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Title		
Size	Number	Revision
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File:	G:\Projects\...\Top.SchDoc	Drawn By:

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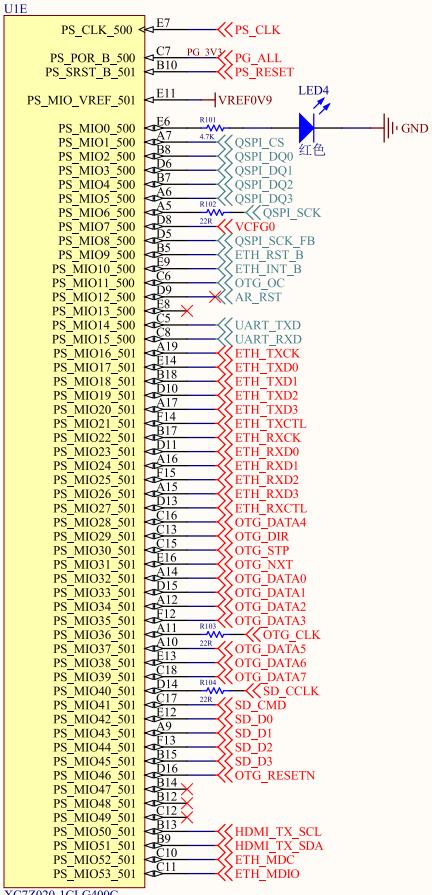


Table 6-5: Boot Mode MIO Strapping Pins

Pin Signal / Mode	MIO[8]	MIO[7]	MIO[6]	MIO[5]	MIO[4]	MIO[3]	MIO[2]	MIO[1]
JTAG Boot Mode; cascaded is most common	0	0	0	0	0	0	0	0
NOR Boot ⁽³⁾	0	0	1	0	0	0	0	0
NAND	0	1	0	0	0	0	0	0
Quad-SPI ⁽³⁾	1	0	0	0	0	0	0	0
SD Card	1	1	0	0	0	0	0	0

Mode for all 3 PLMs

PLL Enabled	PLL Bypassed
0	Hardware waits for PLL to lock, then executes BootROM.
1	Allows for a wide PS_Clk frequency range.

MIO Bank Voltages⁽⁴⁾

Bank 1	Bank 0	Voltage Bank 0 includes MIO pins 0 thru 15.
2.5 V, 3.3 V	0	Voltage Bank 1 includes MIO pins 16 thru 53.
1.8 V	1	

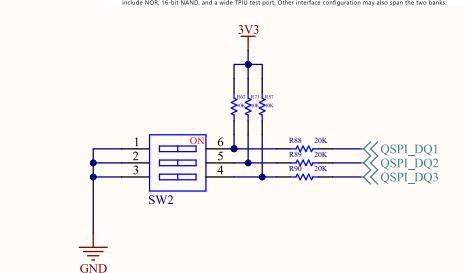


Table 6-6: JTAG Chain Routing⁽²⁾

[8] QSP S F) 1	A A 1 se 1V8
[] V FG0) 0	P A 0 se V
[6] QSP S) 0	P E ab e
[2] QSP DQ0) 0	TAG asca e o e

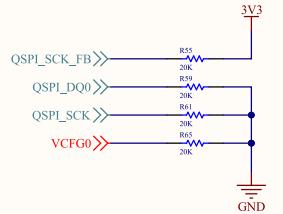
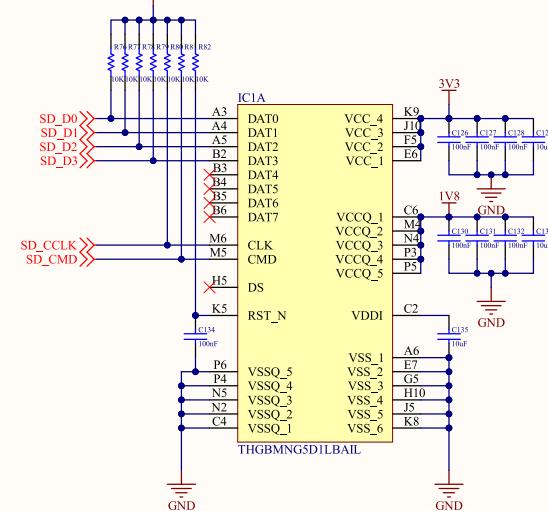
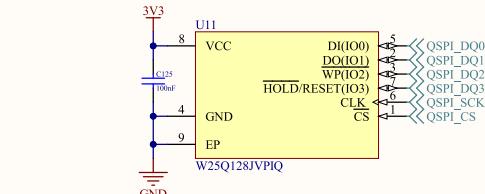


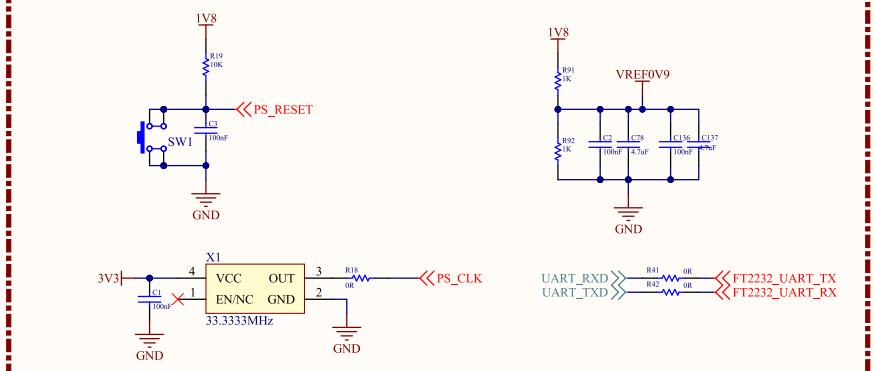
Table 6-7: QSP DQ1

[5] QSP DQ1
[] QSP DQ2
[] QSP DQ

QSI F LASH/ E MM



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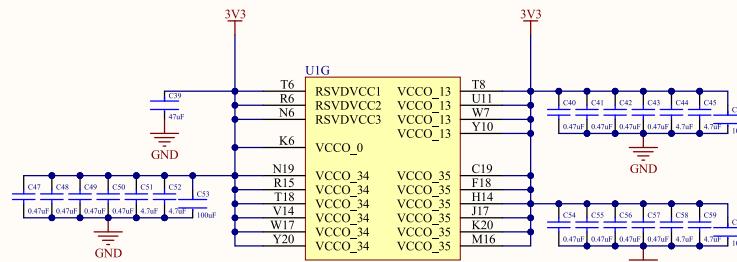
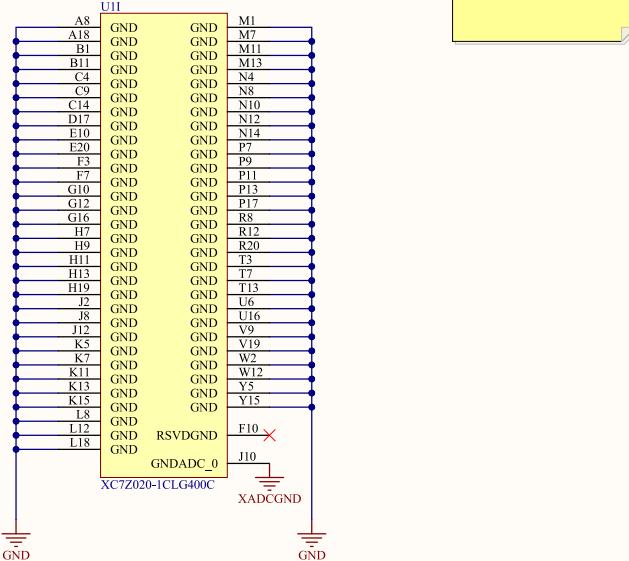
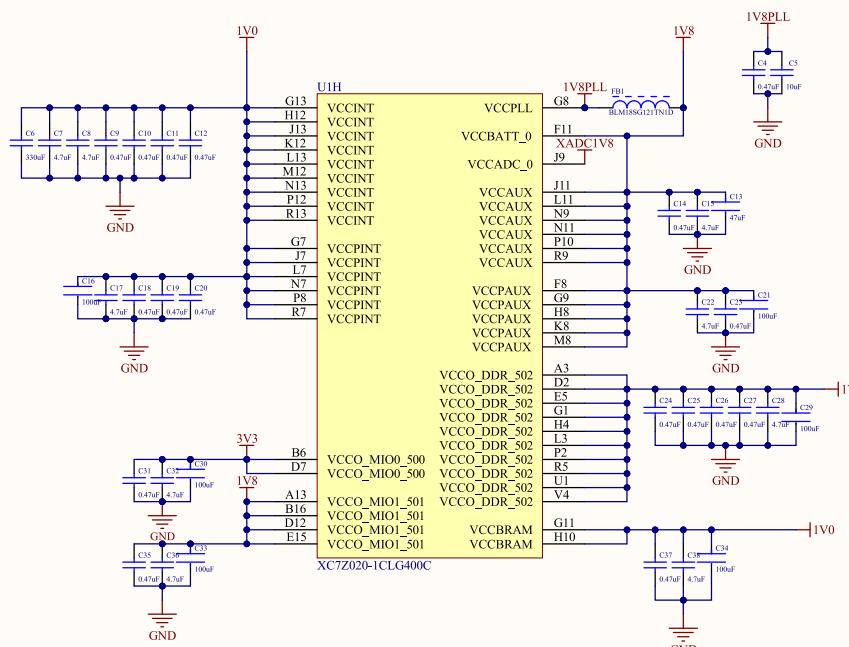
Size	Number	Revision
A3		
Date:	8-27-2024	Sheet of
File:	G:\Projects\...\ZYNO-PS.SchDoc	Drawn By:

Table 2-1: Power Pins

Type	Pin Name	Nominal Voltage	Power Pin Description
PS Power	V_{CCPINT}	1.0V	Internal logic
	V_{CCPAUX}	1.8V	I/O buffer pre-driver
	V_{CCO_DDR}	1.2V to 1.8V	DDR memory interface
	V_{CCO_MIO0}	1.8V to 3.3V	MIO bank 0, pins 0:15
	V_{CCO_MIO1}	1.8V to 3.3V	MIO bank 1, pins 16:53
	V_{CCPLL}	1.8V	Three PLL clocks, analog
PL Power	V_{CCINT}	1.0V	Internal core logic
	V_{CCAUX}	1.8V	I/O buffer pre-driver
	$V_{CC\#}$	1.2V to 3.3V	I/O buffers drivers (per bank)
	V_{CC_BATT}	1.5V	PL decryption key memory backup
	V_{CCBRAM}	1.0V	PL block RAM
	$V_{CCAUX_IO_G\#}$	1.8V to 2.0V	PL auxiliary I/O circuits
XADC	V_{CCADC} , $GNDADC$	N/A	Analog power and ground.
Ground	GND	Ground	Digital and analog grounds

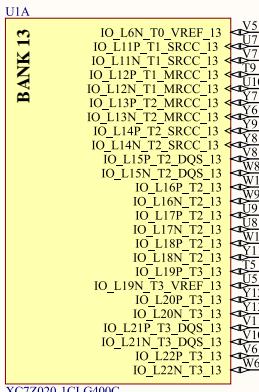
Note: Refer to the respective data sheet for recommended operating conditions.

Reserved	$RSVDVCC$	Dedicated	Tie to V_{CCO_0} .		
XADC					
V_{CCADC}	XADC supply relative to GNDADC	1.71	1.80	1.89	V
V_{REFP}	Externally supplied reference voltage	1.20	1.25	1.30	V

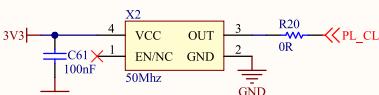


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Size	Number	Revision
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Date: 8-27-2024	Sheet of	
File: G:\Projects\...\ZYNO-Power.SchDoc	Drawn By:	

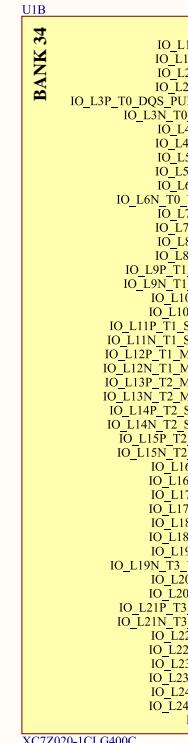
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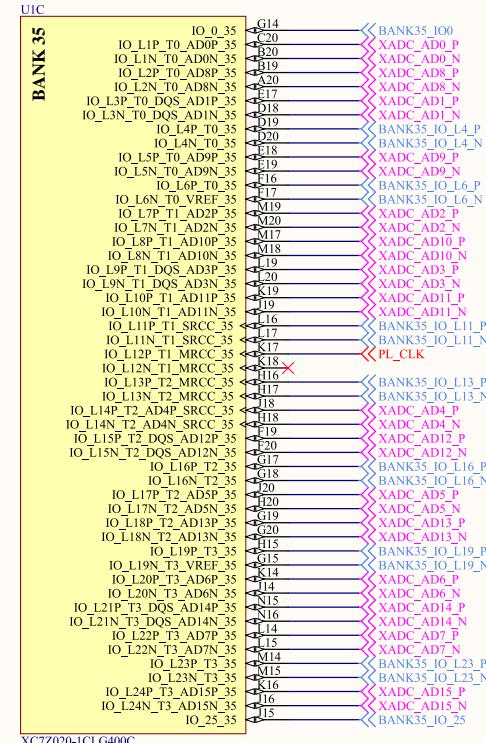
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XC7Z020-ICLG400C



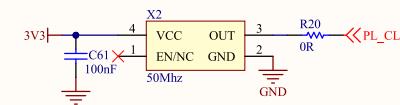
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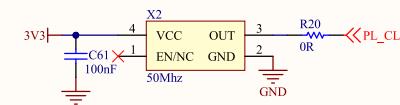
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Title

Size

Number

Revision

Date:

Sheet of

File:

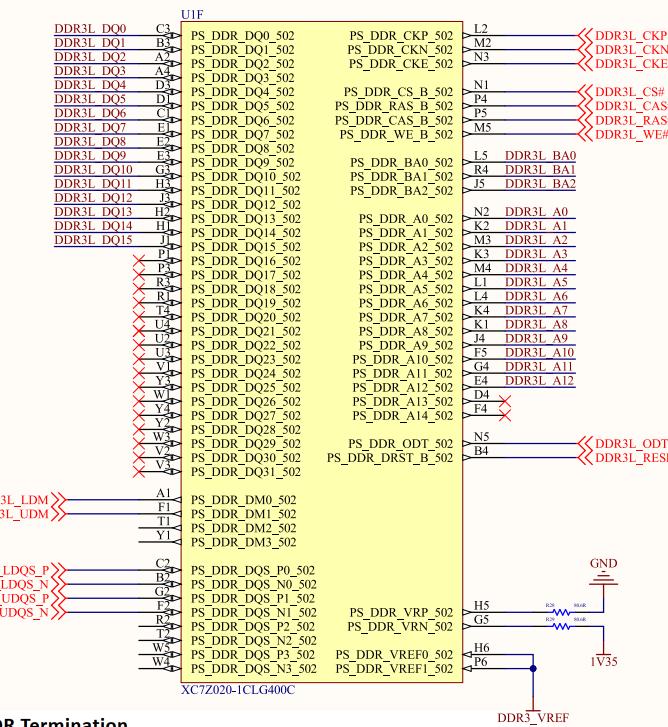
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B

C

D



For better signal integrity, DDR2 and DDR3 clock, address, command and control signals need to be terminated. For DDR2, ODT and CKE are not terminated and should be pulled down during memory initialization with a 4.7 kΩ resistor to GND. For DDR3, the DRST_B signal is not terminated and should be pulled down during memory initialization with a 4.7 kΩ resistor to GND.

LPDDR2 does not require termination.

Table 5-7: DDR Termination

Termination	LPDDR2	DDR2	DDR3/3L	Comments
Rterm	N/A	50Ω	400Ω	
Rclk	N/A	100Ω	80Ω	
Rdown	4.7 kΩ	4.7 kΩ	4.7 kΩ	There is no DDR_DRST_B in LPDDR2/DDR2 device side

Note: DDR3 memory also supports terminated DQS signals through the TDQS_P and TDQS_N pins. This feature is not supported on Zynq-7000 SoC devices and those pins should be left floating.

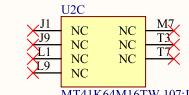
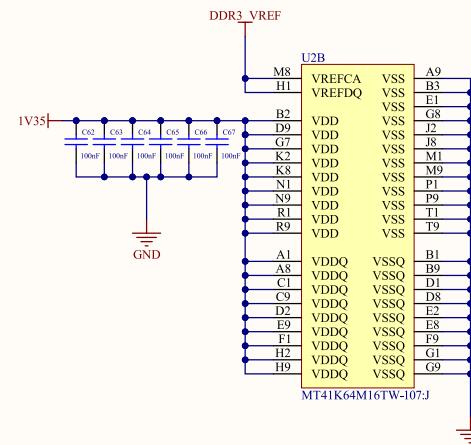
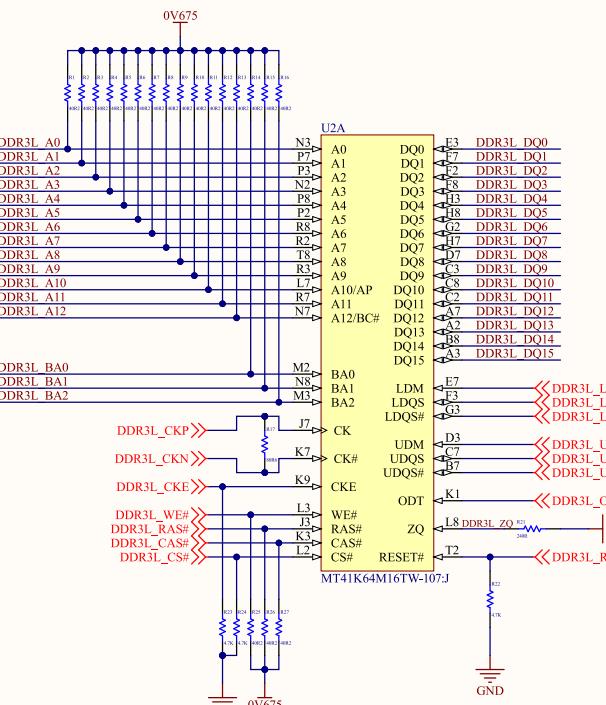
PS_DDR_VRN, PS_DDR_VRP – PS DDR Termination Voltage

PS_DDR_VRN and PS_DDR_VRP provide a reference for digitally controlled impedance (DCI) calibration. For memory types that require termination (DDR2, DDR3) VRP must be pulled Low to GND and VRN needs to be pulled High to V_{CCO_DDR} . For DDR2/3, the resistor value on VRP and VRN should be twice the memory's trace and termination impedance. For example, for a DDR3 memory with a 400Ω termination and board impedance, an 80Ω resistor must be used to pull-up/down VRP and VRN. For LPDDR2, the DCI tunes the output impedance of the driver and therefore the resistor value on VRP and VRN should be equal to the transmission line impedance, typically set to 40Ω.

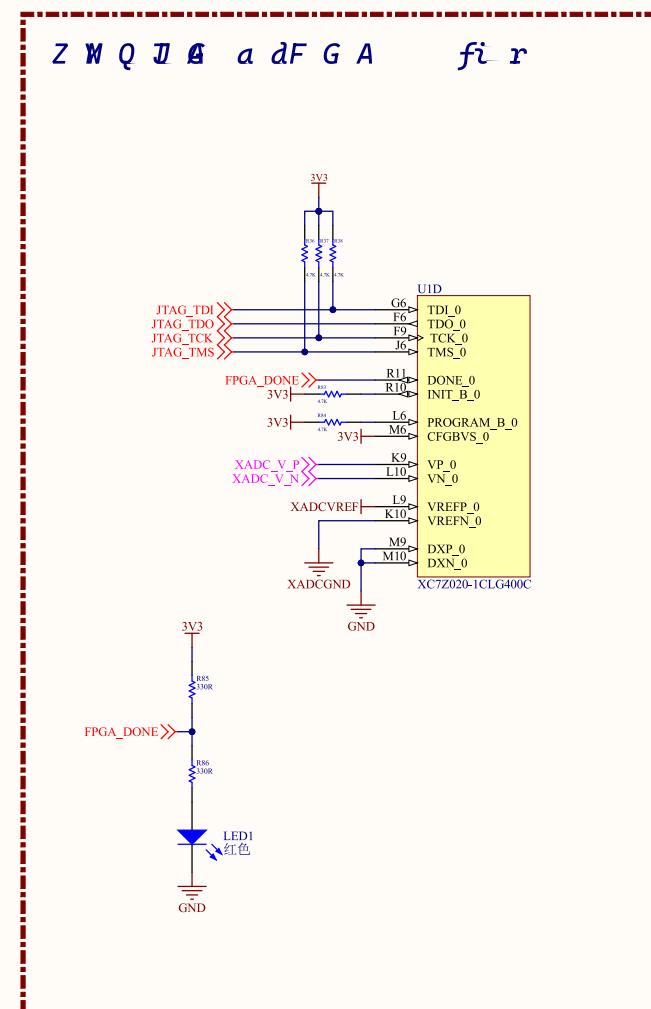
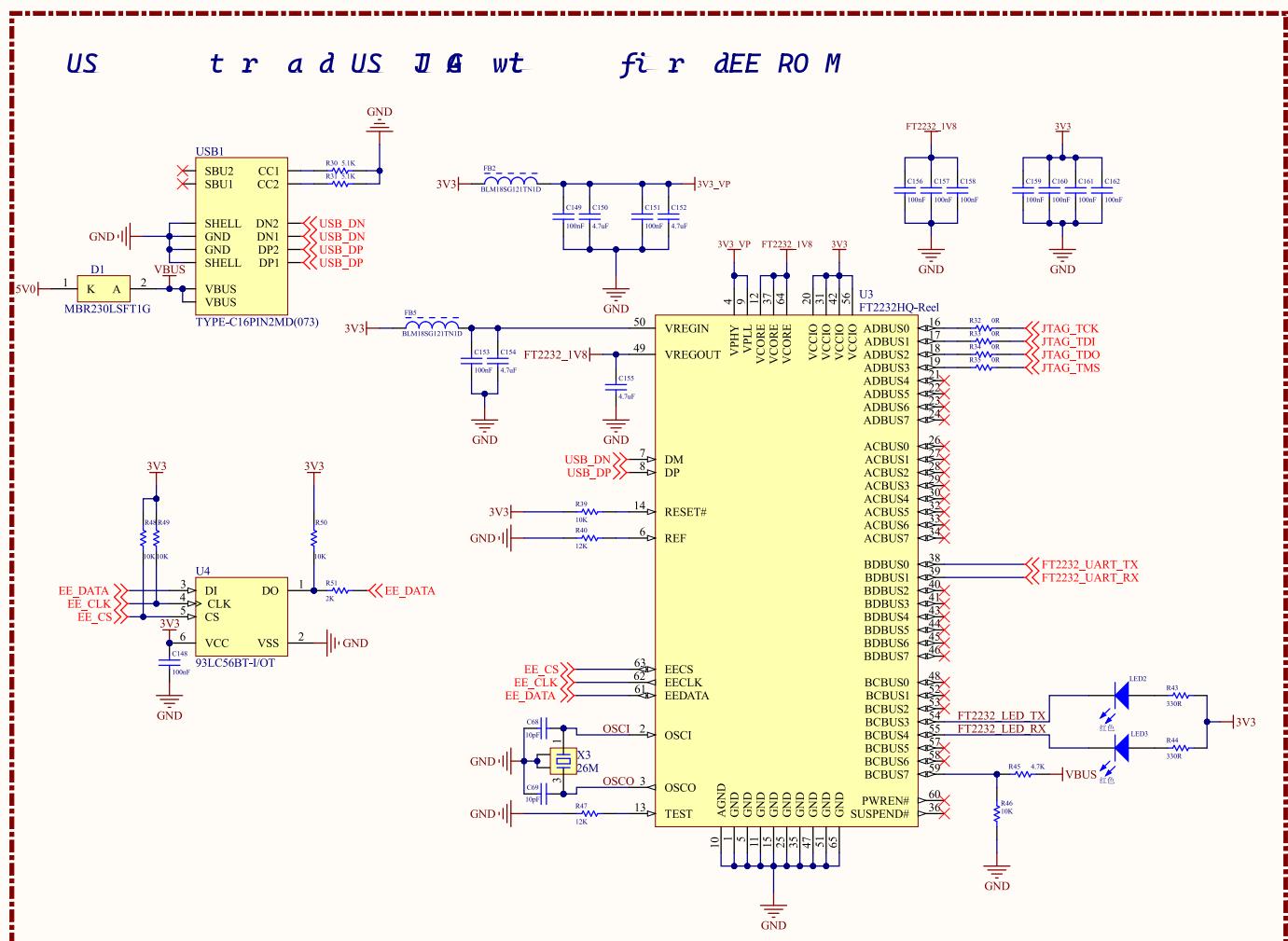
Table 5-2 shows the required values for the DCI VRN/VRP pull-down/pull-up resistors.

Table 5-2: DCI VRP and VRN Values

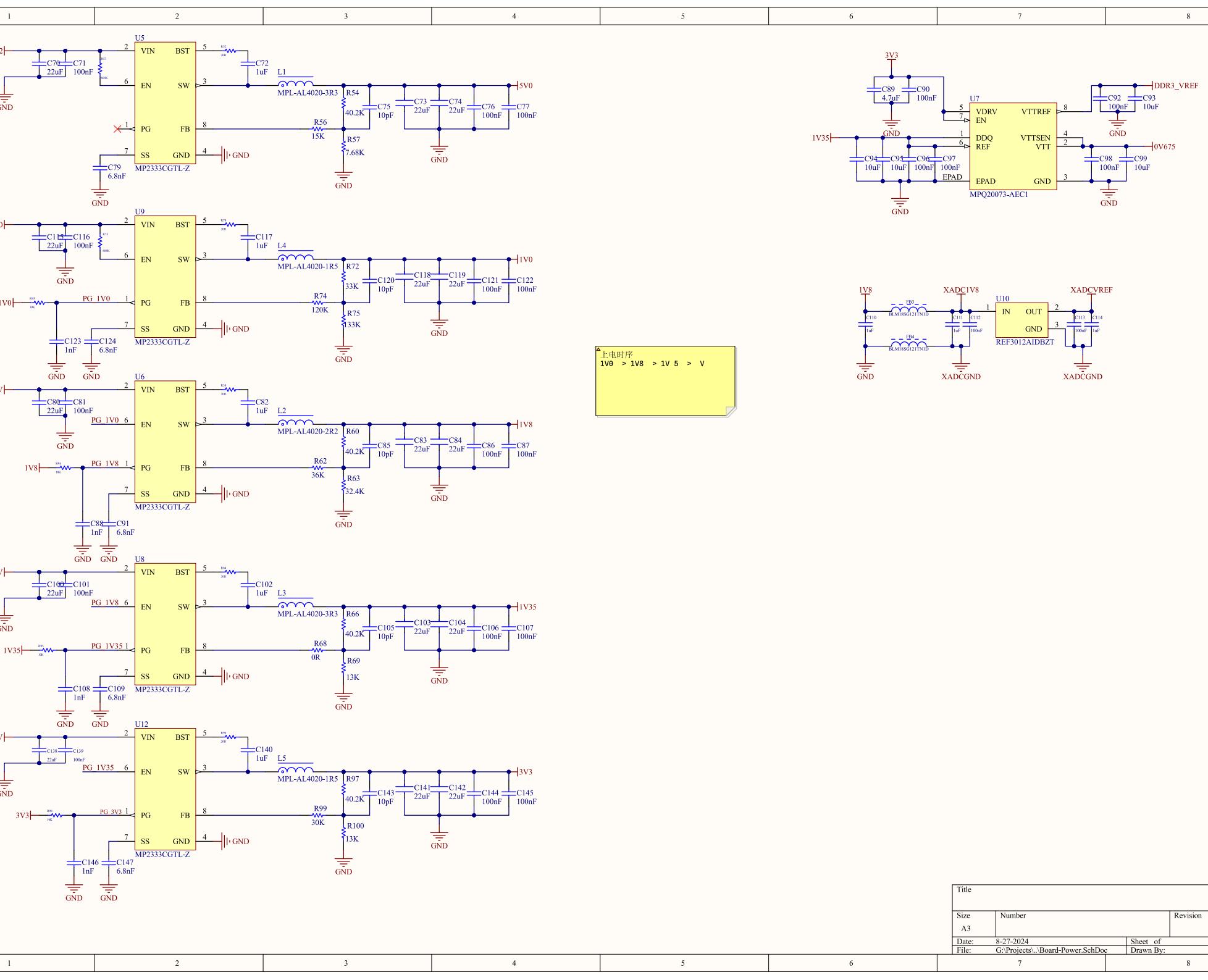
VRP/VRN	LPDDR2	DDR2	DDR3/3L
	40Ω (type I DCI trace impedance 40Ω)	100Ω (type III DCI trace impedance 50Ω)	80Ω (type III DCI trace impedance 40Ω)



Title		
Size	Number	Revision
A3		
Date: 8-27-2024	Sheet of	
File: G:\Projects\...\ZYNO-DDR3L.SchDoc	Drawn By:	

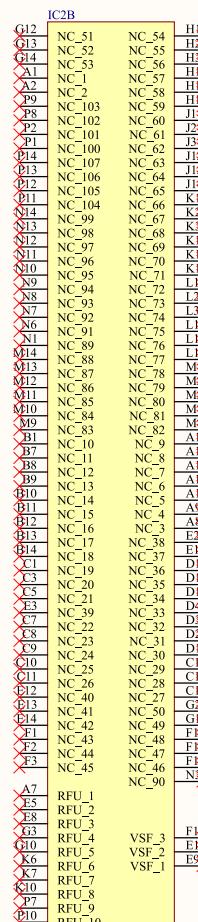


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Date:	8-27-2024	Sheet of
File:	G:\Projects\ZYNO-JTAG.SchDoc	Drawn By:



Title		
Size	Number	Revision
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Date: 8-27-2024	Sheet of	
File: G:\Projects\...\Board-Power.SchDoc		Drawn By:

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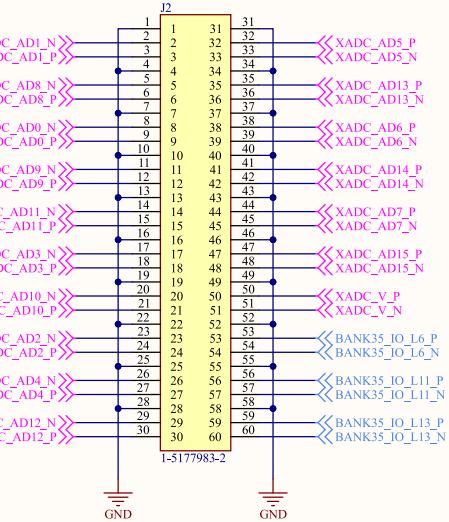
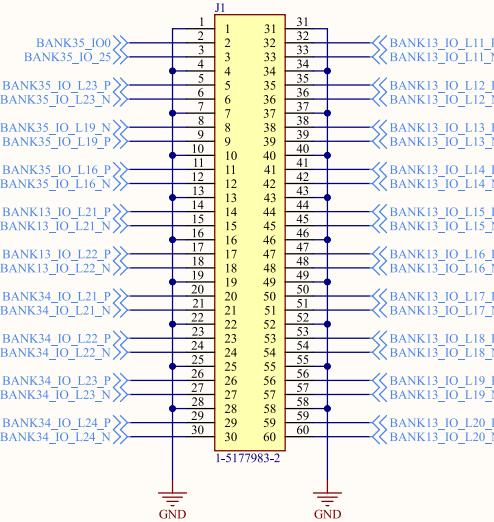
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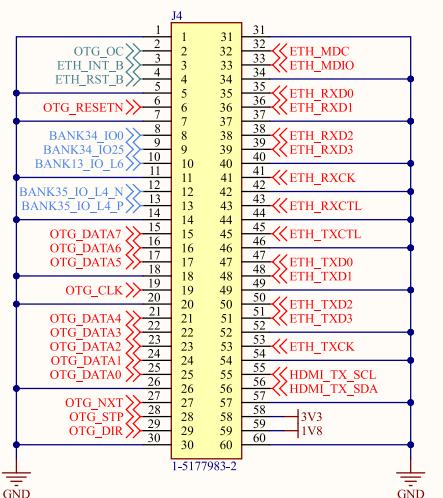
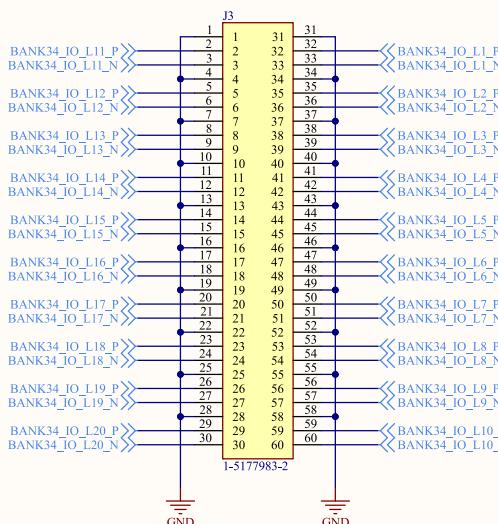
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Title		
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Date: 8-27-2024	Sheet of	
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