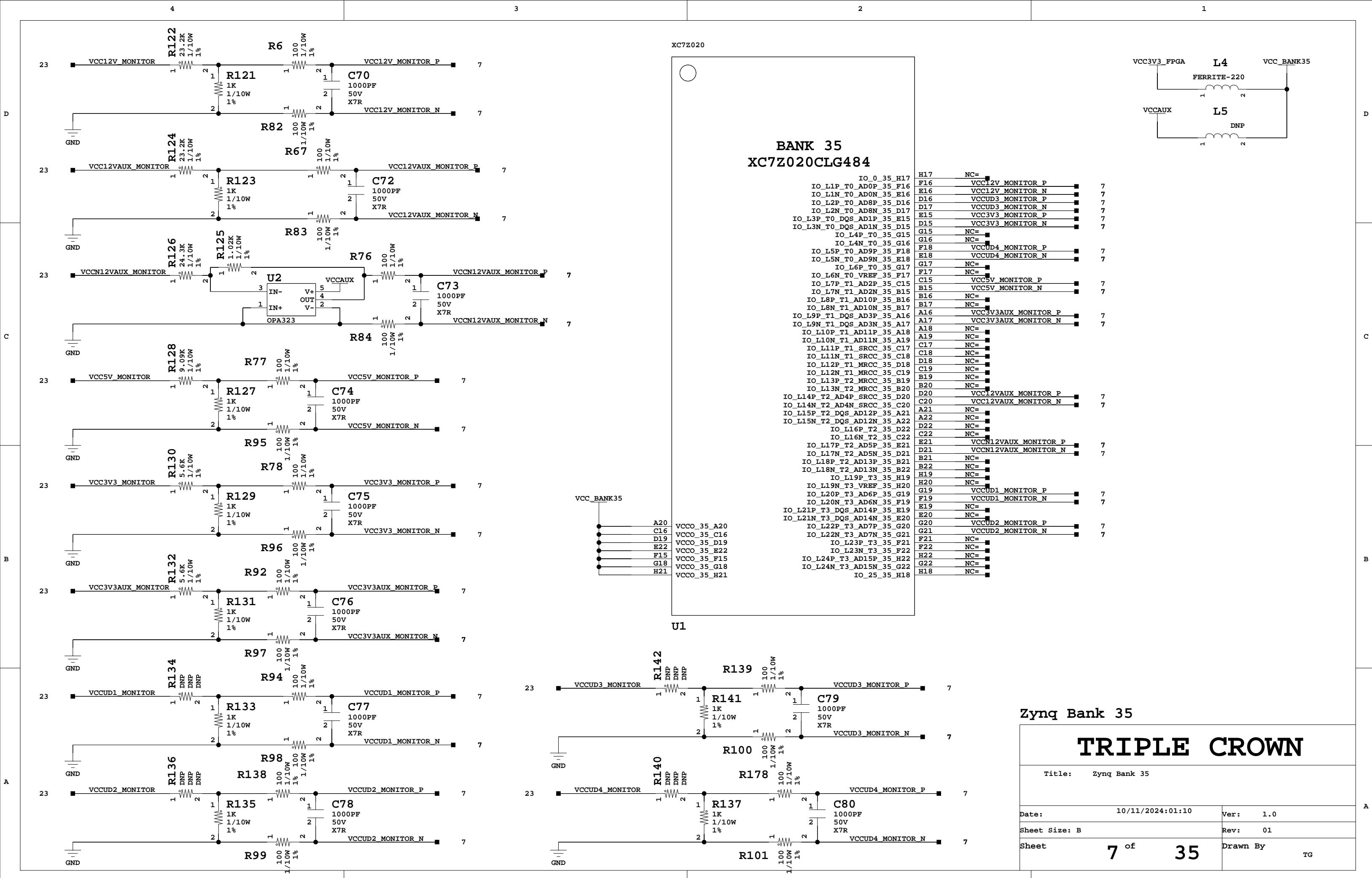
TRIPLE CROWN

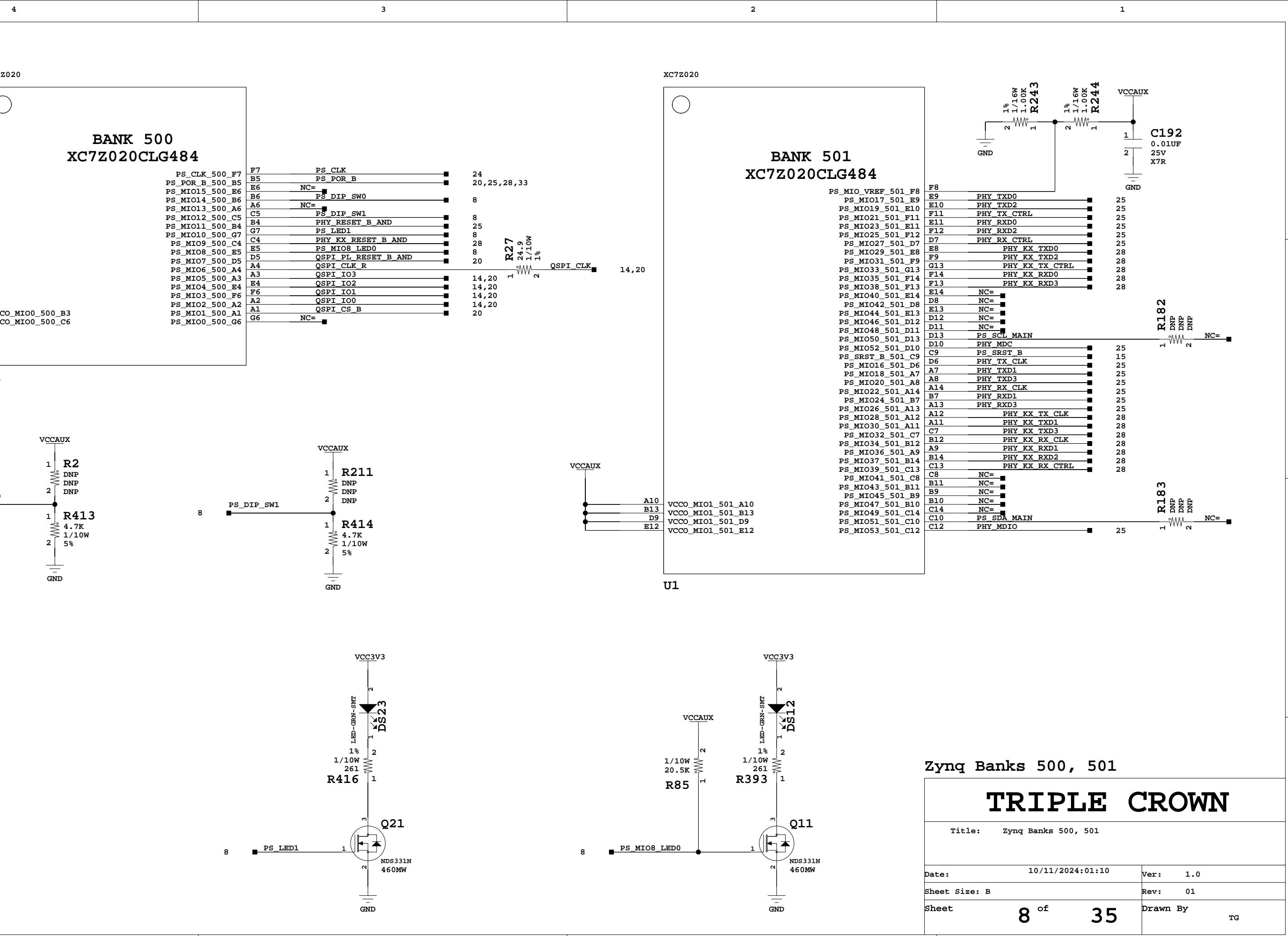
Title: Zynq Bank 34

Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev: 01

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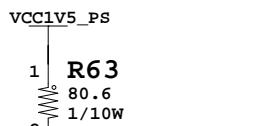
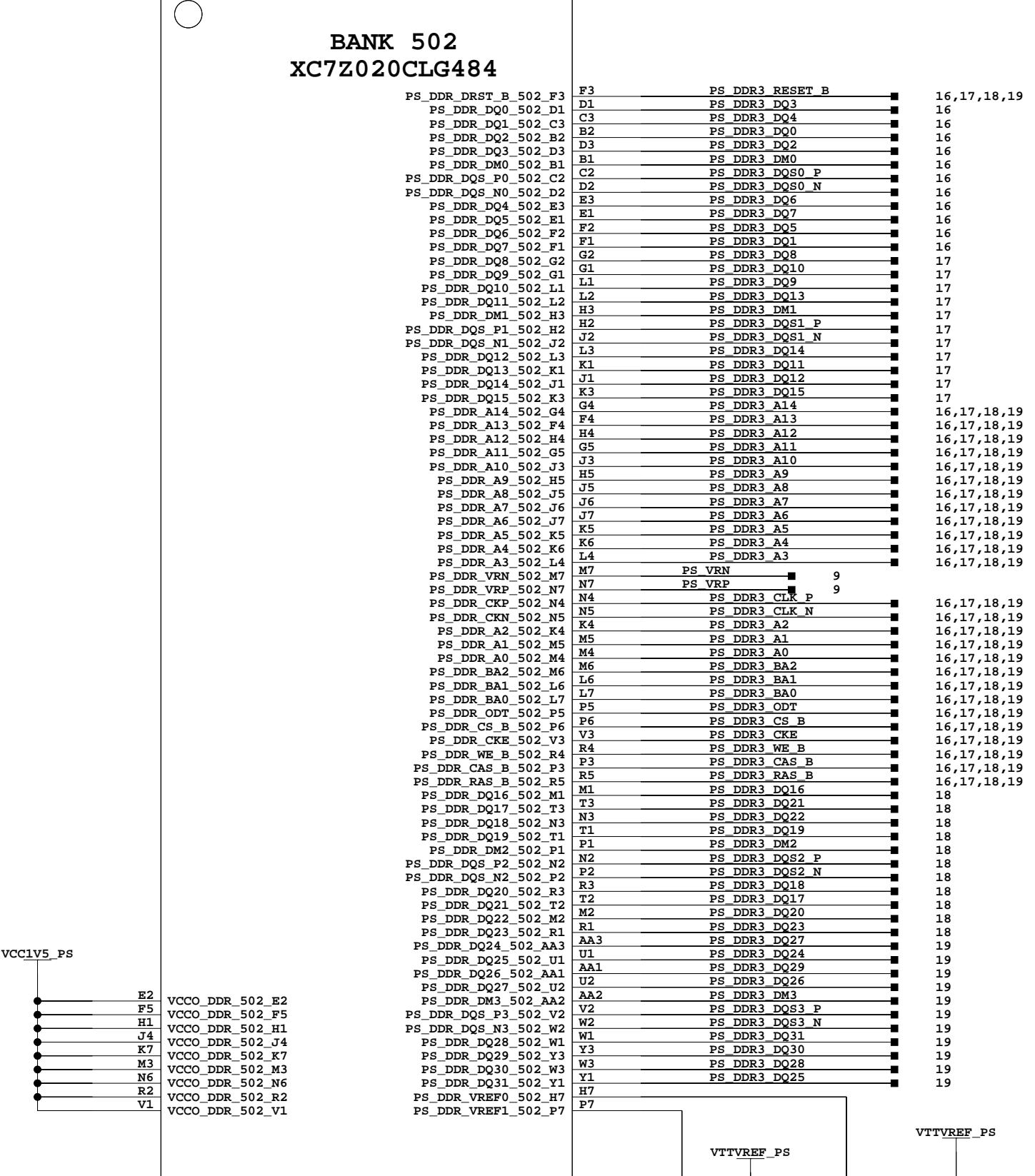




XC7Z020

BANK 502

XC7Z020CLG484



Zynq Bank 502

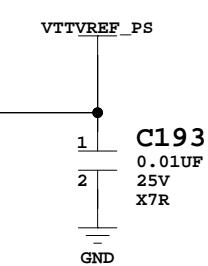
TRIPLE CROWN

Title: Zynq Bank 502

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Sheet Size: B Rev: 01

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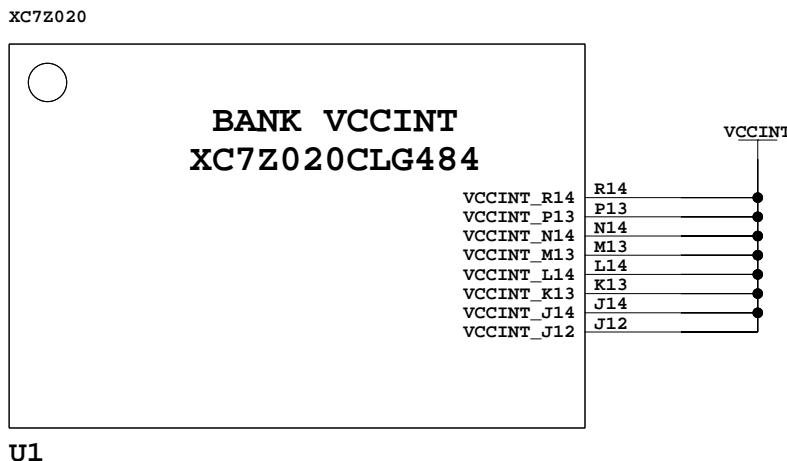
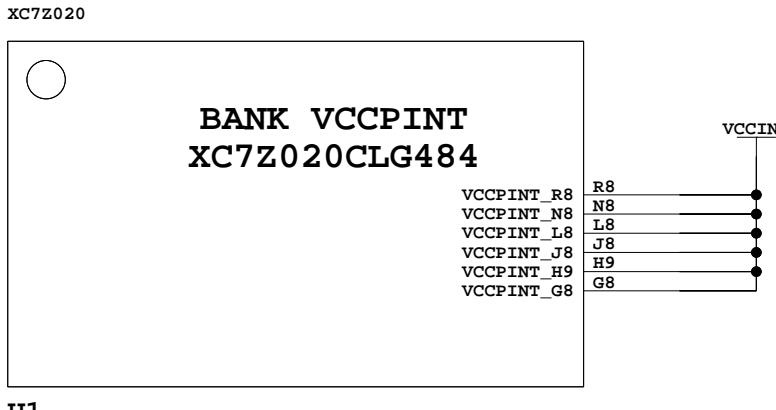
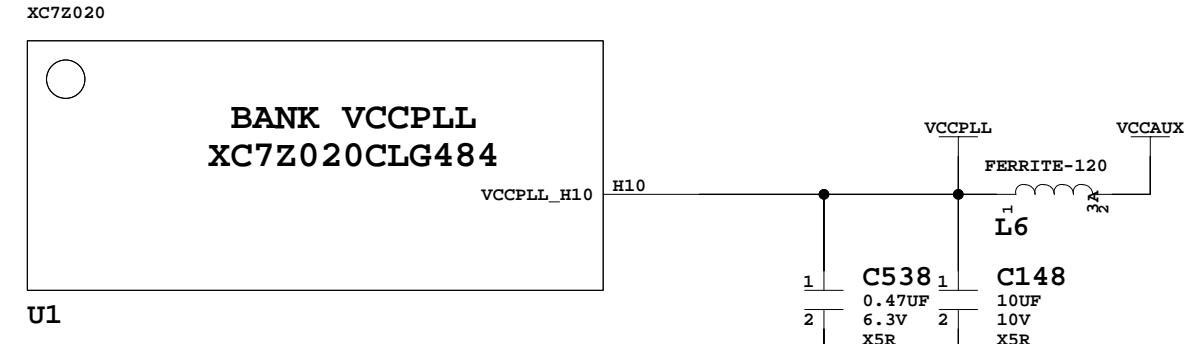
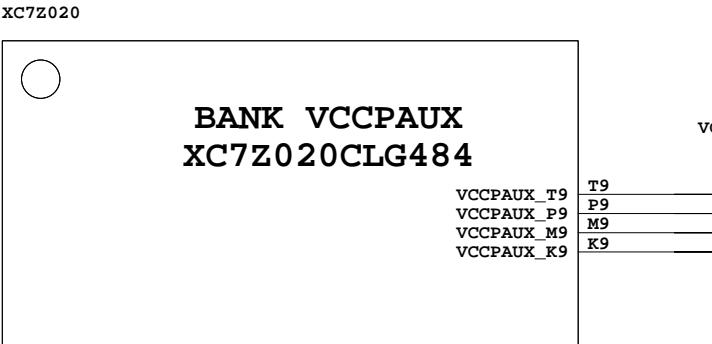
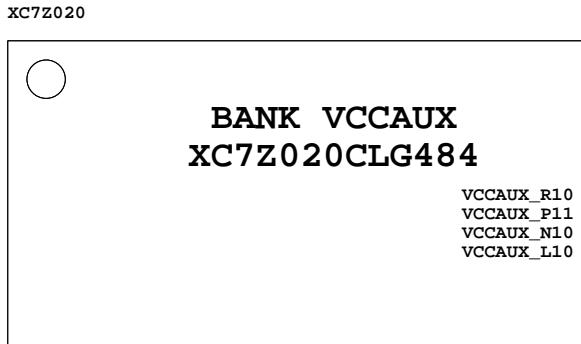


Increase width of VCCPLL route to
as wide as possible (target is > 20 mils)

Reduce the length of VCCPLL route as much as possible

Place C538 inside the VIA field to provide
as short as possible connection to VCCPLL (H10) and GND

Place C539 inside the open space cross adjacent to H10
for the short possible connection to VCCPLL



Zynq Power Pins

TRIPLE CROWN

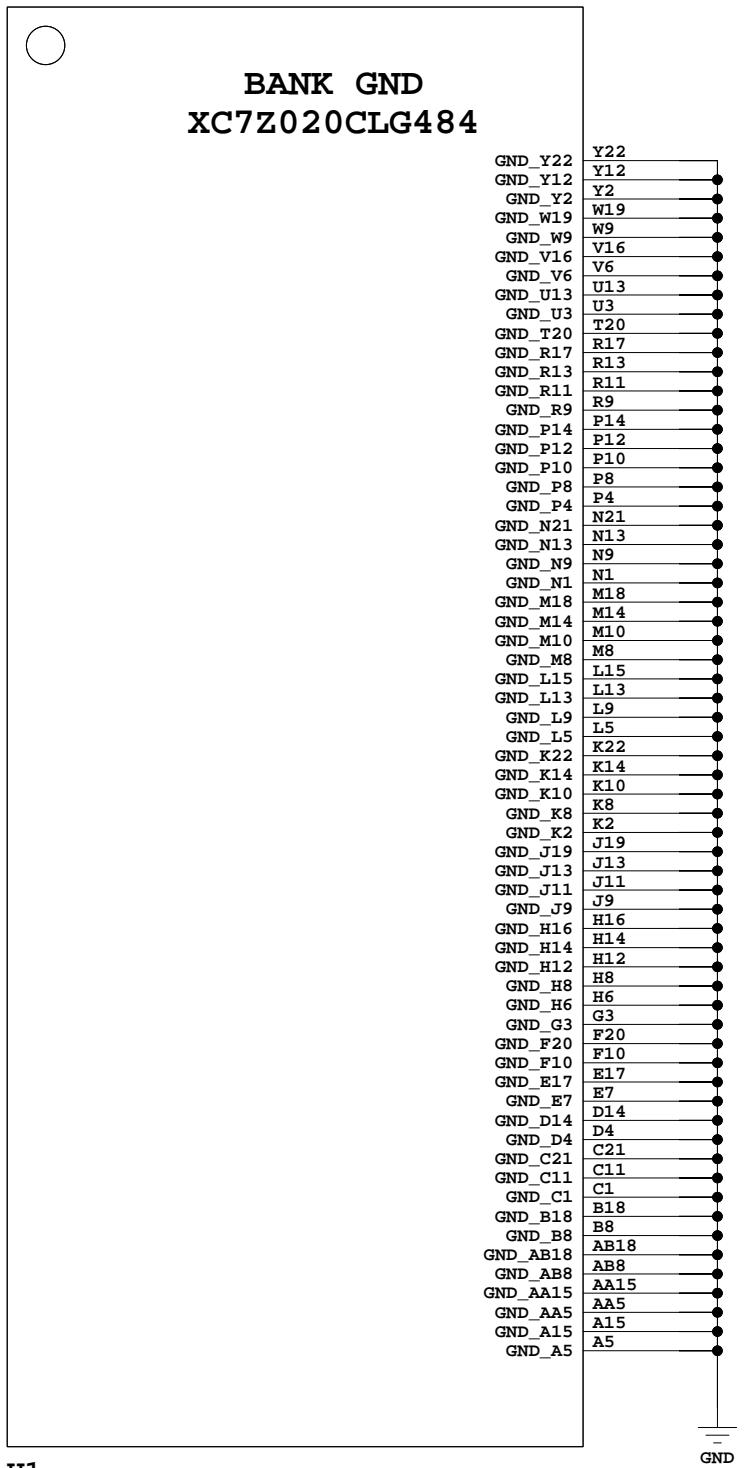
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Date: 10/11/2024:01:11 Ver: 1.0

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XC7Z020



U1

Zynq GND**TRIPLE CROWN**

Title: Zynq GND

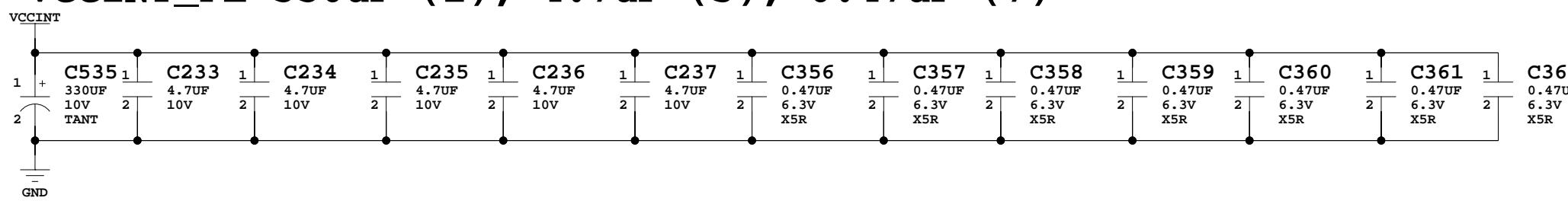
Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev:

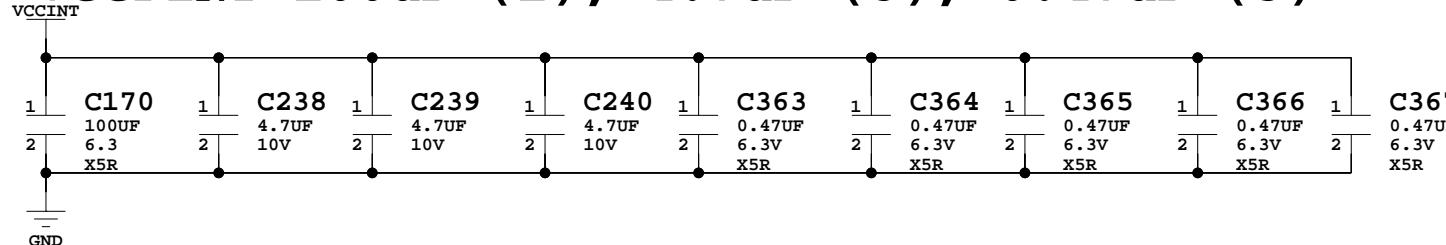
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BYPASS CAPACITORS

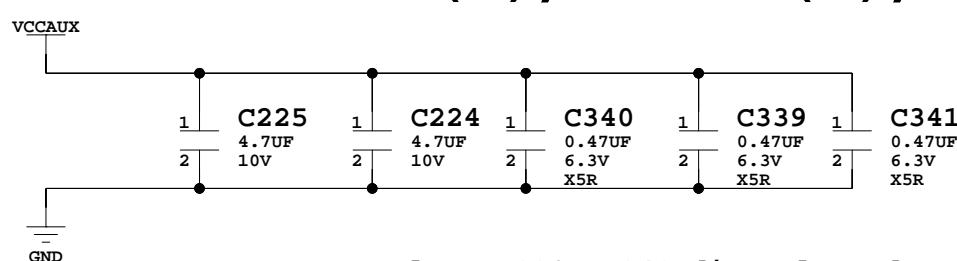
VCCINT_PL 330uF (1), 4.7uF (5), 0.47uF (7)



VCCPINT 100uF (1), 4.7uF (3), 0.47uF (5)

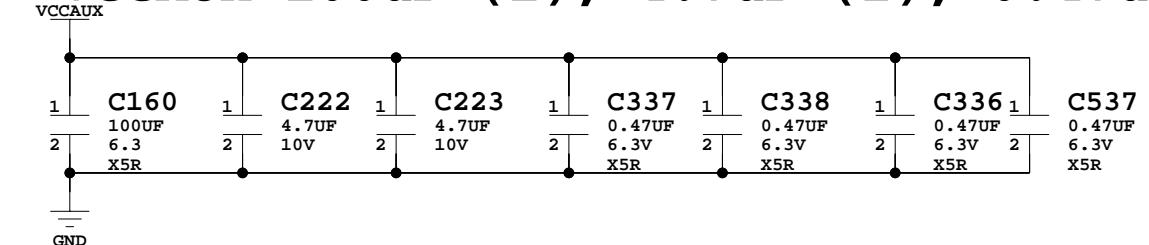


VCCPAUX 100uF (0), 4.7uF (2), 0.47uF (3)

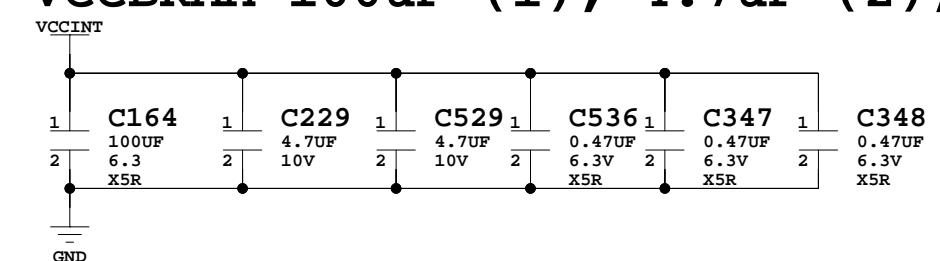


Place C339, C340 directly underneath the FPGA
as short as possible connection to VCCPAUX and GND

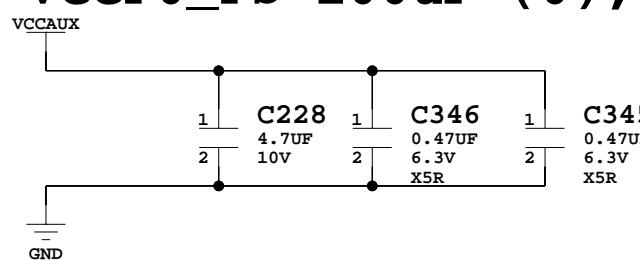
VCCTAUX 100uF (1), 4.7uF (2), 0.47uF (4)



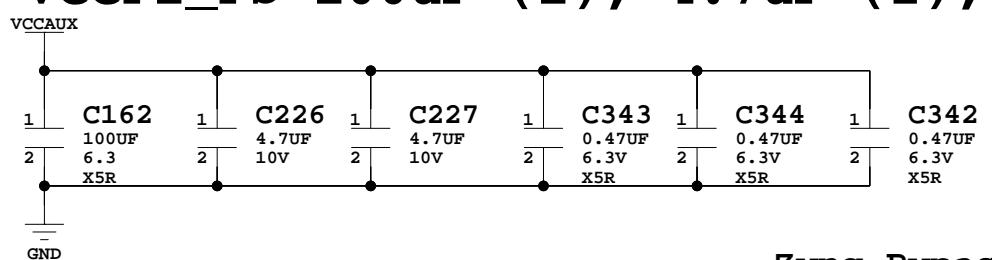
VCCBRAM 100uF (1), 4.7uF (2), 0.47uF (3)



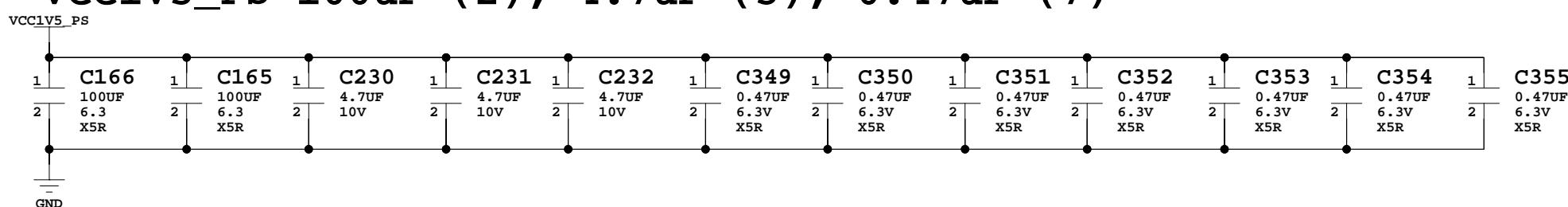
VCCP0_PS 100uF (0), 4.7uF (1), 0.47uF (2)



VCCP1_PS 100uF (1), 4.7uF (2), 0.47uF (3)



VCC1V5_PS 100uF (2), 4.7uF (3), 0.47uF (7)



Zynq Bypass Capacitors

TRIPLE CROWN

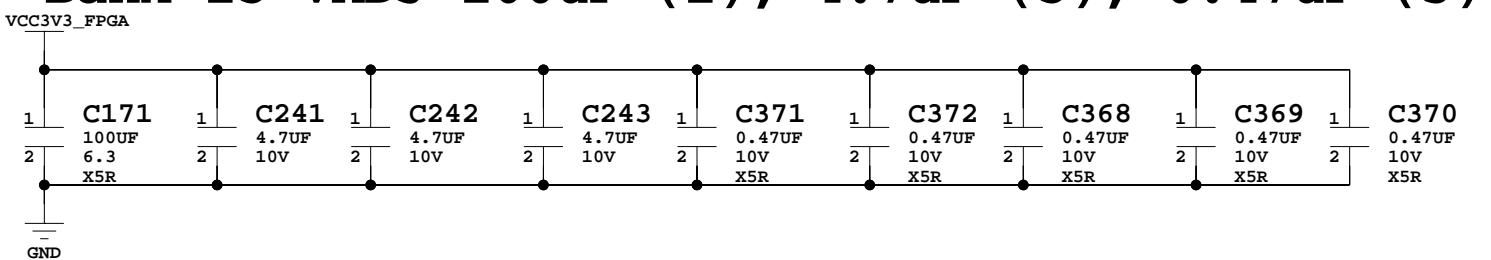
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Date: 10/11/2024:01:10 Ver: 1.0

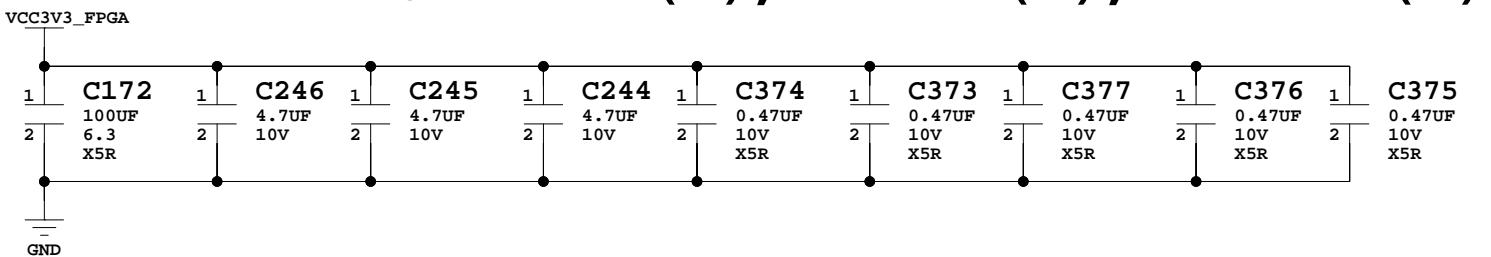
Sheet Size: B Rev: 01

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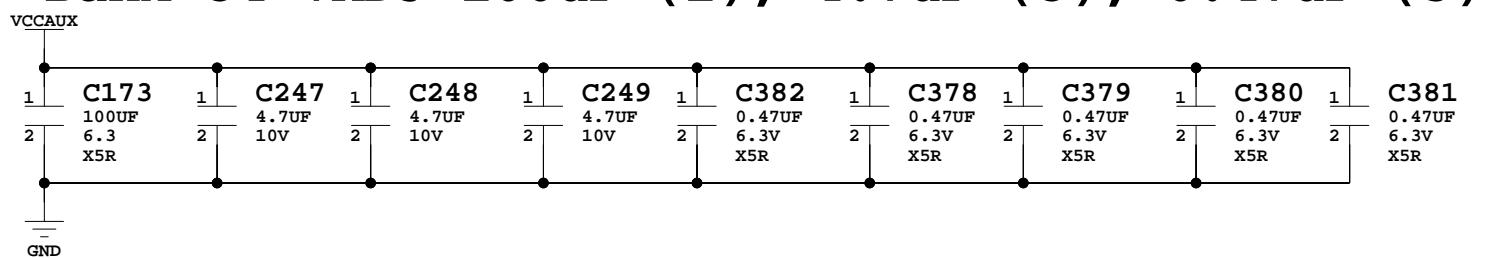
Bank 13 VADJ 100uF (1), 4.7uF (3), 0.47uF (5)



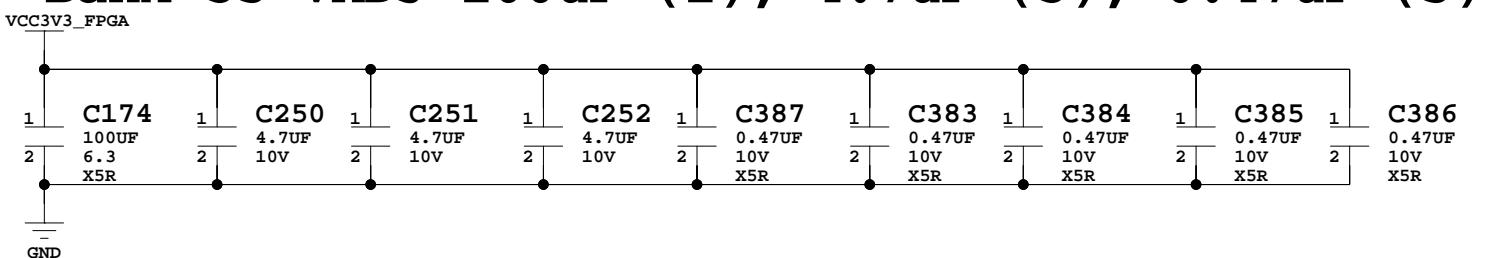
Bank 33 VADJ 100uF (1), 4.7uF (3), 0.47uF (5)



Bank 34 VADJ 100uF (1), 4.7uF (3), 0.47uF (5)



Bank 35 VADJ 100uF (1), 4.7uF (3), 0.47uF (5)



Zynq Bypass Capacitors

TRIPLE CROWN

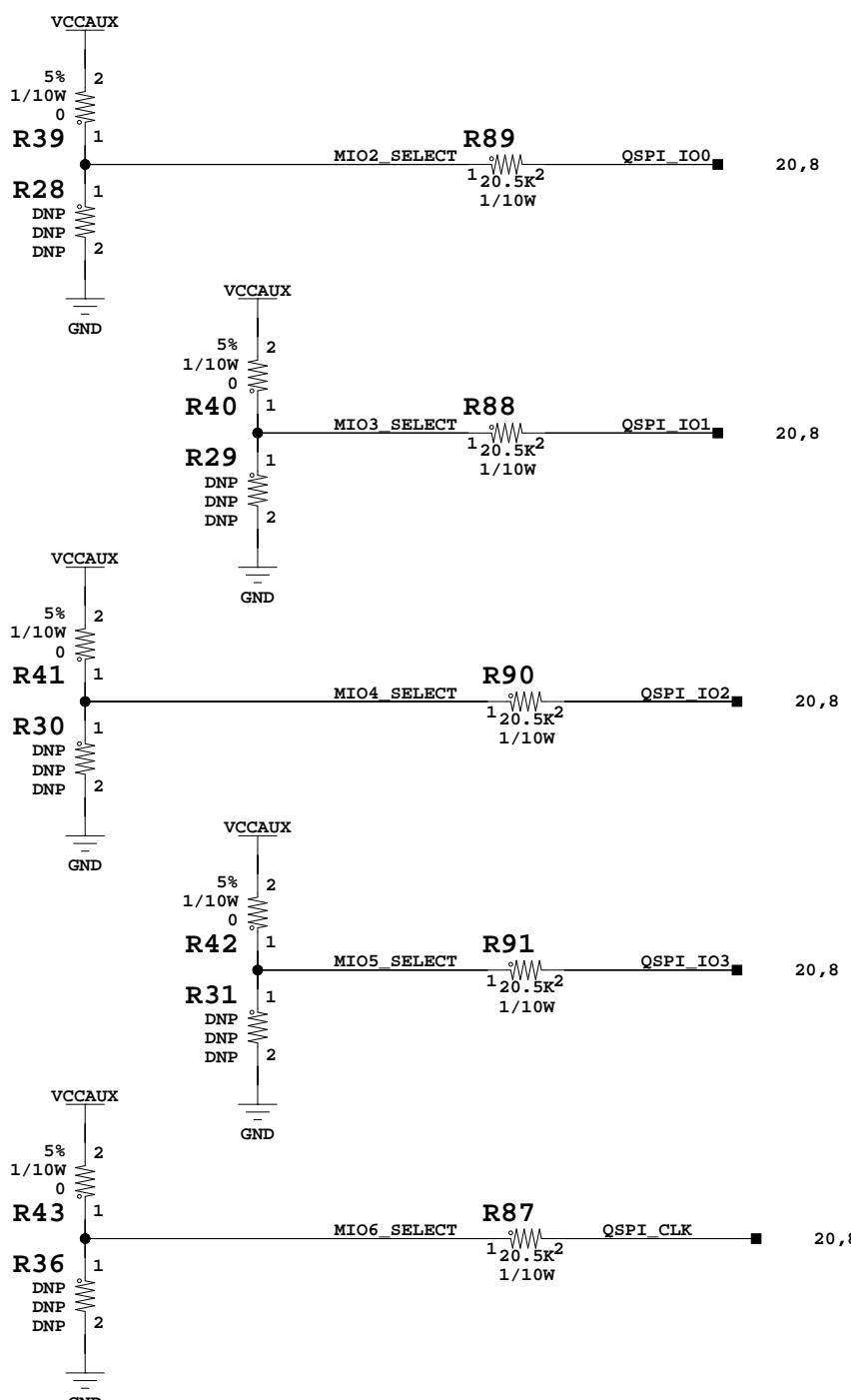
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Date: 10/11/2024:01:10 Ver: 1.0

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MIO[6:2] SELECTION HEADERS

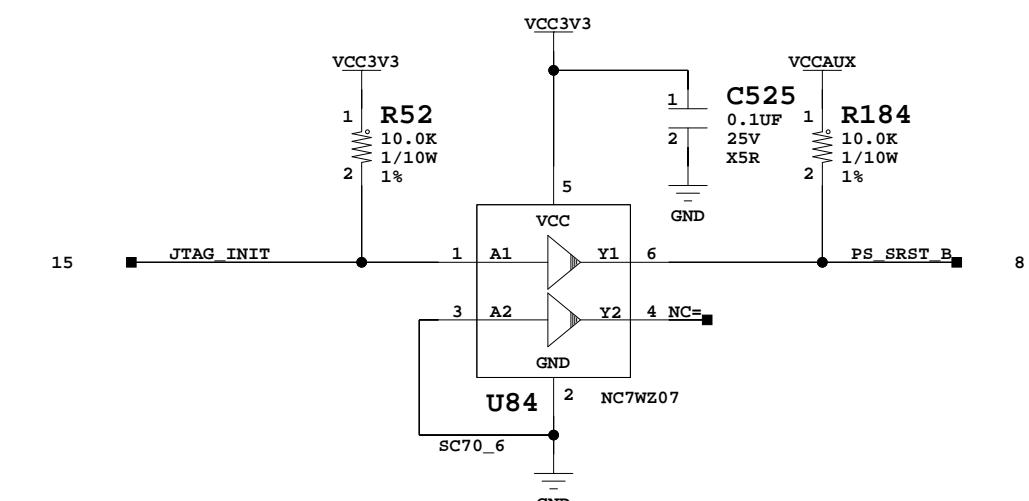
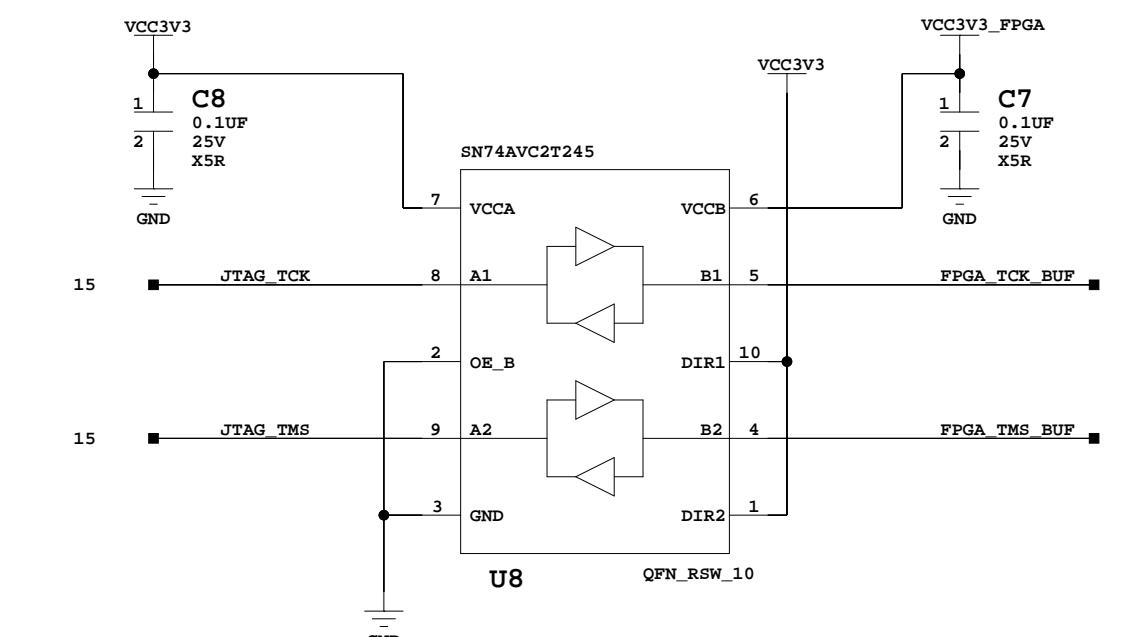
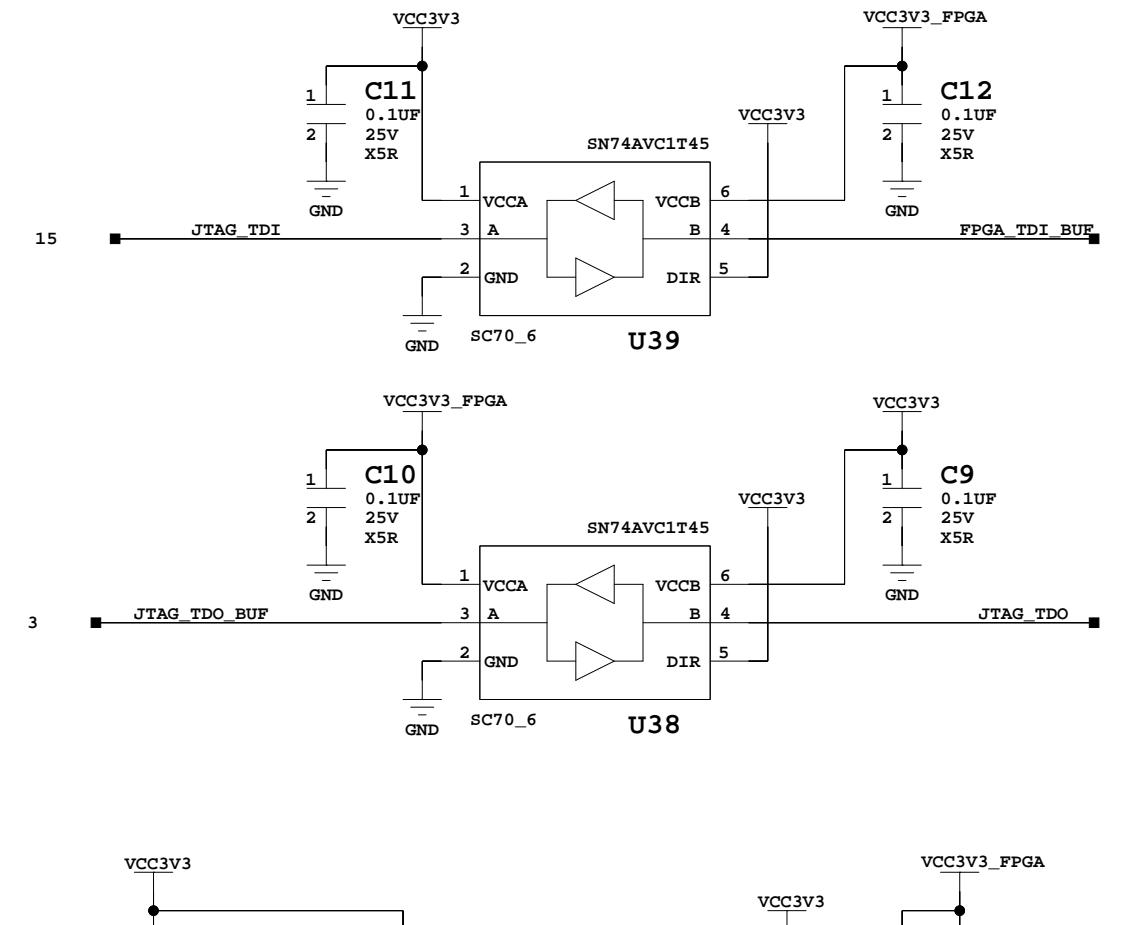
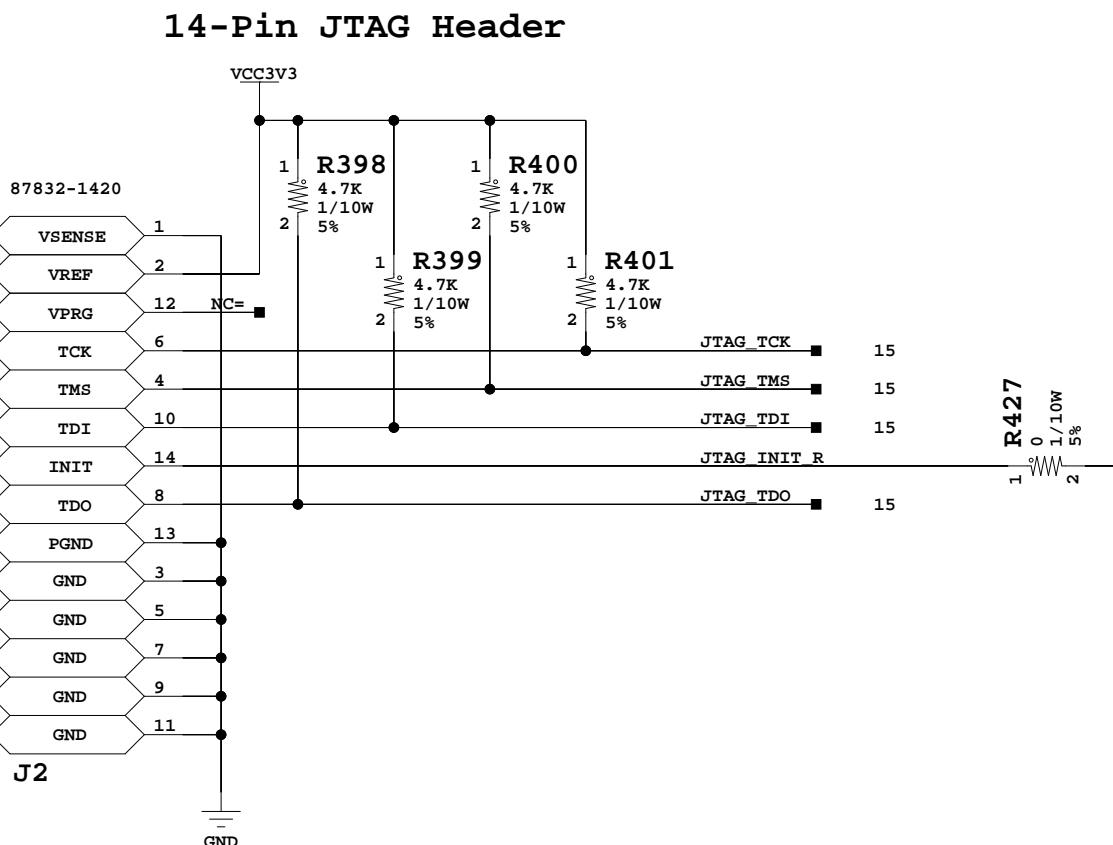


Zynq Config Pins

TRIPLE CROWN

Title: Zynq Config Pins

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JTAG Buffers, JTAG Hdr

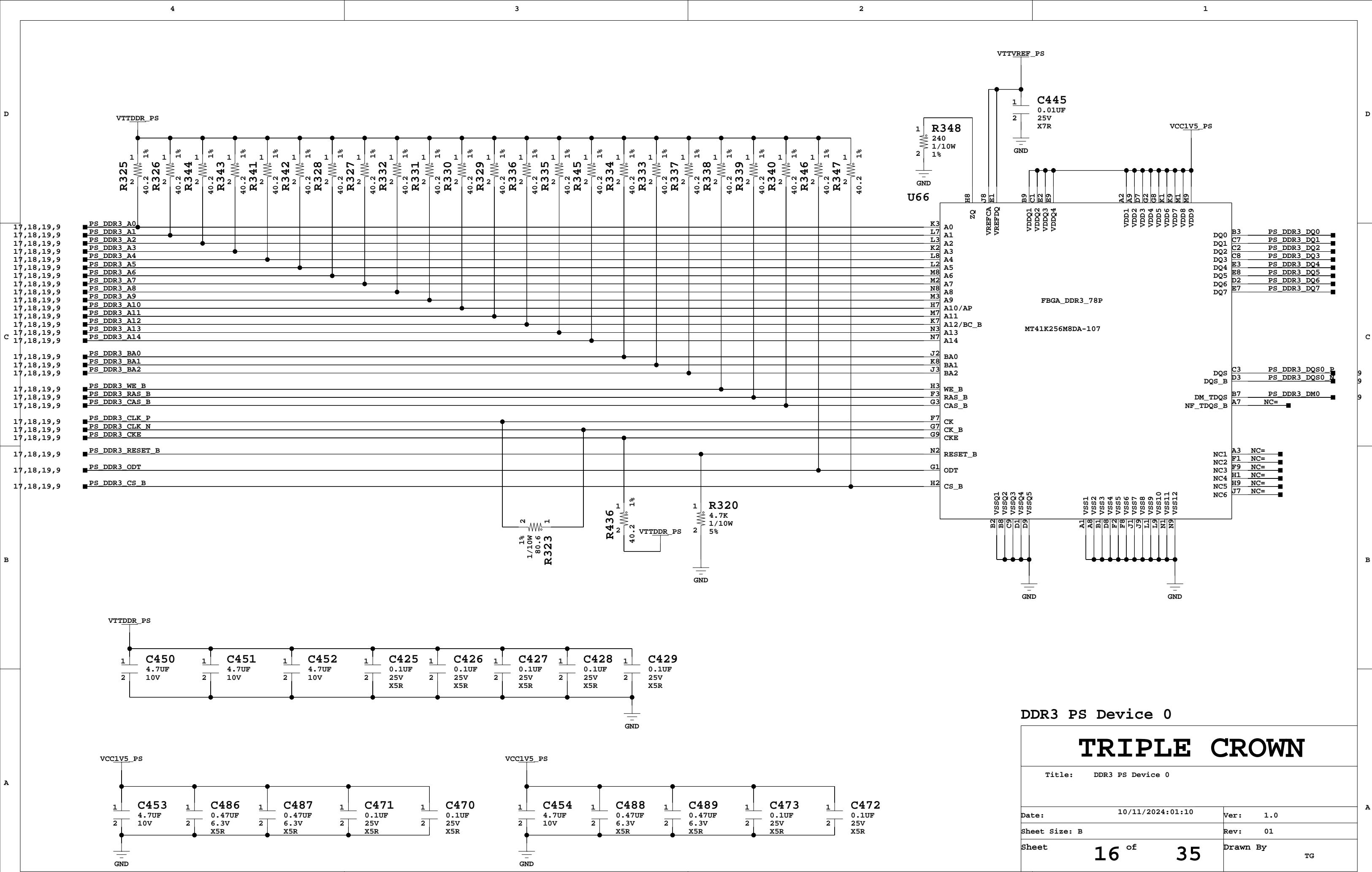
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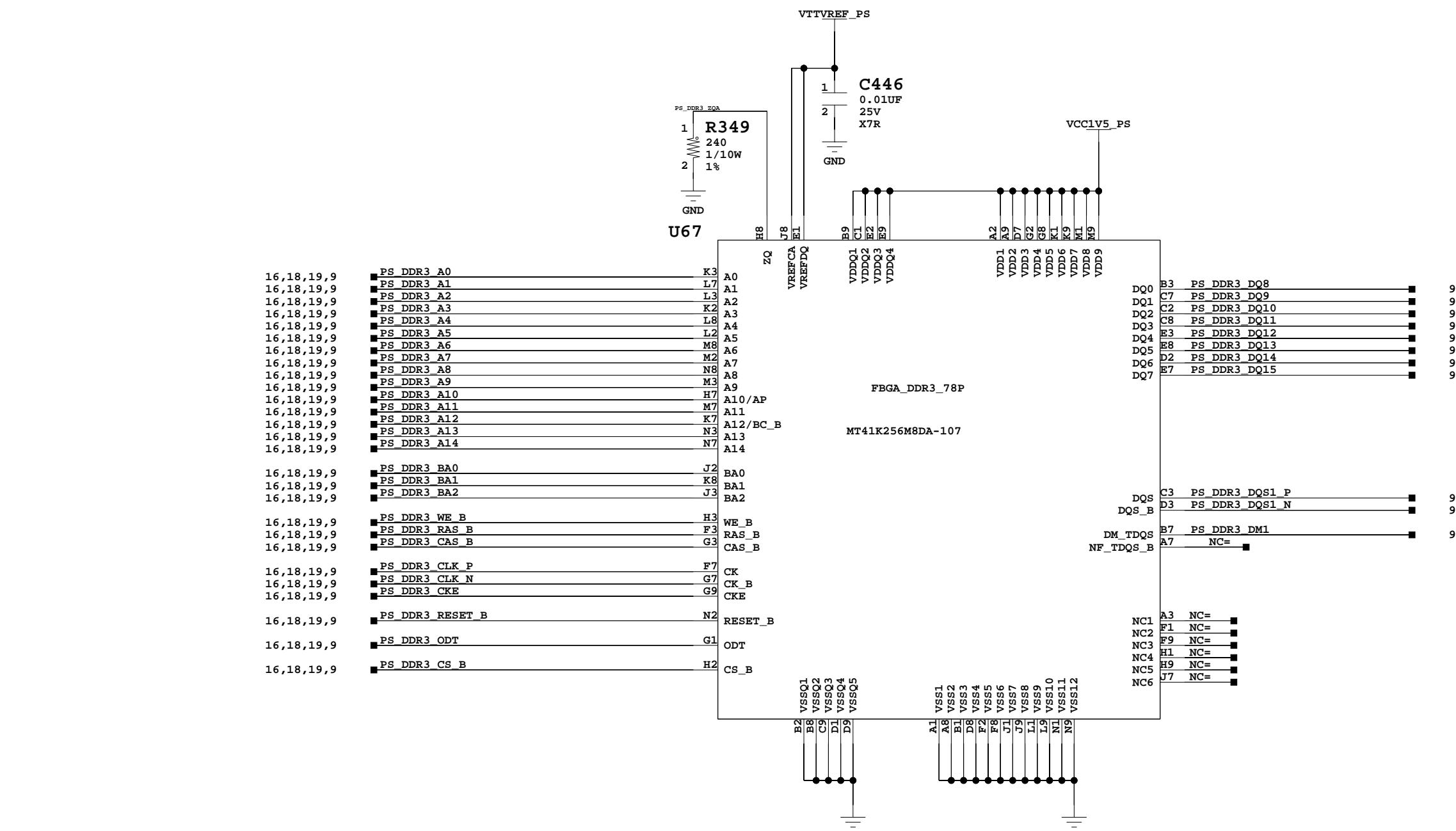
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Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev: 01

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DDR3 PS Device 1

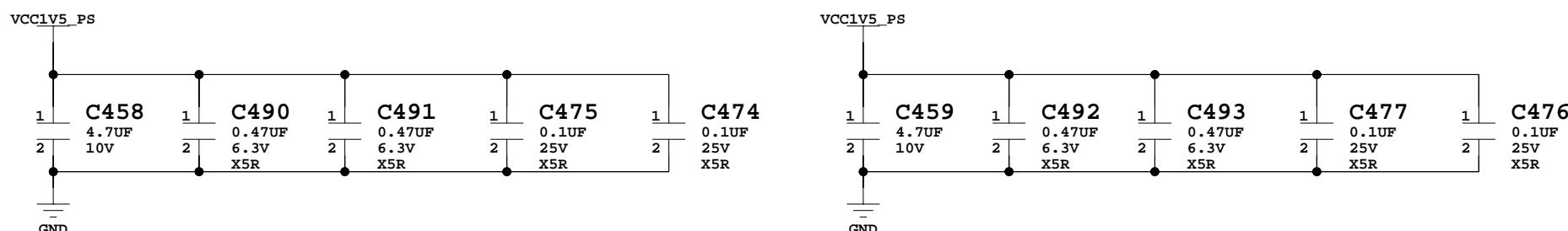
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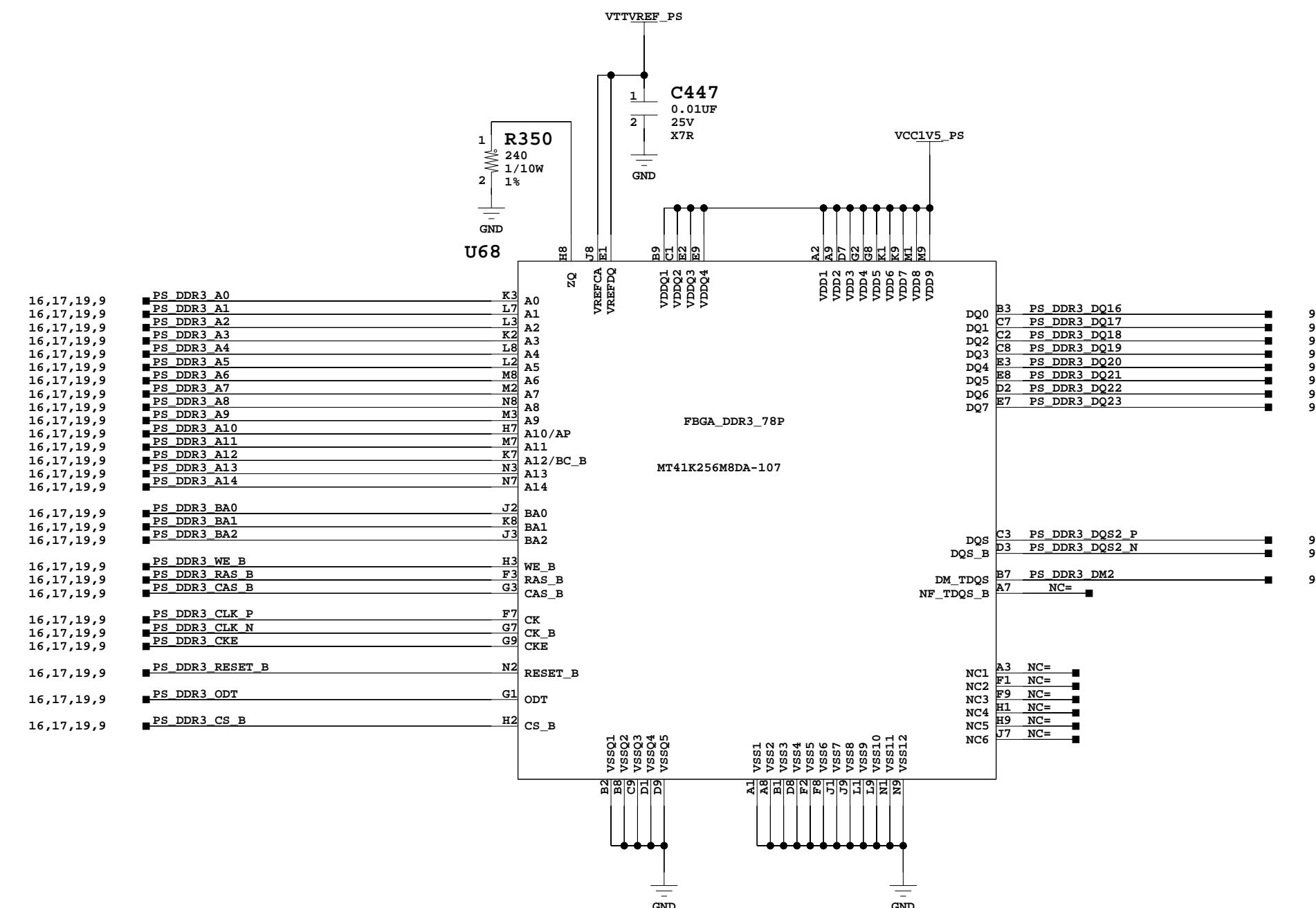
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Date: 10/11/2024:01:10 Ver: 1.0

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DDR3 PS Device 2

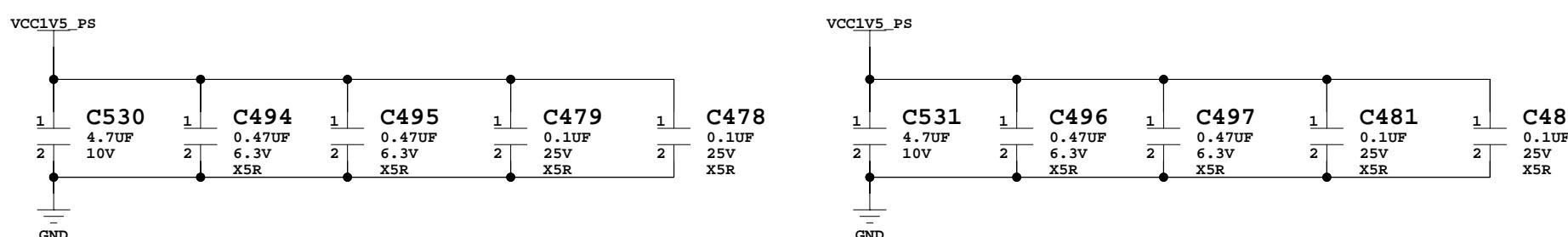
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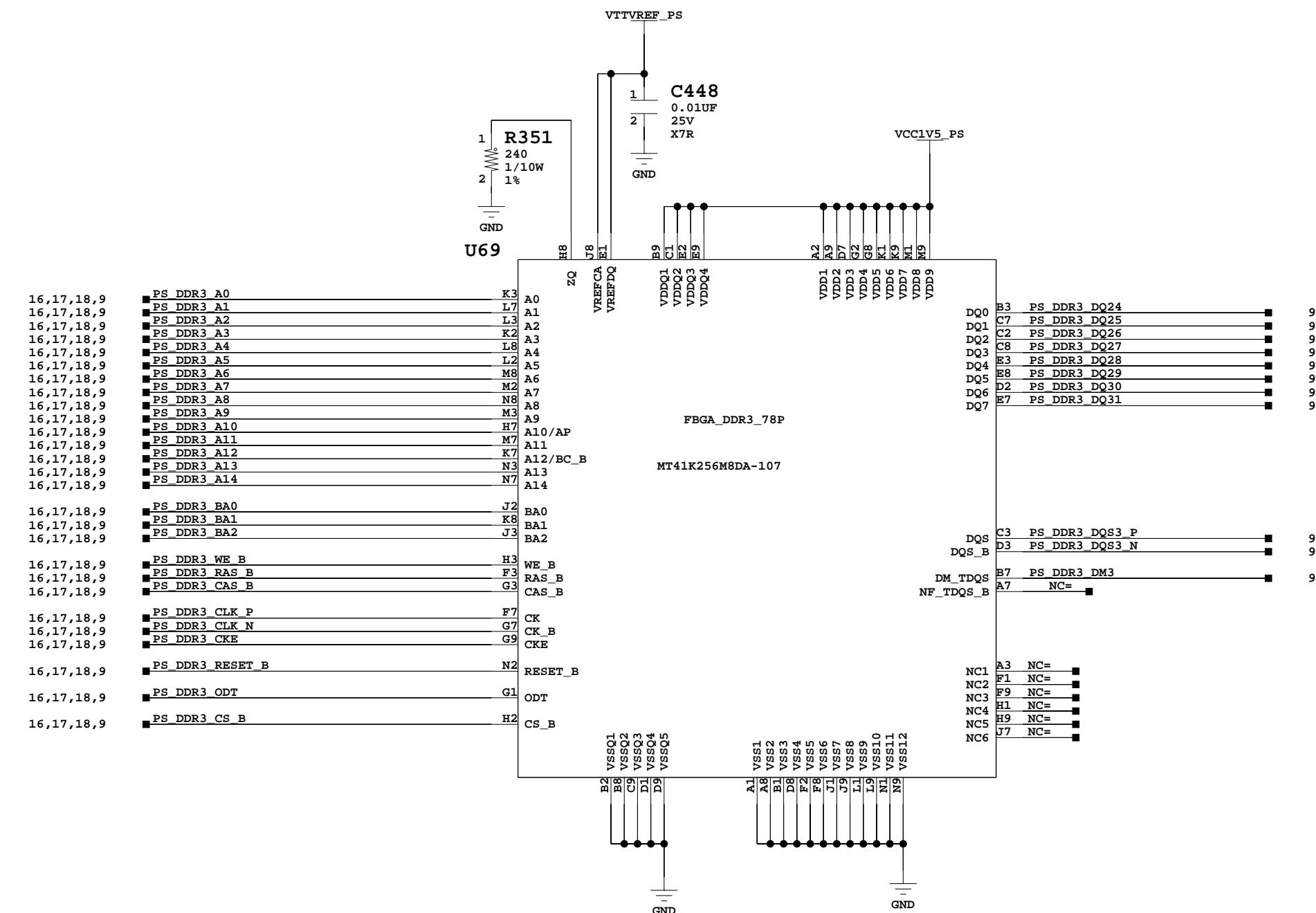
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Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev: 01

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DDR3 PS Device 3

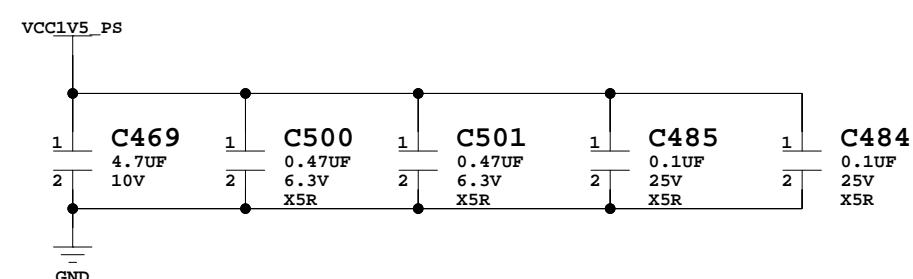
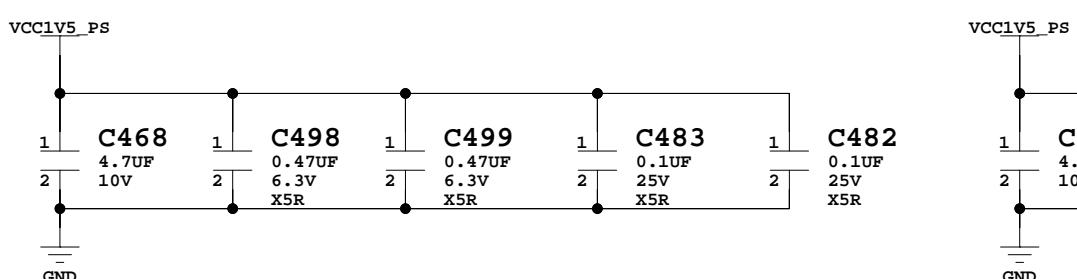
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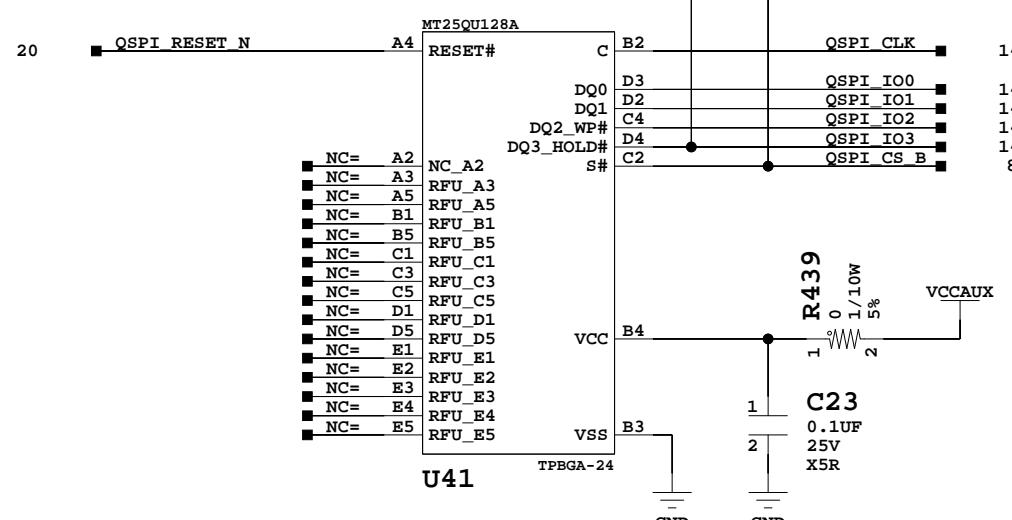
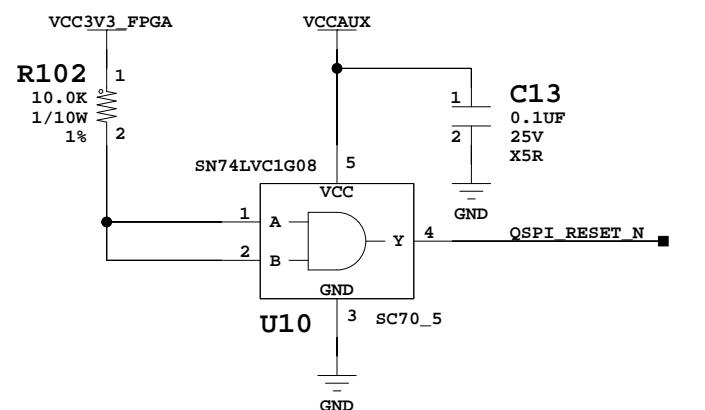
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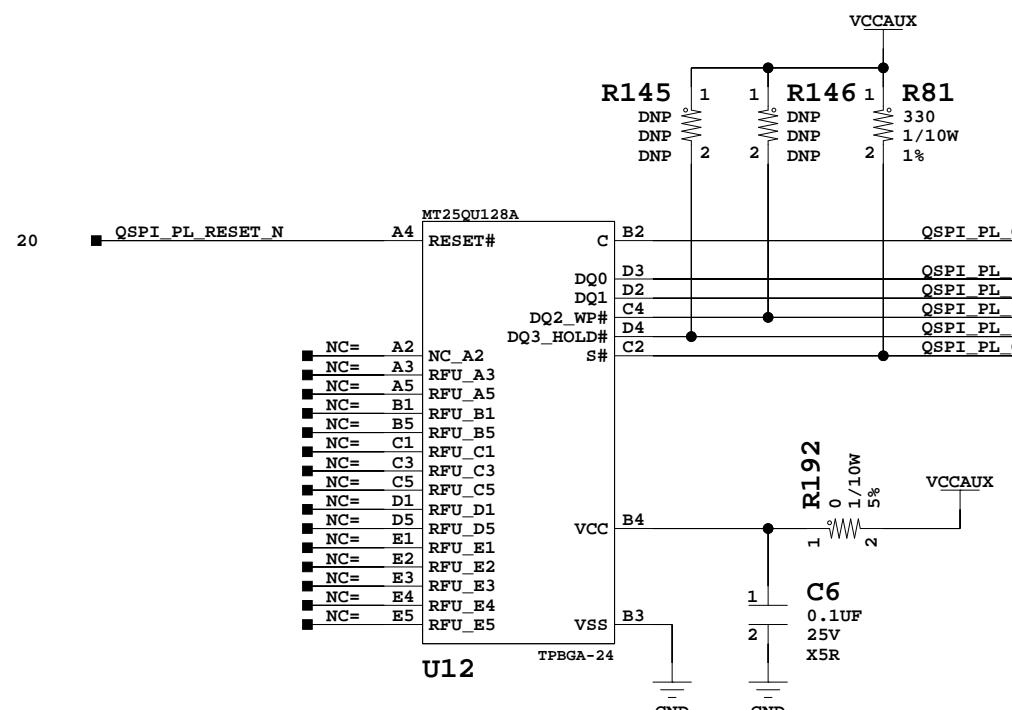
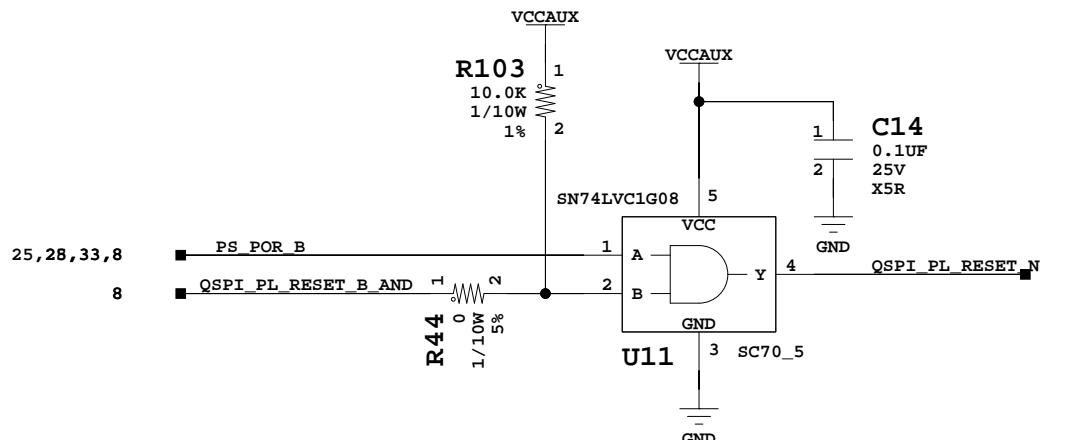
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PS Quad SPI



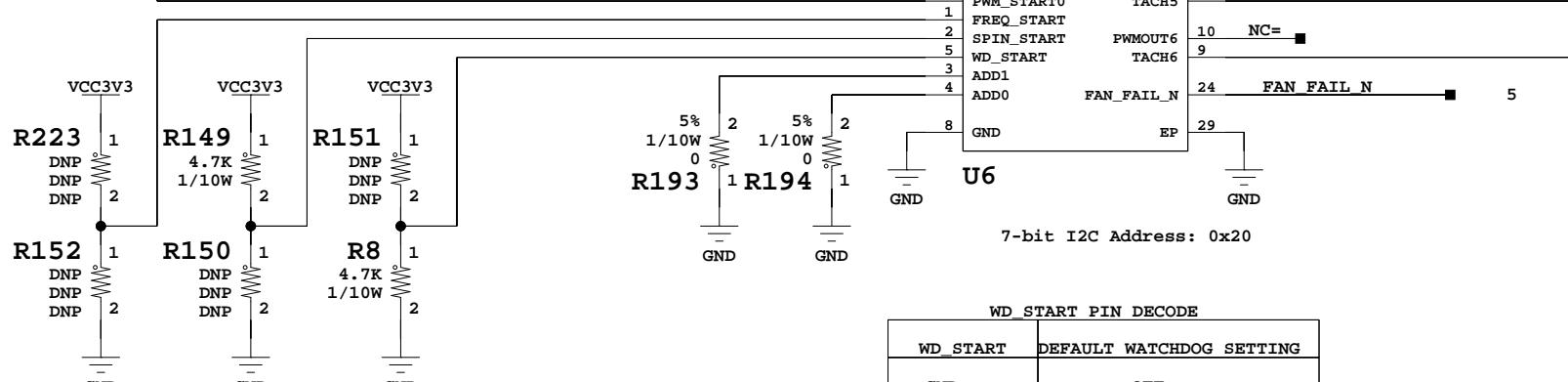
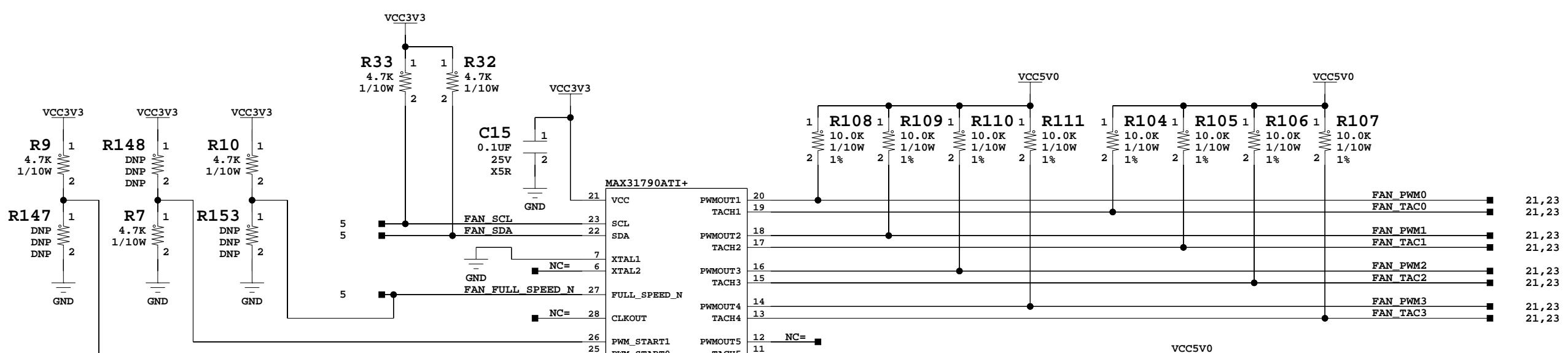
PL Quad SPI

TRIPLE CROWN

Title: Quad SPI

Date:	10/11/2024:01:10	Ver:	1.0
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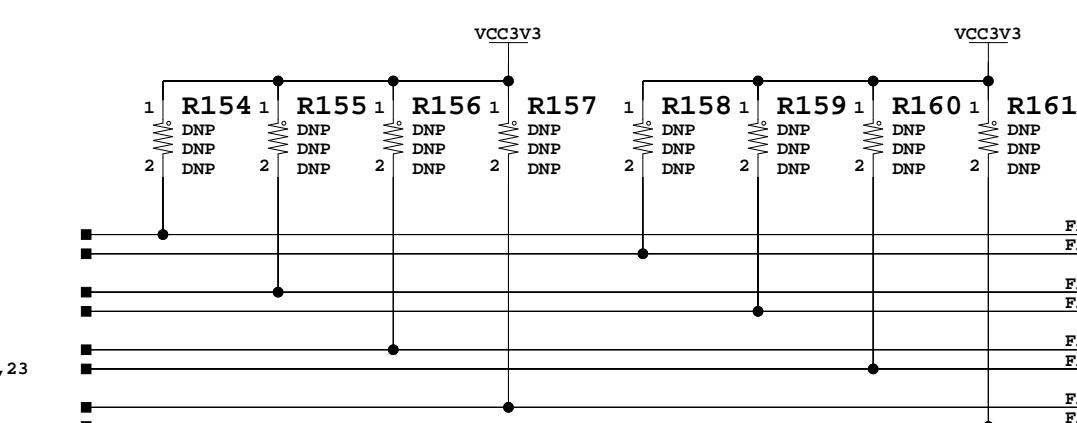
Drawn By TG



WD_START PIN DECODE	
FREQ START	FAN DEFAULT DRIVE SETTING
GND	30 Hz
VCC	25 kHz
UNCONNECTED	1.47 kHz

FREQ_START PIN DECODE		
PWM_START0	PWM_START1	PWM_DUTY CYCLE (%)
GND	GND	0
GND	UNCONNECTED	30
GND	VCC	40
UNCONNECTED	GND	50
UNCONNECTED	VCC	60
VCC	GND	75
VCC	VCC	100

PWM_START PINS DECODE		
PWM_START0	PWM_START1	PWM_DUTY CYCLE (%)
GND	GND	0
GND	UNCONNECTED	30
GND	VCC	40
UNCONNECTED	GND	50
UNCONNECTED	VCC	60
VCC	GND	75
VCC	VCC	100



Fan Control and Sense

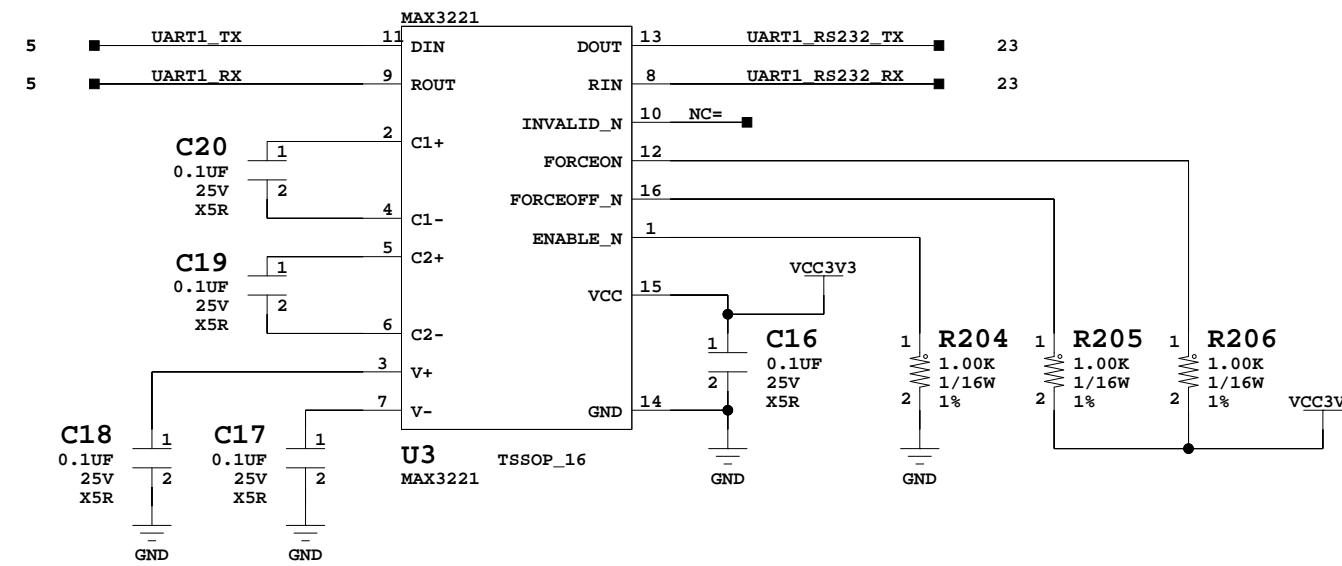
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Title: Fan Control and Sense

Date: 10/11/2024:01:10 Ver: 1.0

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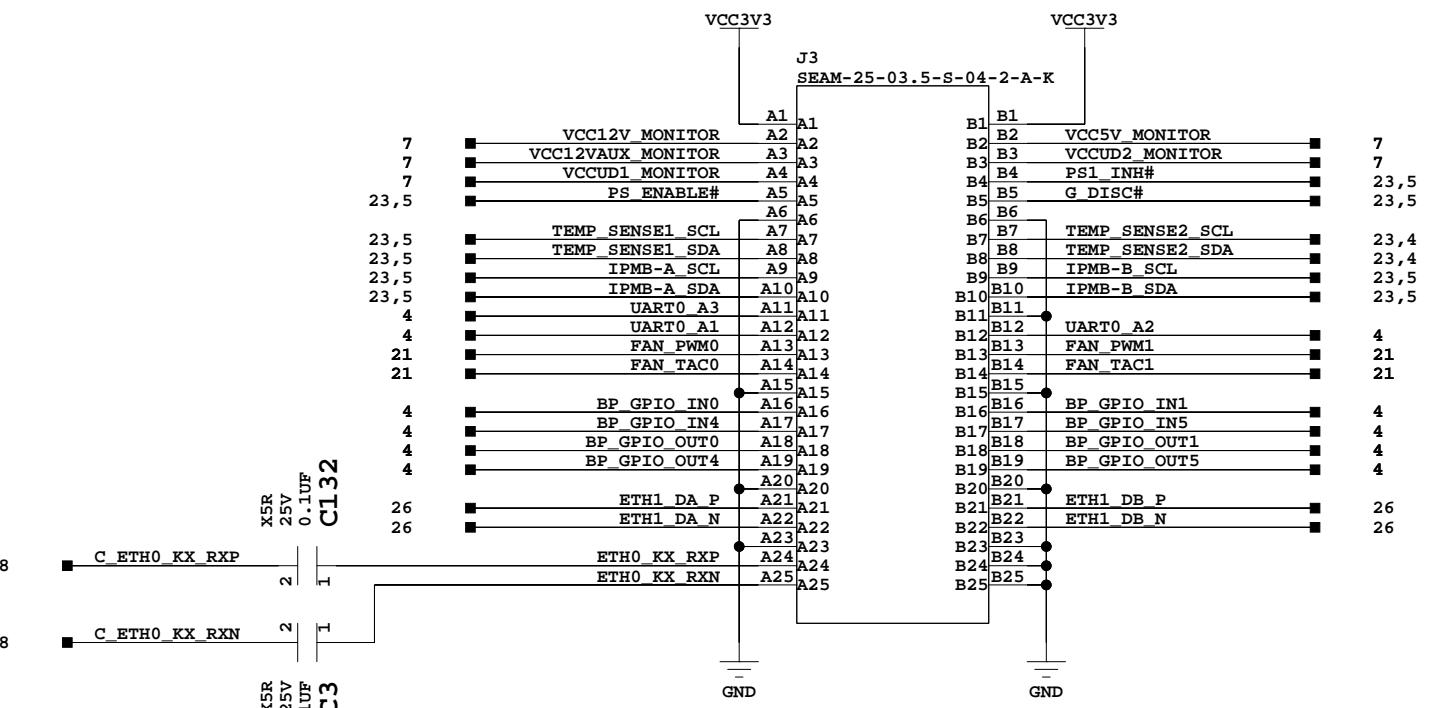
RS-232 UART

TRIPLE CROWN

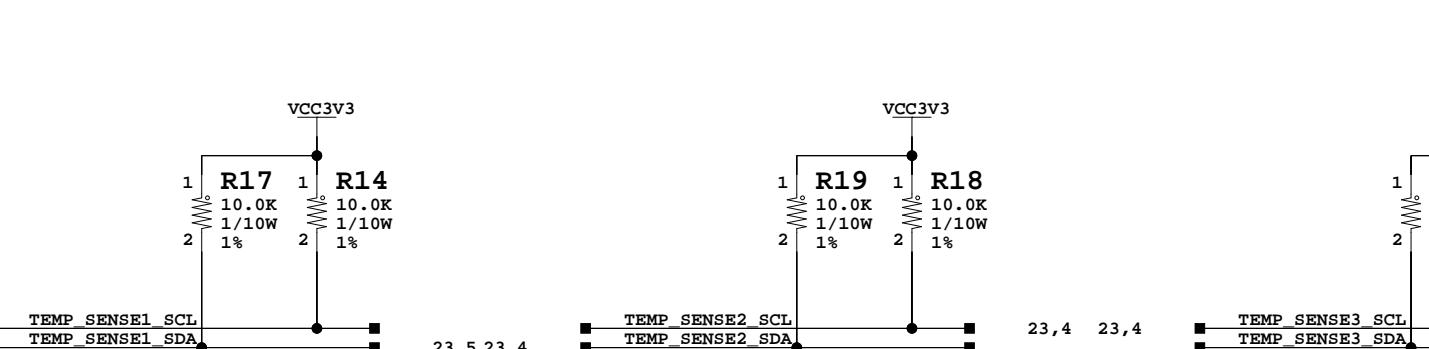
Title: RS-232 UART

Date:	10/11/2024:01:10	Ver:	1.1
Sheet Size:	B	Rev:	02
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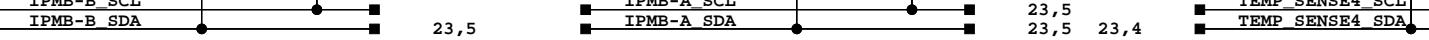
D



C



B



A



D



I/O CONNECTOR

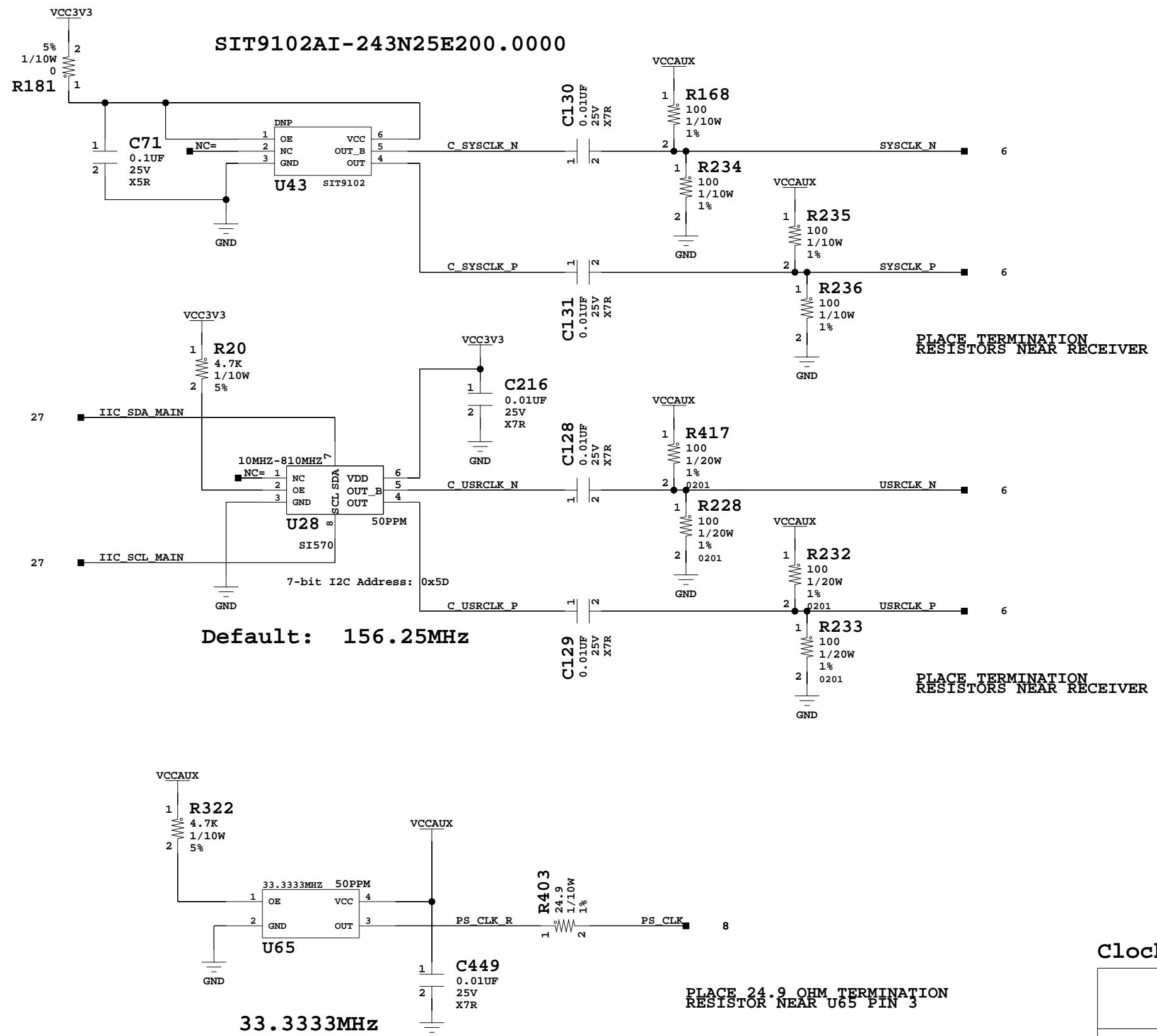
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Title: I/O Connector

Date: 10/11/2024:01:10 Ver: 1.1

Sheet Size: B Rev: 02

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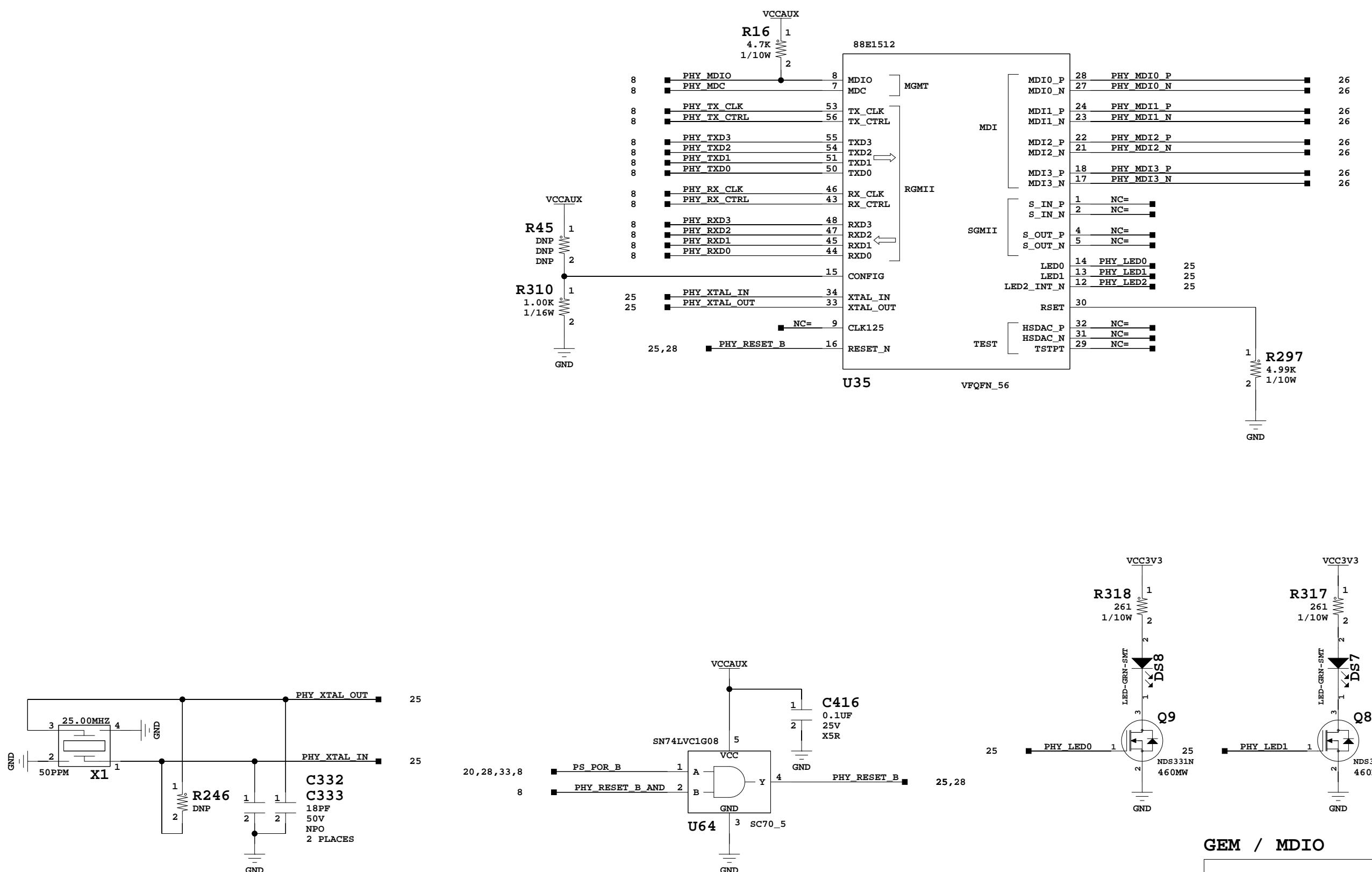
**Clocks****TRIPLE CROWN**

Title: Clocks

Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev: 01

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SEE CONFIGURATION MAPPING TABLE FOR JUMPER SETTINGS

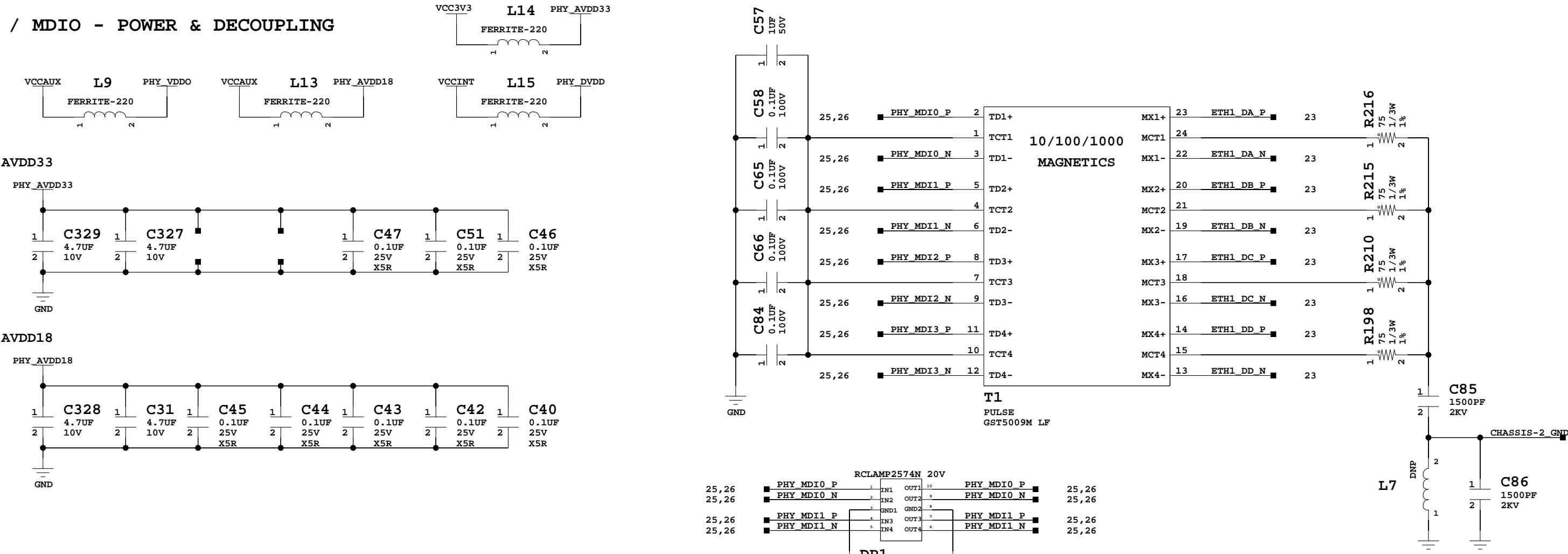
TEST PORT: IF USING THE TEST PORT INSTALL 49.9 OHM PULLDOWN RESISTORS
ON HSDAC_P AND HSDAC_N.

TRIPLE CROWN

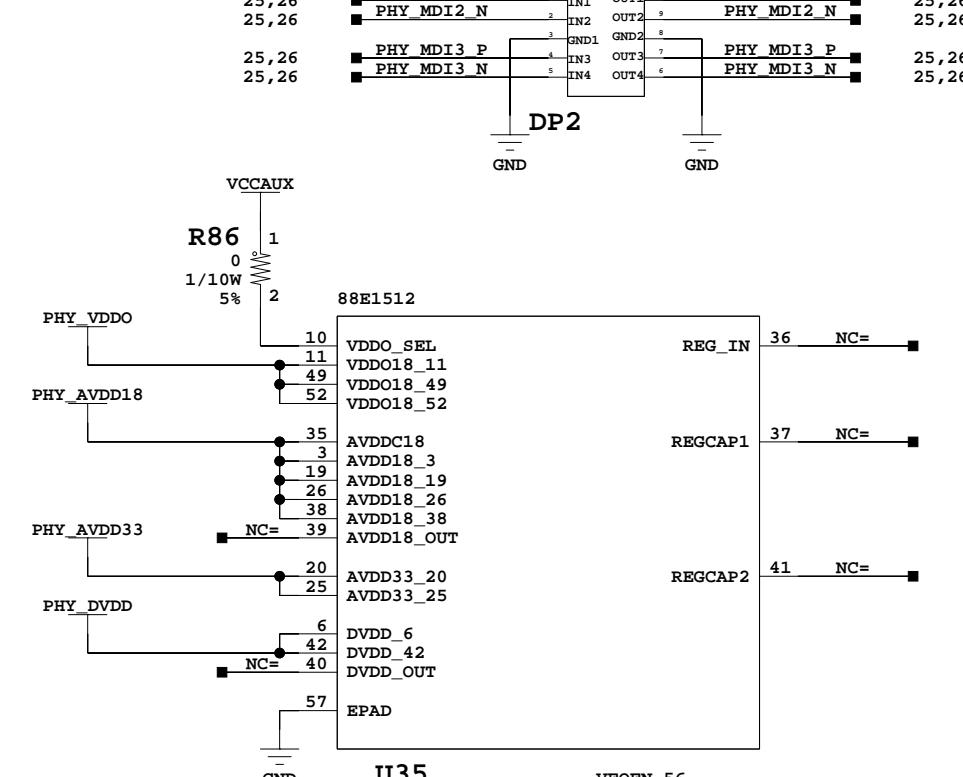
Title: GEM / MDIO

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GEM / MDIO - POWER & DECOUPLING



Chassis GND Accessible on PCB?



GEM / MDIO

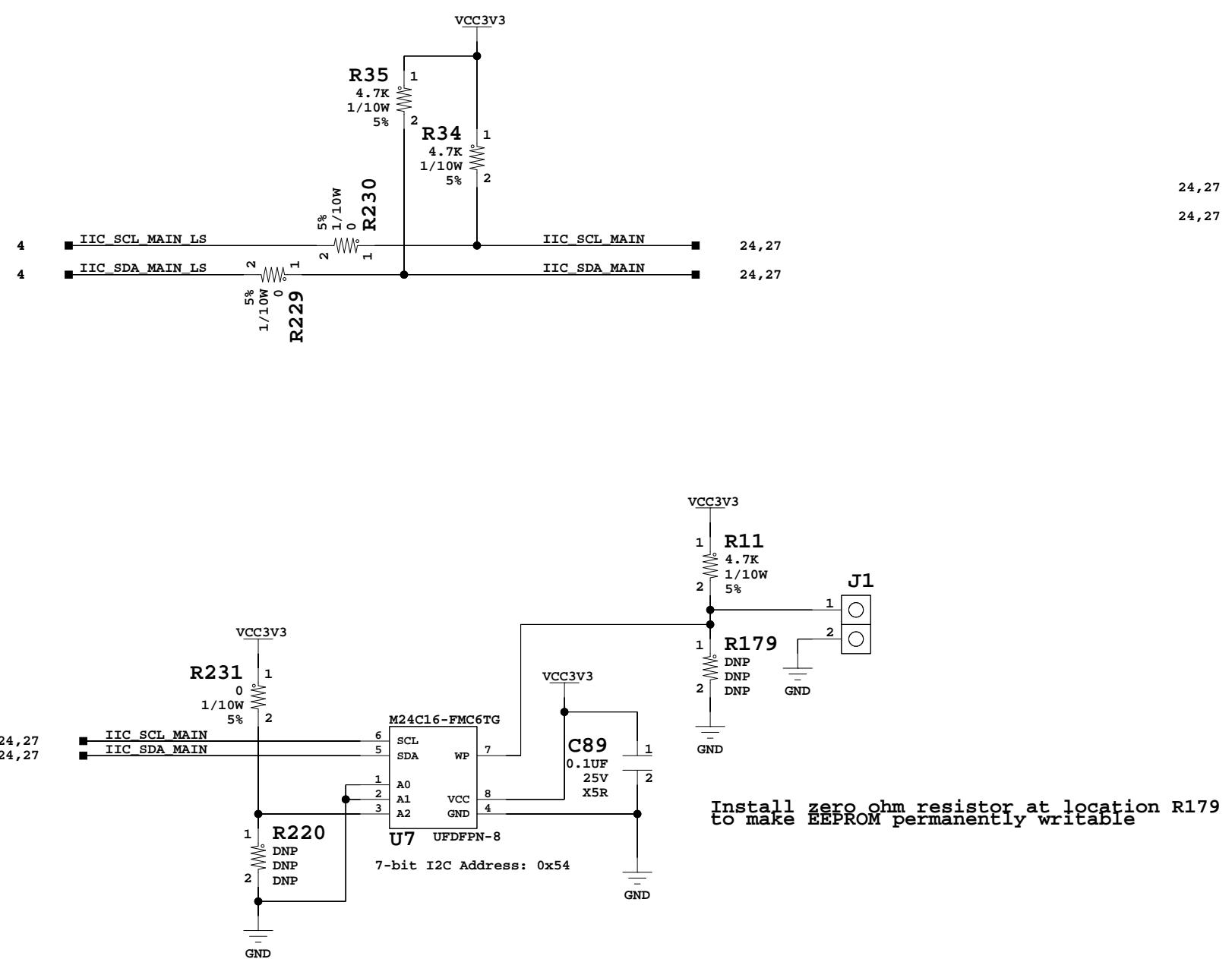
TRIPLE CROWN

Title: GEM / MDIO

Date: 10/11/2024:01:10 Ver: 1.0

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EEPROM, TEMPERATURE SENSOR

TRIPLE CROWN

Title: EEPROM - TEMPERATURE SENSOR

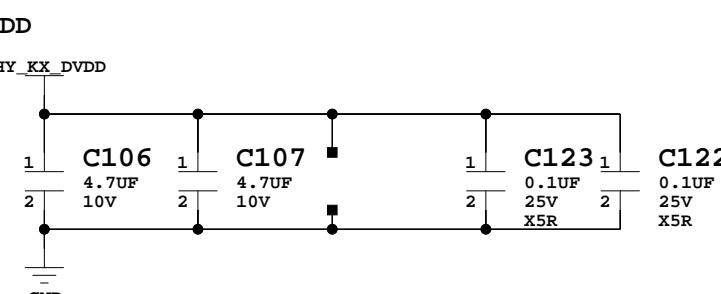
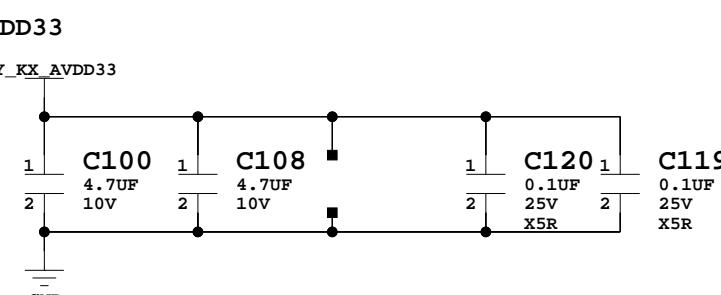
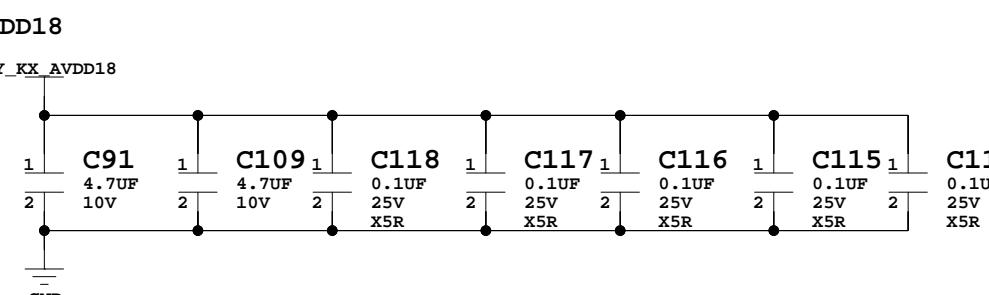
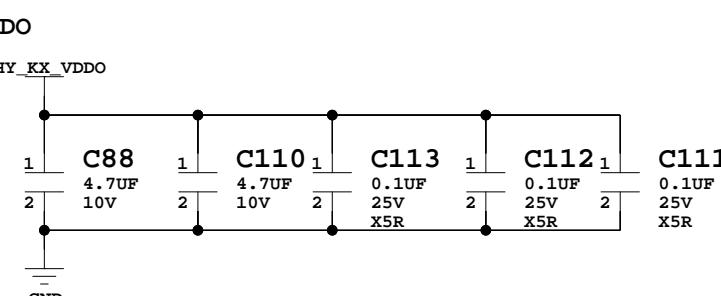
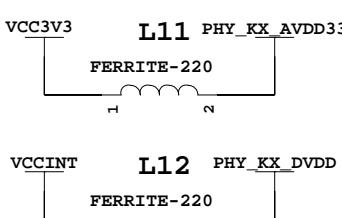
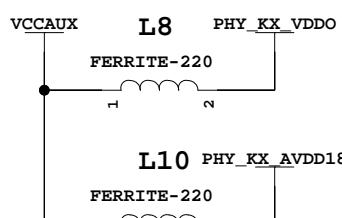
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Sheet Size: B Rev: 02

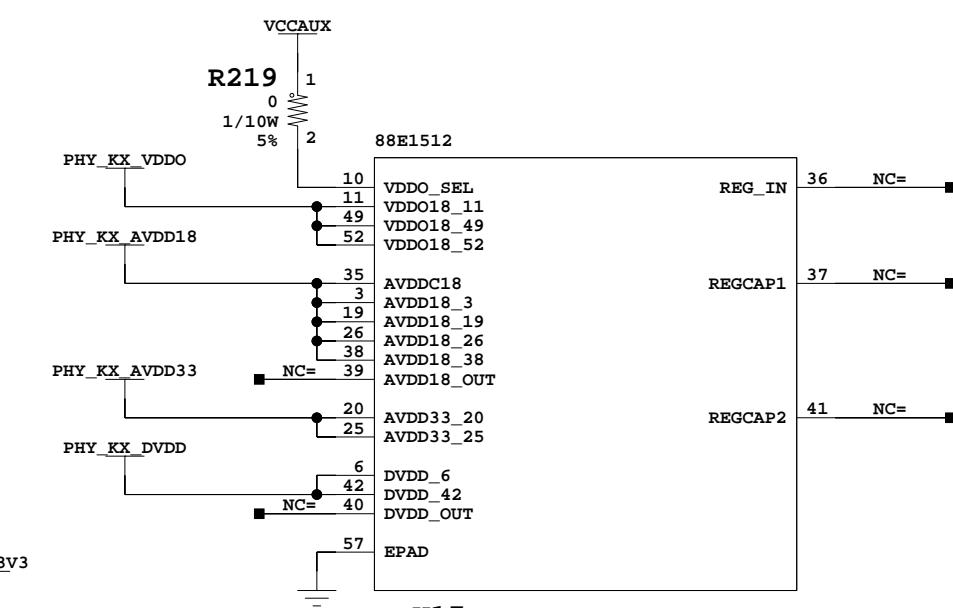
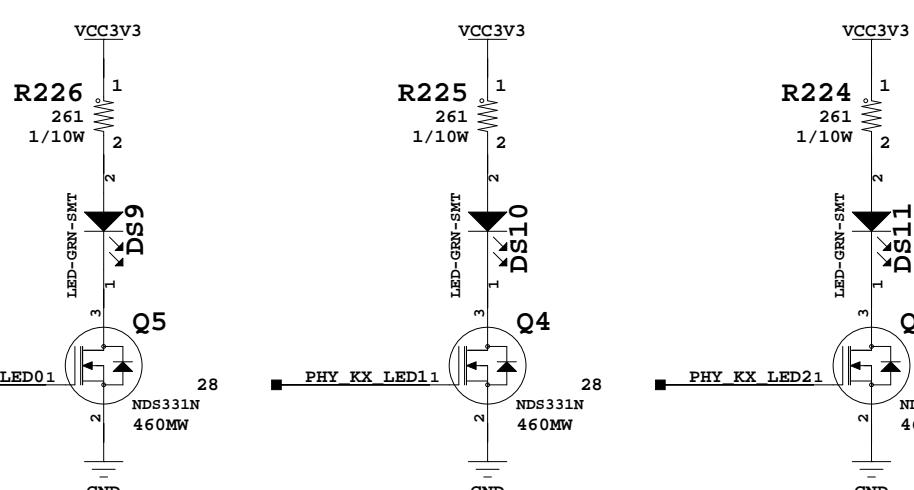
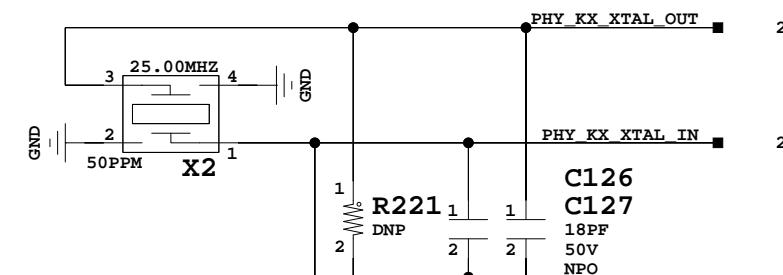
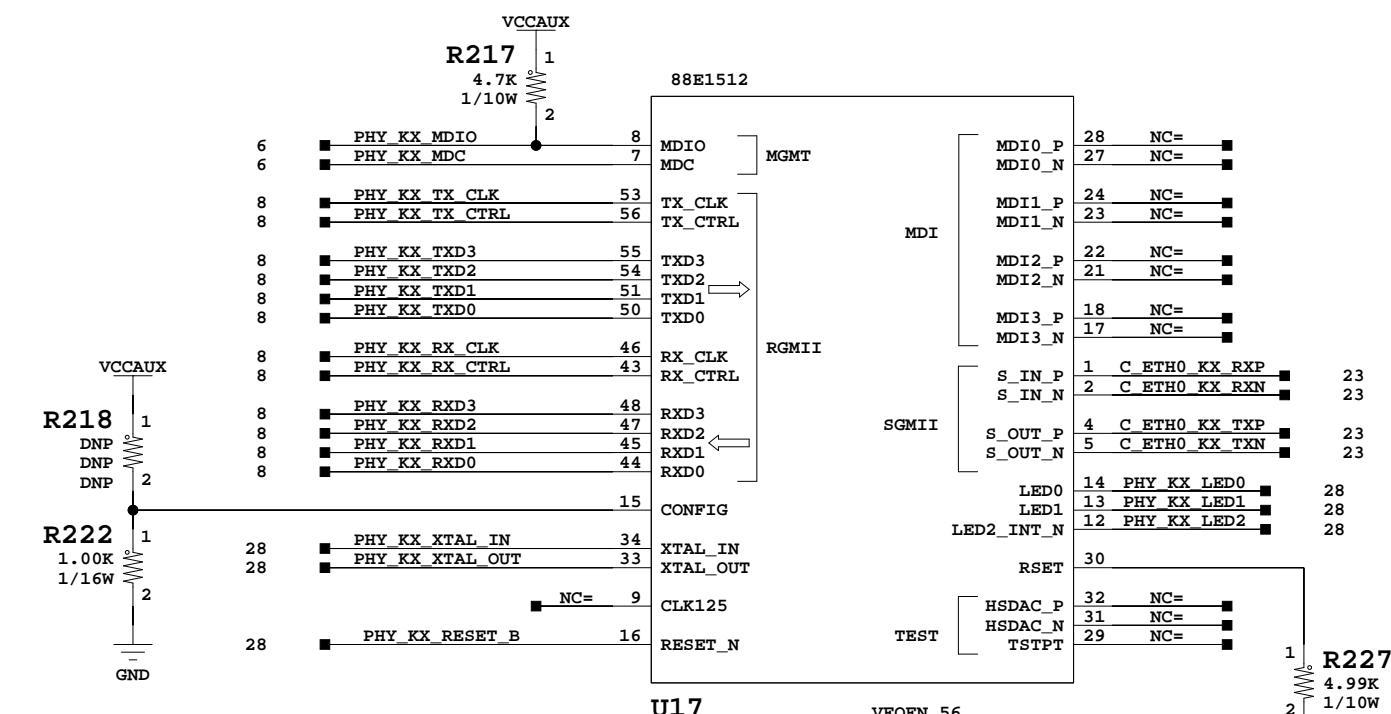
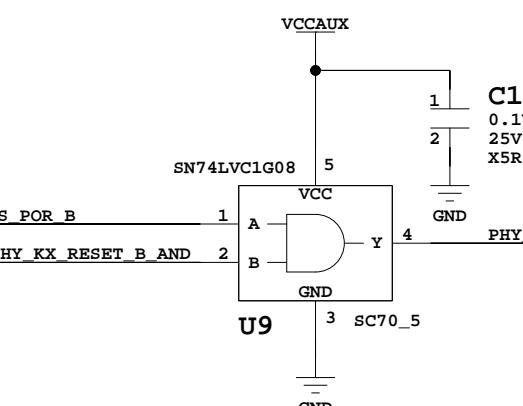
Sheet 27 of 25 Drawn By

27 of 35 Drawn By BF

POWER & DECOUPLING



ADD SEPARATE FPGA RESET CONTROL?



1000BASE-KX Ethernet

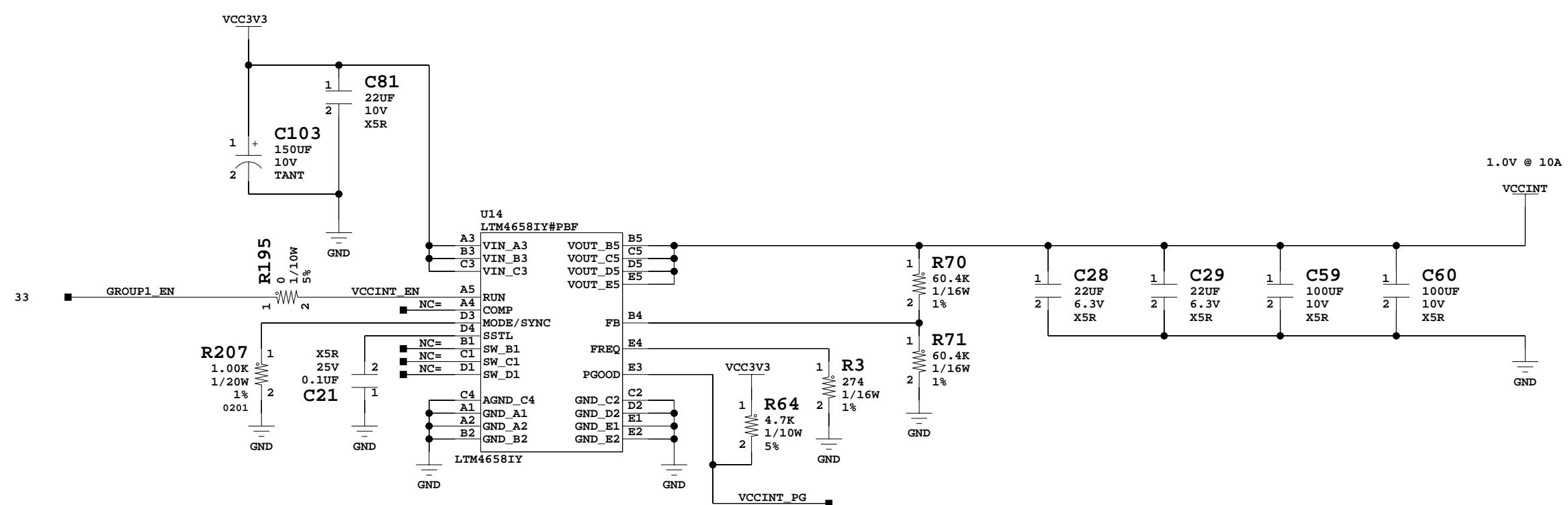
TRIPLE CROWN

Title: 1000BASE-KX Ethernet

Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev: 01

Sheet 28 of 35 Drawn By TG



1.0V 10A Power Regulator

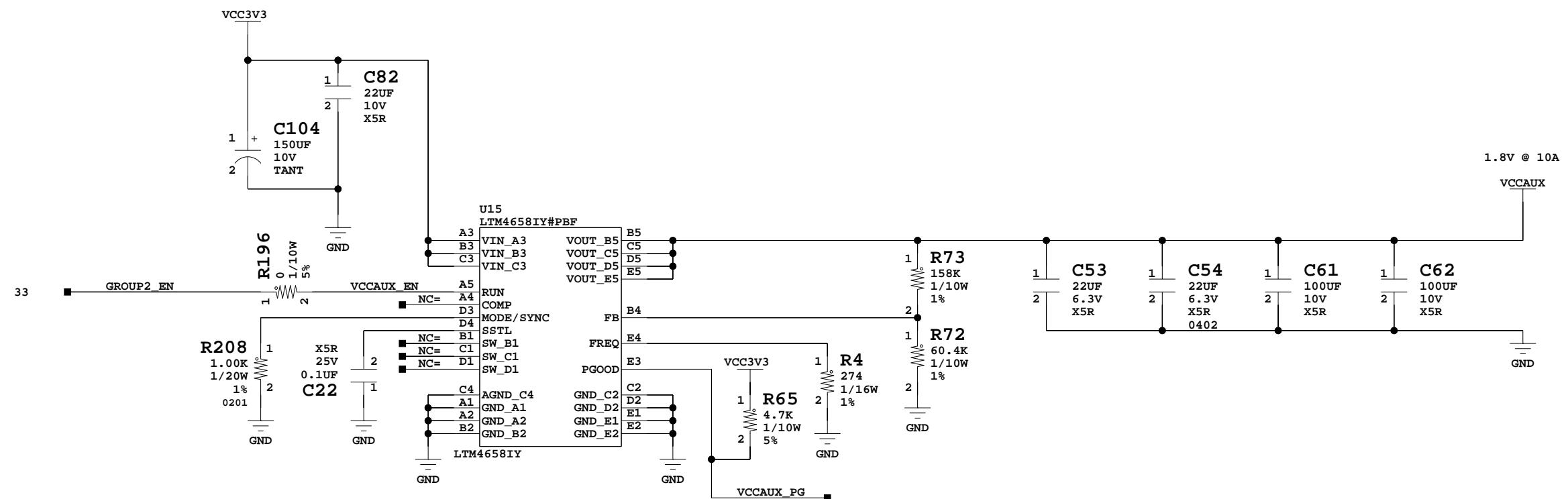
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Title: 1.0V 10A Power Regulator

Date: 10/11/2024:01:10	Ver: 1.0
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Sheet Size: B	Rev: 01
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Sheet 29 of 35	Drawn By TG
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1.8V 10A Power Regulator

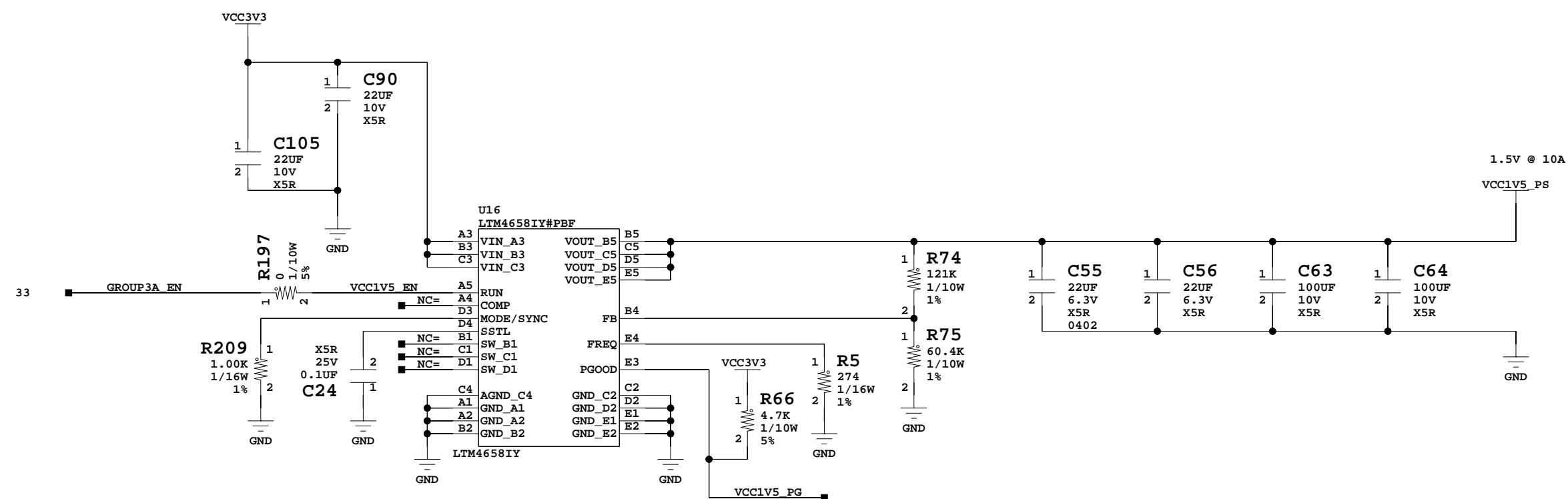
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Title: 1.8V 10A Power Regulator

Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev:

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1.5V 10A Power Regulator

TRIPLE CROWN

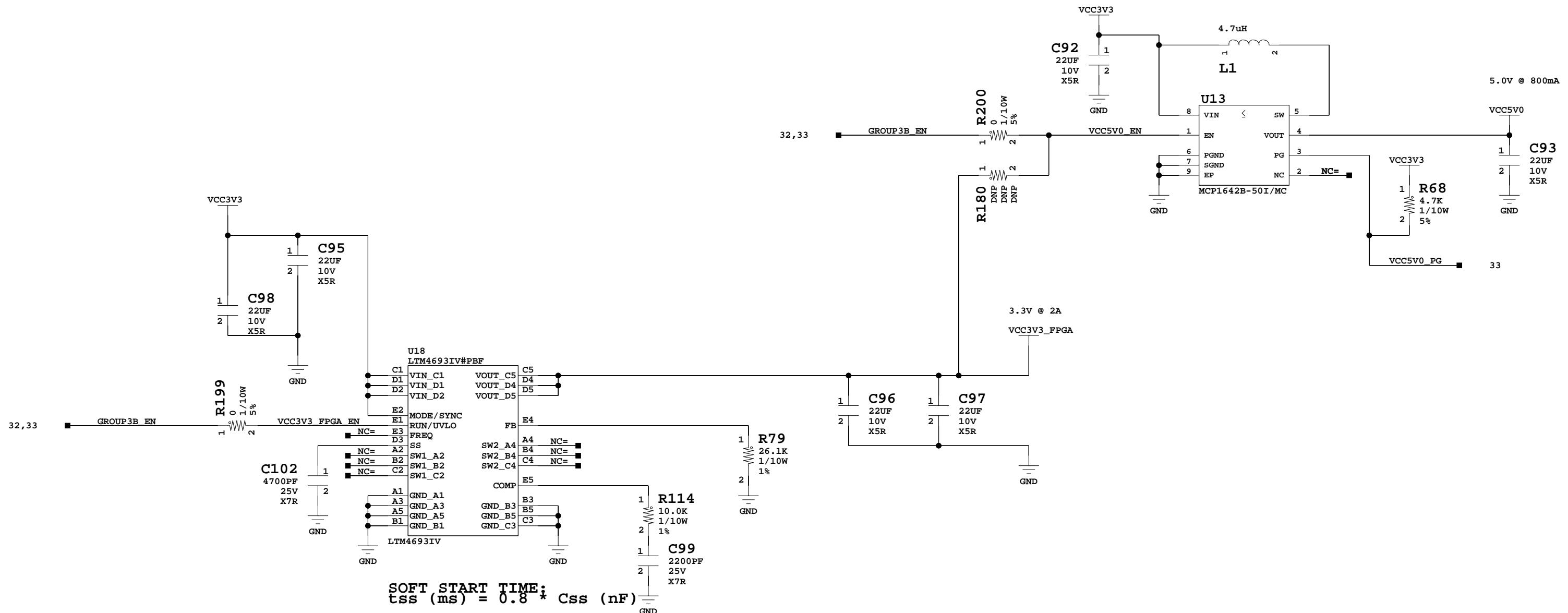
Title: 1.5V 10A Power Regulator

Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev: 01

Sheet 31 of 35 Drawn By

51 55



3.3V, 5V Power Regulators

TRIPLE CROWN

Title: 3.3V and 5V Power Regulators

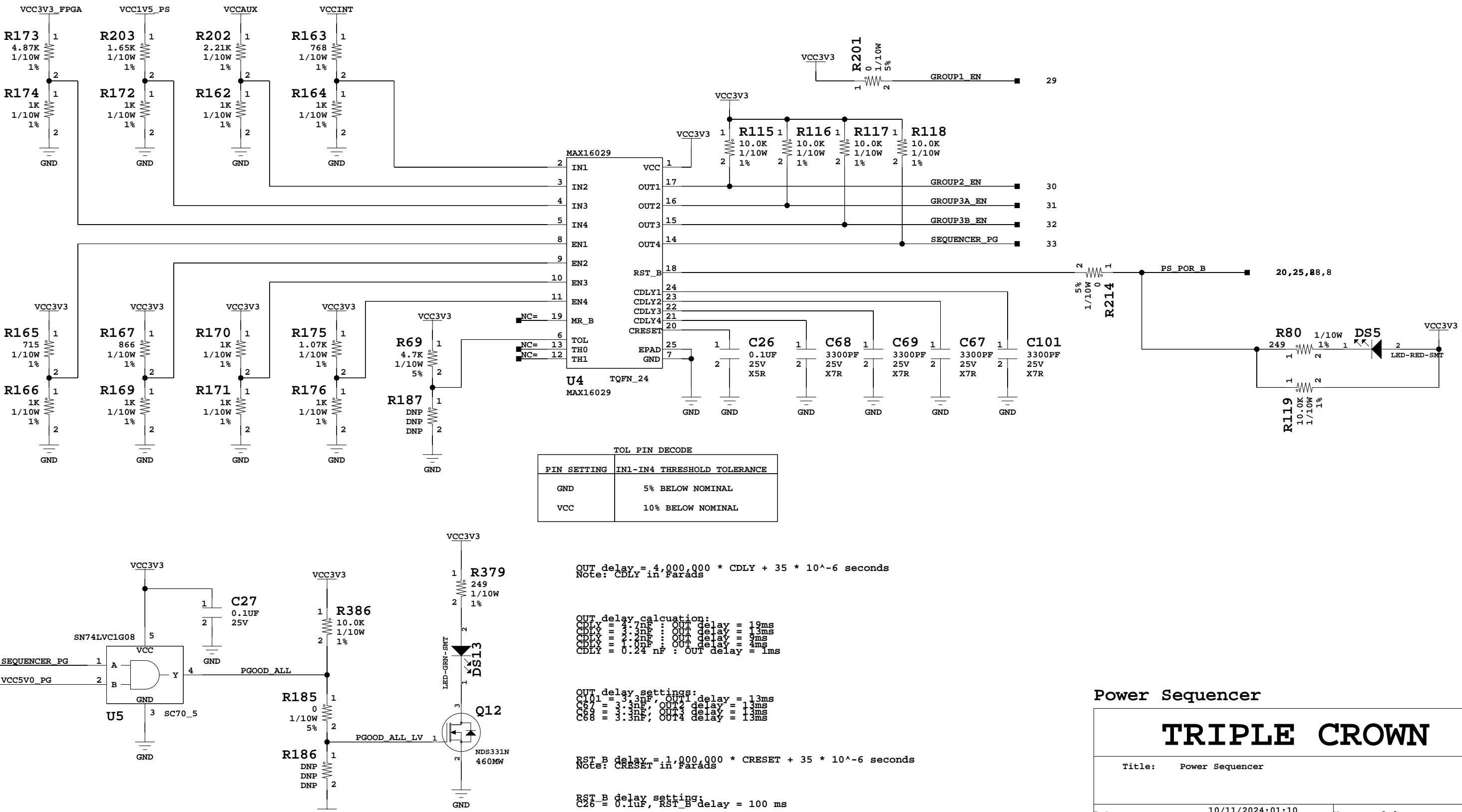
Date: 10/11/2024:01:10	Ver: 1.0
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Sheet Size: B	Rev: 01
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Sheet 32 of 35	Drawn By TG
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Power Sequence Order

1. VCCINT (1.0V)
2. VCCAUX (1.8V); VCCPLL (1.8V)
3. VCC1V5 (1.5V); VCC3.3V_FPGA (3.3V), VCC5V0 (5V)



Power Sequencer

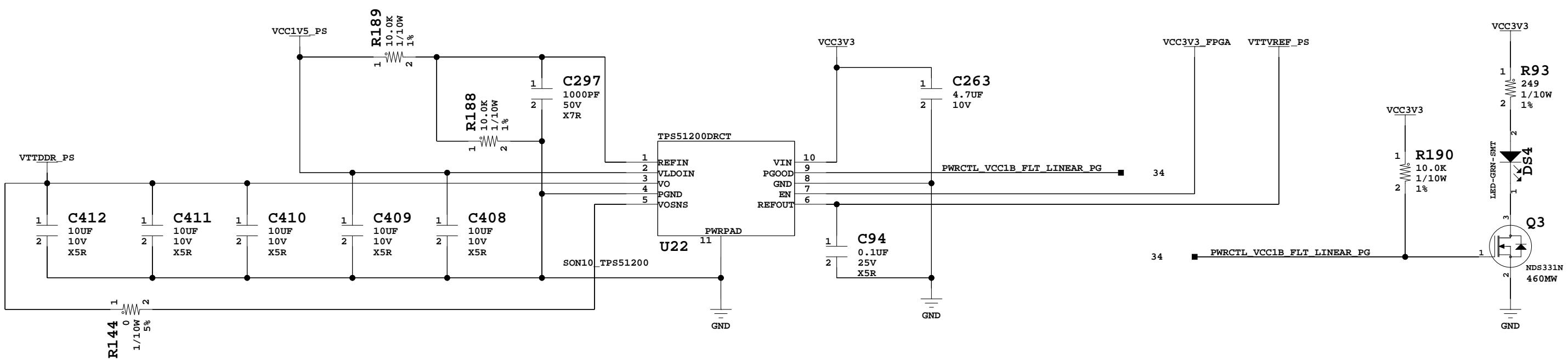
TRIPLE CROWN

Title: Power Sequencer

Date: 10/11/2024:01:10 Ver: 1.0

Sheet Size: B Rev: 01

Sheet 33 of 35 Drawn By TG



Place R144 close to DDR3 device that is farthest from TPS51200DRCT

Linear Power Supplies

TRIPLE CROWN

Title: Linear Power Supplies

Date: 10/11/2024:01:10	Ver: 1.0
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Sheet Size: B	Rev: 01
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Sheet 34 of 35	Drawn By TG
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**Update P/Ns
for
Mechanical Parts**



MSO1

STANOFF_0P625



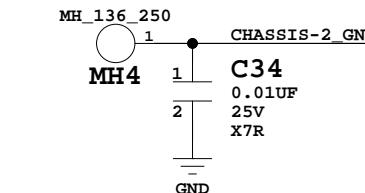
MN1

NUT_SS_4-40



MS1

MACHINE_SCREW_4-40



MSO2

STANOFF_0P625



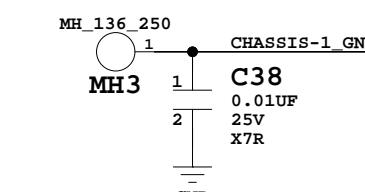
MN2

NUT_SS_4-40



MS2

MACHINE_SCREW_4-40



MSO3

STANOFF_0P625



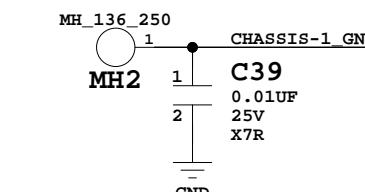
MN3

NUT_SS_4-40



MS3

MACHINE_SCREW_4-40



MSO4

STANOFF_0P625



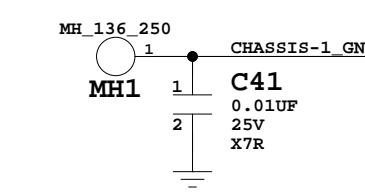
MN4

NUT_SS_4-40



MS4

MACHINE_SCREW_4-40



MSO5

STANOFF_0P625



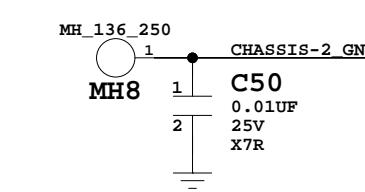
MN5

NUT_SS_4-40



MS5

MACHINE_SCREW_4-40



MSO6

STANOFF_0P625



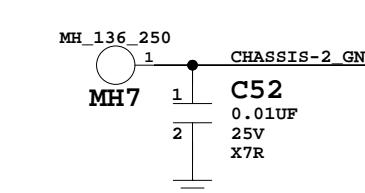
MN6

NUT_SS_4-40



MS6

MACHINE_SCREW_4-40



MSO7

STANOFF_0P625



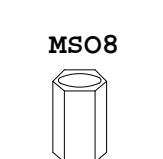
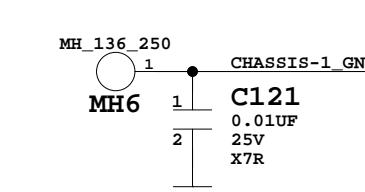
MN7

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MS12

MACHINE_SCREW_4-40



MSO8

STANOFF_0P625



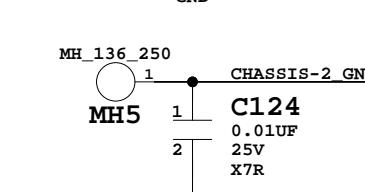
MN8

NUT_SS_4-40



MS13

MACHINE_SCREW_4-40



Mechanical Components

TRIPLE CROWN

Title: Mechanical Components

Date: 10/11/2024:01:11 Ver: 1.0

Sheet Size: B Rev: 01

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