AUP-ZU3

Variant: Prototype

1/30/2025
V3I1

REAL DIGITAL | **© Real Digital 2024**

Title: AUP-ZU3 | ***Variant:*** Prototype

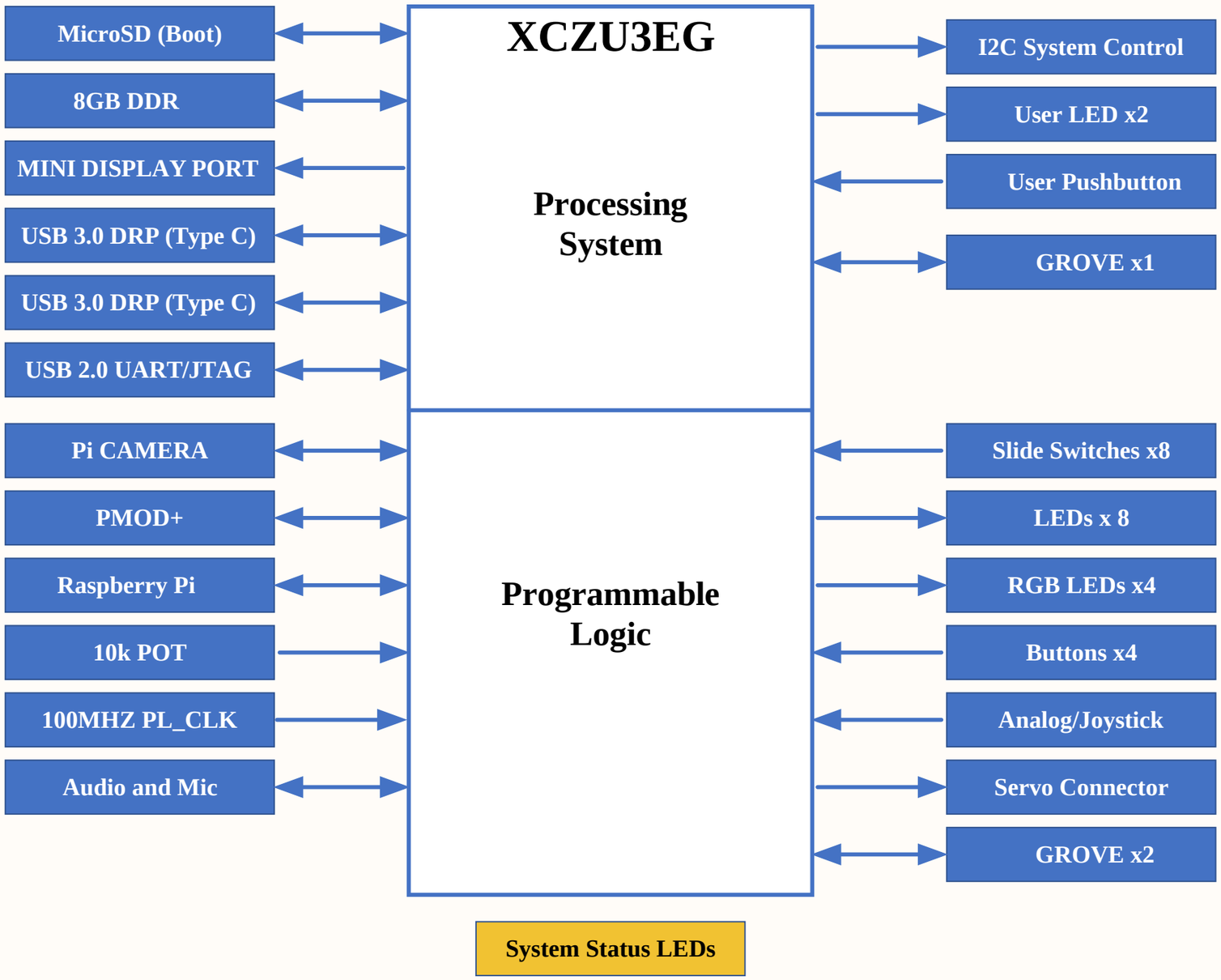
Page Contents: [01] - COVER PAGE.SchDoc

Size: A3 | ***DWG NO:*** KT-2024-0015-002-001A | ***Revison:*** V3I1

Date: 1/30/2025 | ***Checked by:*** * | ***Sheet*** 1 ***of*** 30

AUP-ZU3

(Block Diagram)



REAL DIGITAL			
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [02] - BLOCK DIAGRAM.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 2 *of* 30	

AUP-ZU3

(Power Diagram)

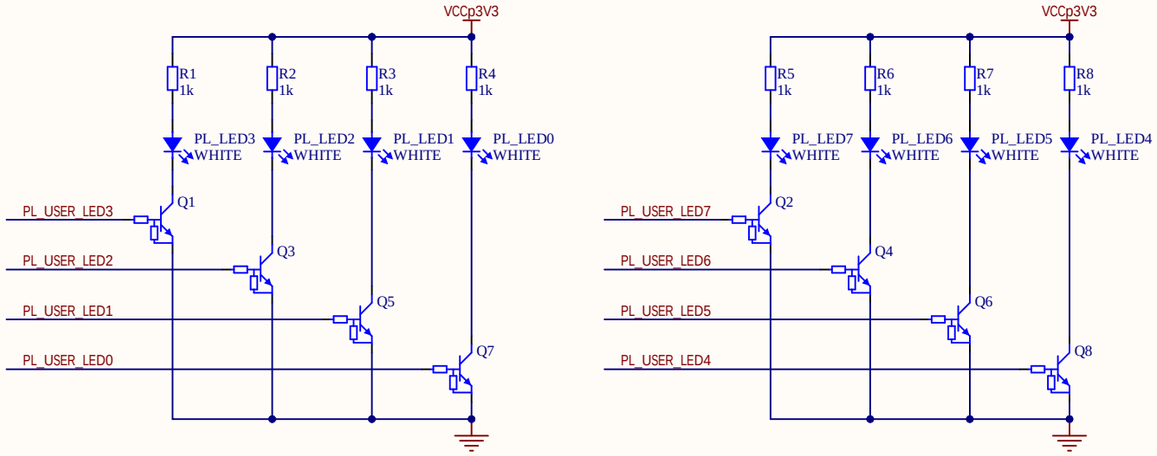
Legend

IC	**Programmable Logic**
Connector	**Processor System**
MISC	

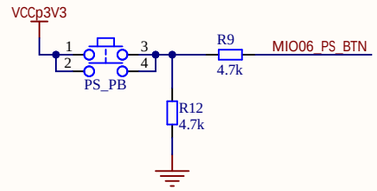
REAL DIGITAL		**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype
Page Contents: [03] - POWER DIAGRAM.SchDoc		
Size: A3	***DWG NO:*** KT-2024-0015-002-001A	***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 3 ***of*** 30

USER IO, LEDs

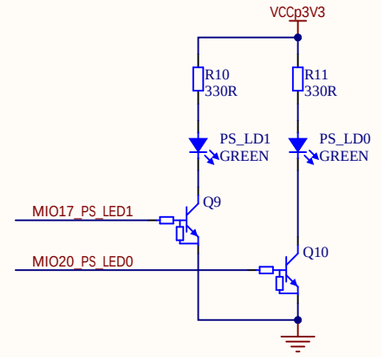
PL user-defined white LEDs



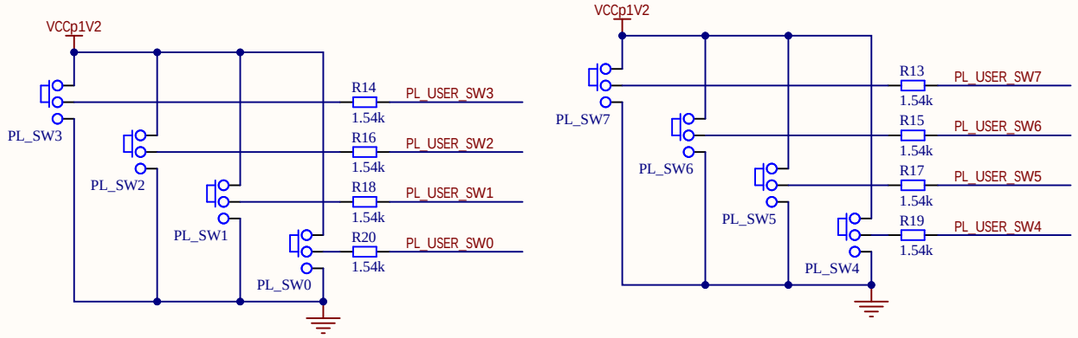
PS user-defined pushbutton



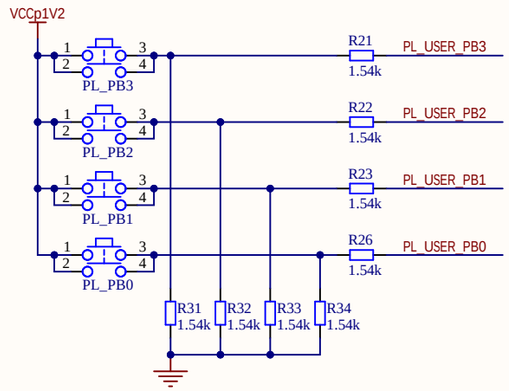
PS user-defined green LEDs



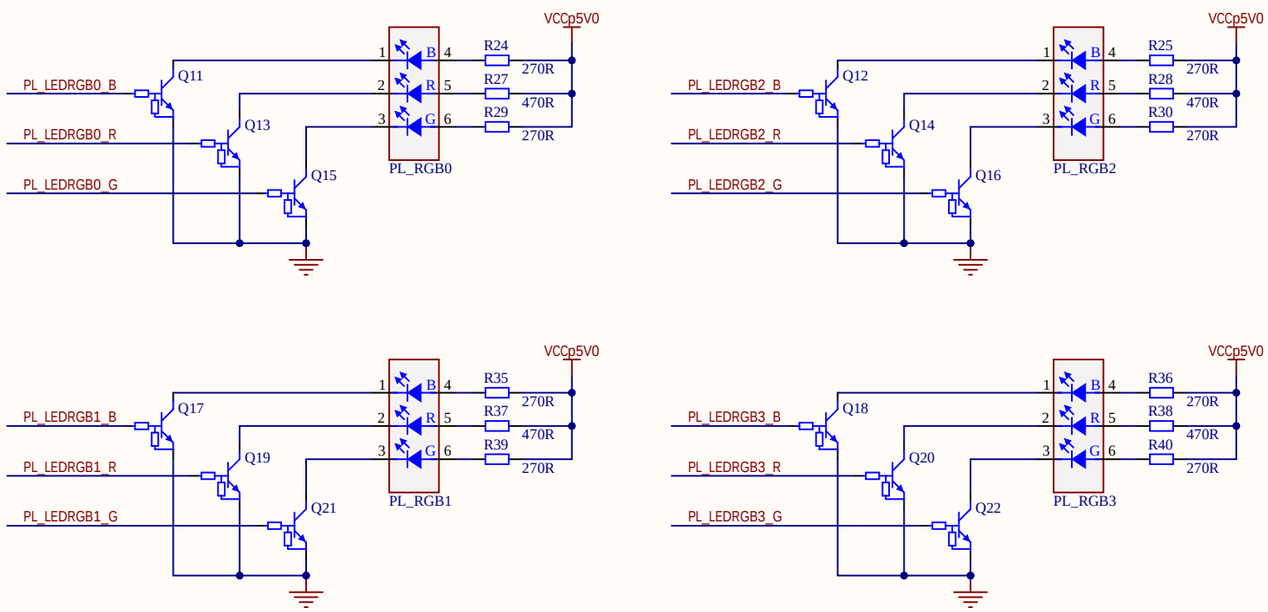
PL user-defined switches



PL user-defined pushbuttons



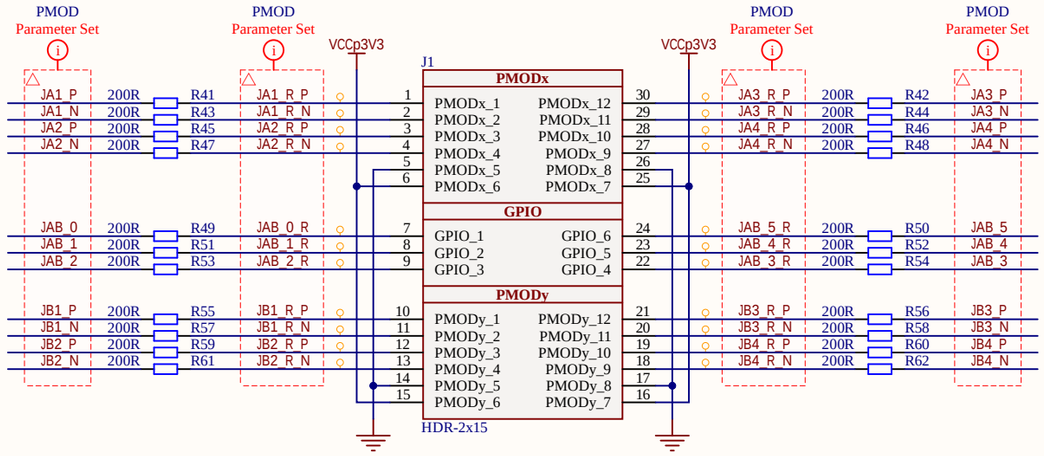
PL user-defined RGB LEDs

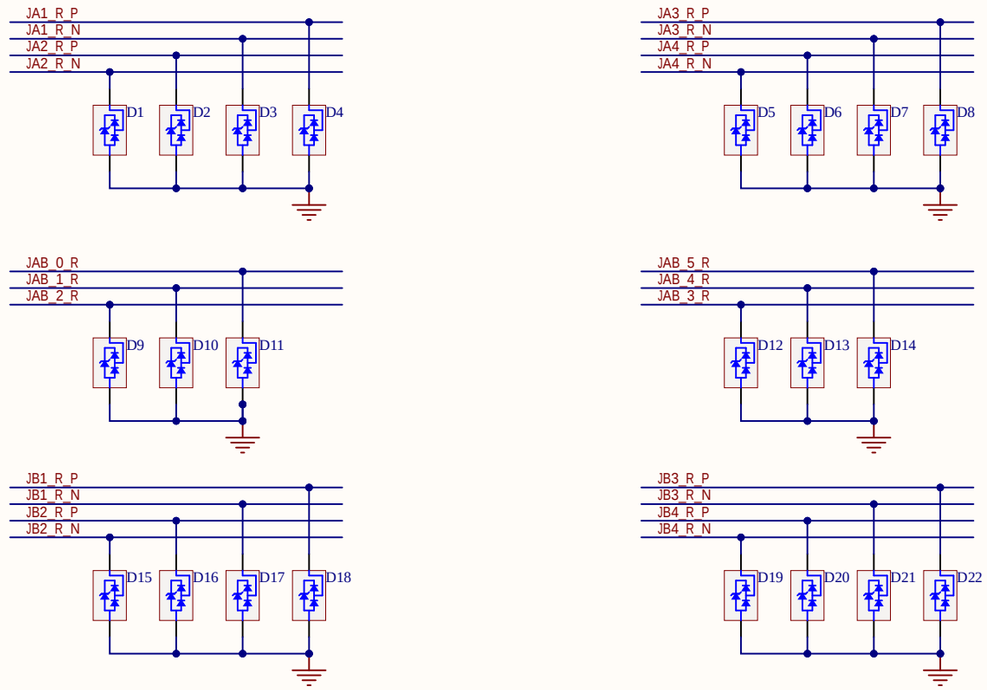


REAL DIGITAL		© Real Digital 2024	
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [04] - USER IO, LEDs.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 4 *of* 30	

PMOD HEADERS

PMOD A and B

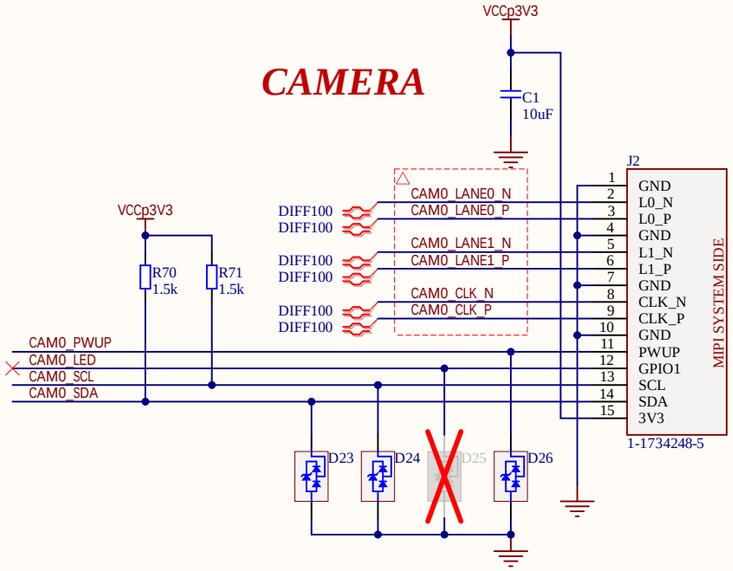


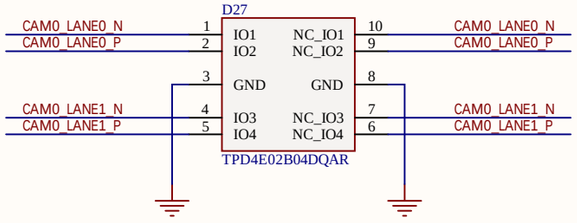


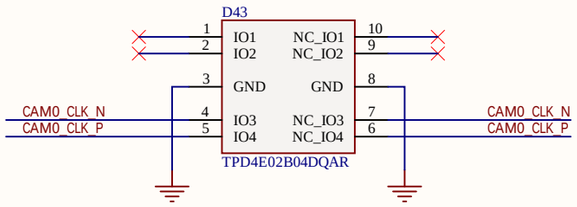
REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [05] - PMOD HEADERS.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 5 ***of*** 30	

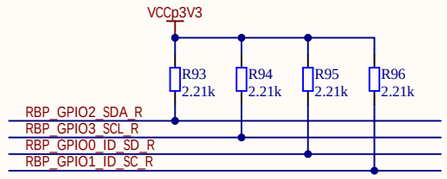
CAMERA AND RPI

CAMERA

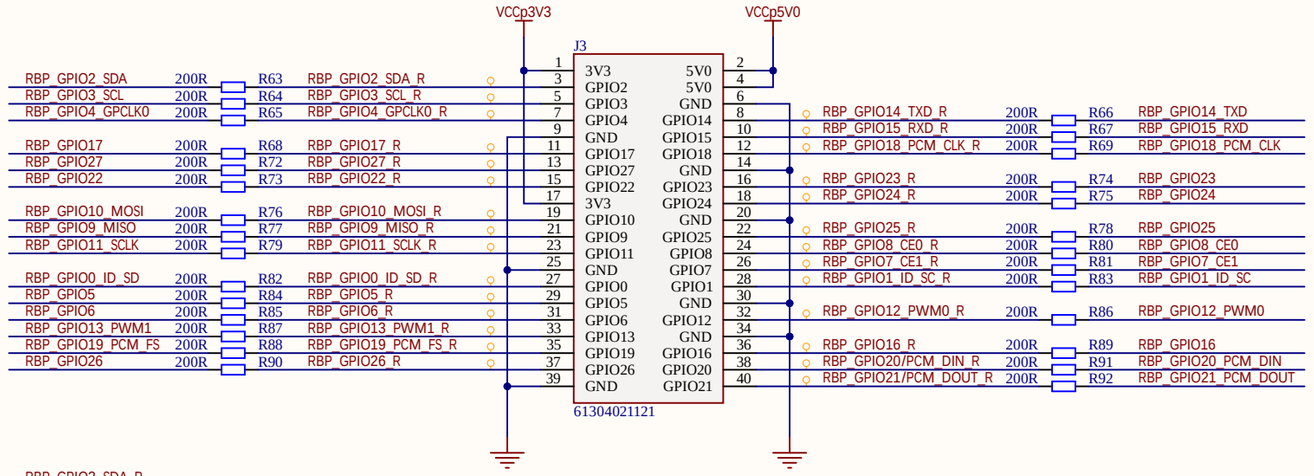


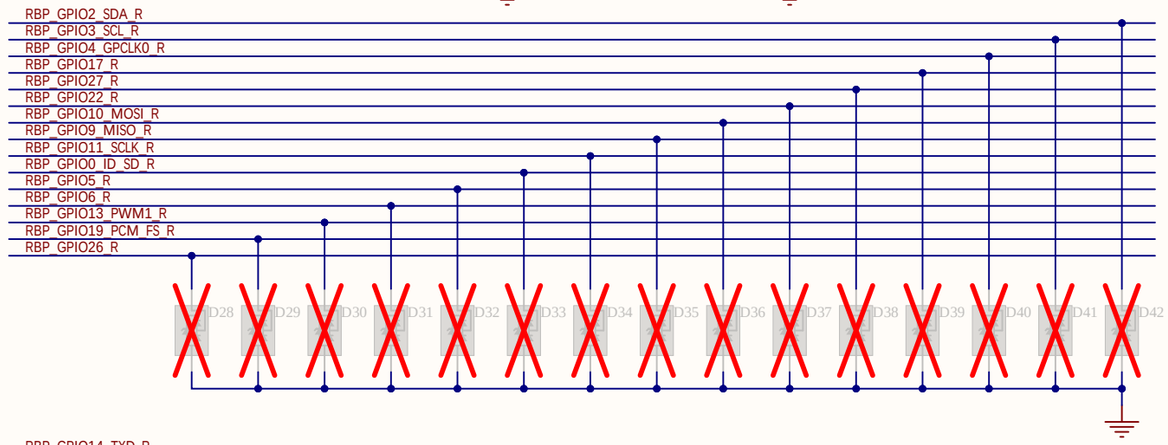


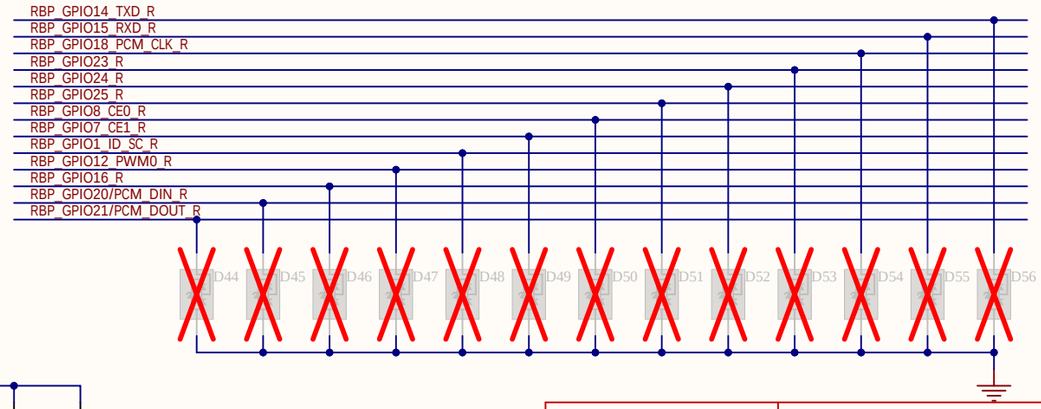




RASPBERRY Pi HAT EXTENSION

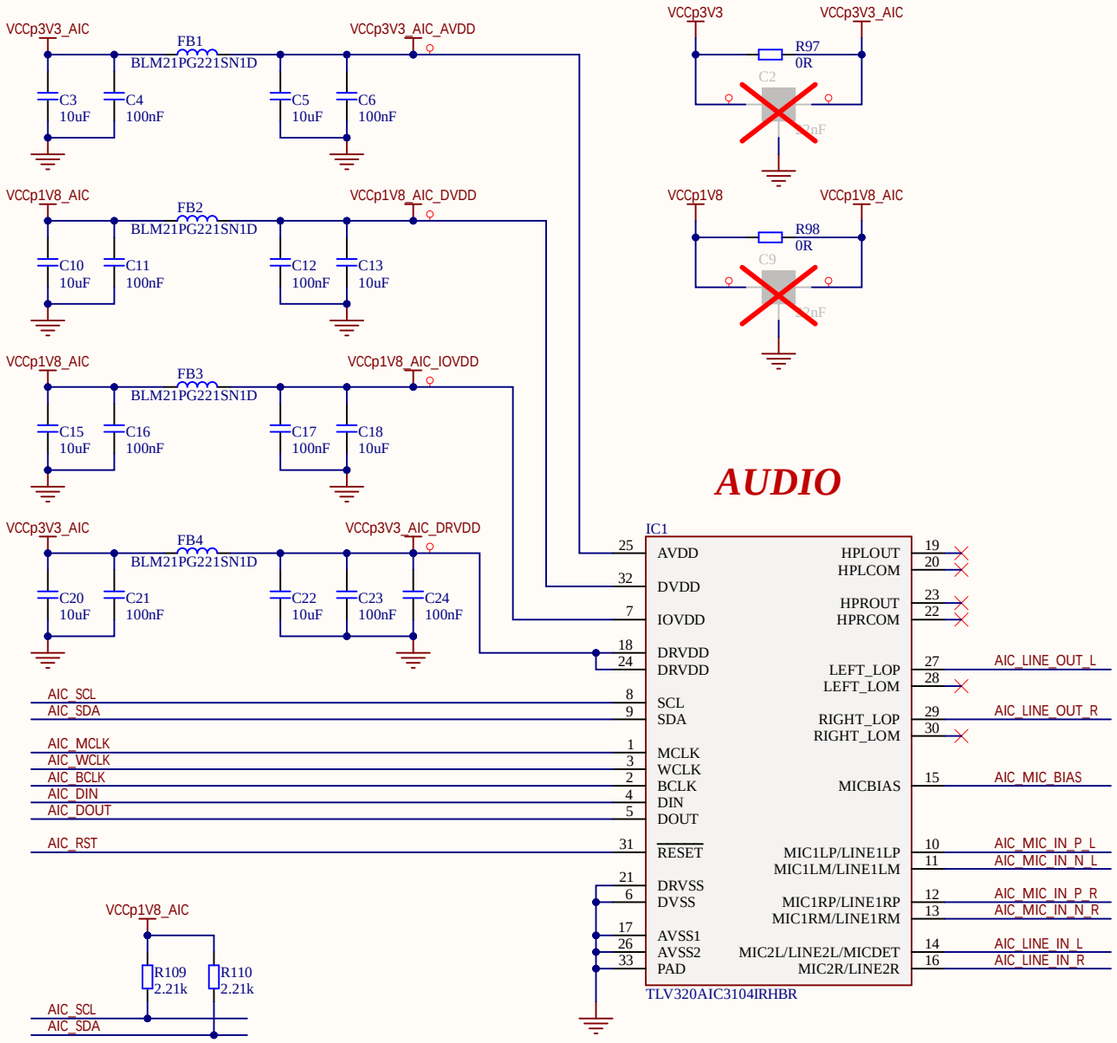


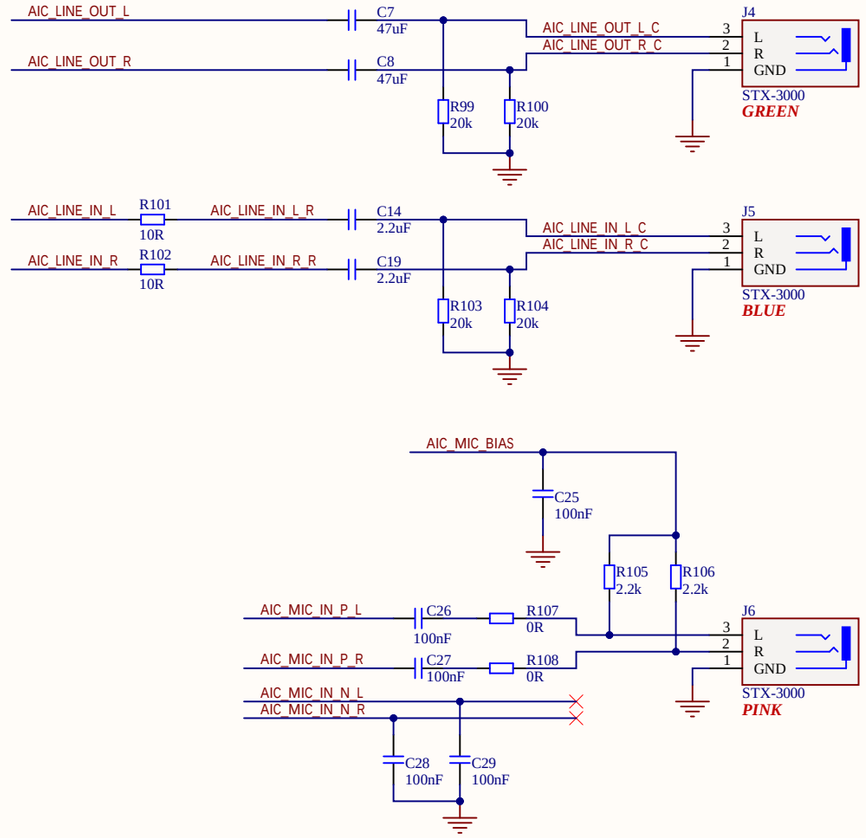




REAL DIGITAL		© Real Digital 2024	
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [06] - CAMERA AND RPI.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 6 *of* 30	

AUDIO AND MIC

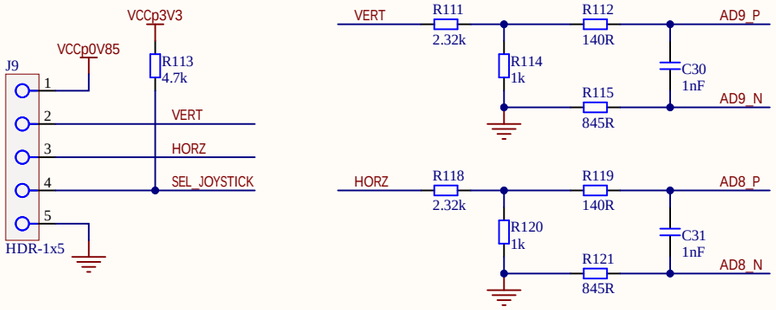




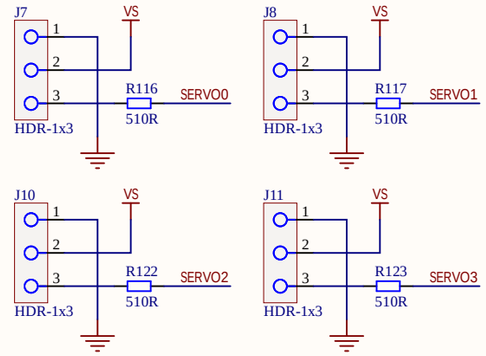
REAL DIGITAL		© Real Digital 2024	
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [07] - AUDIO AND MIC.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 7 *of* 30	

ANALOG AND SERVO

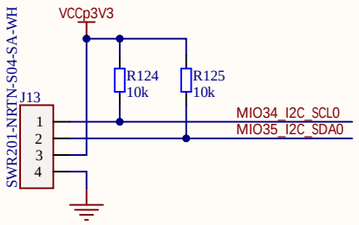
JOYSTICK

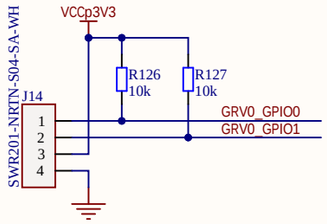


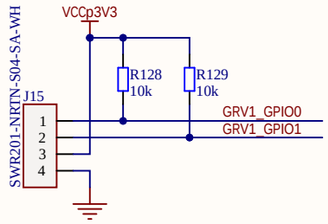
SERVO

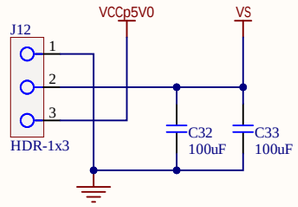


GROVE



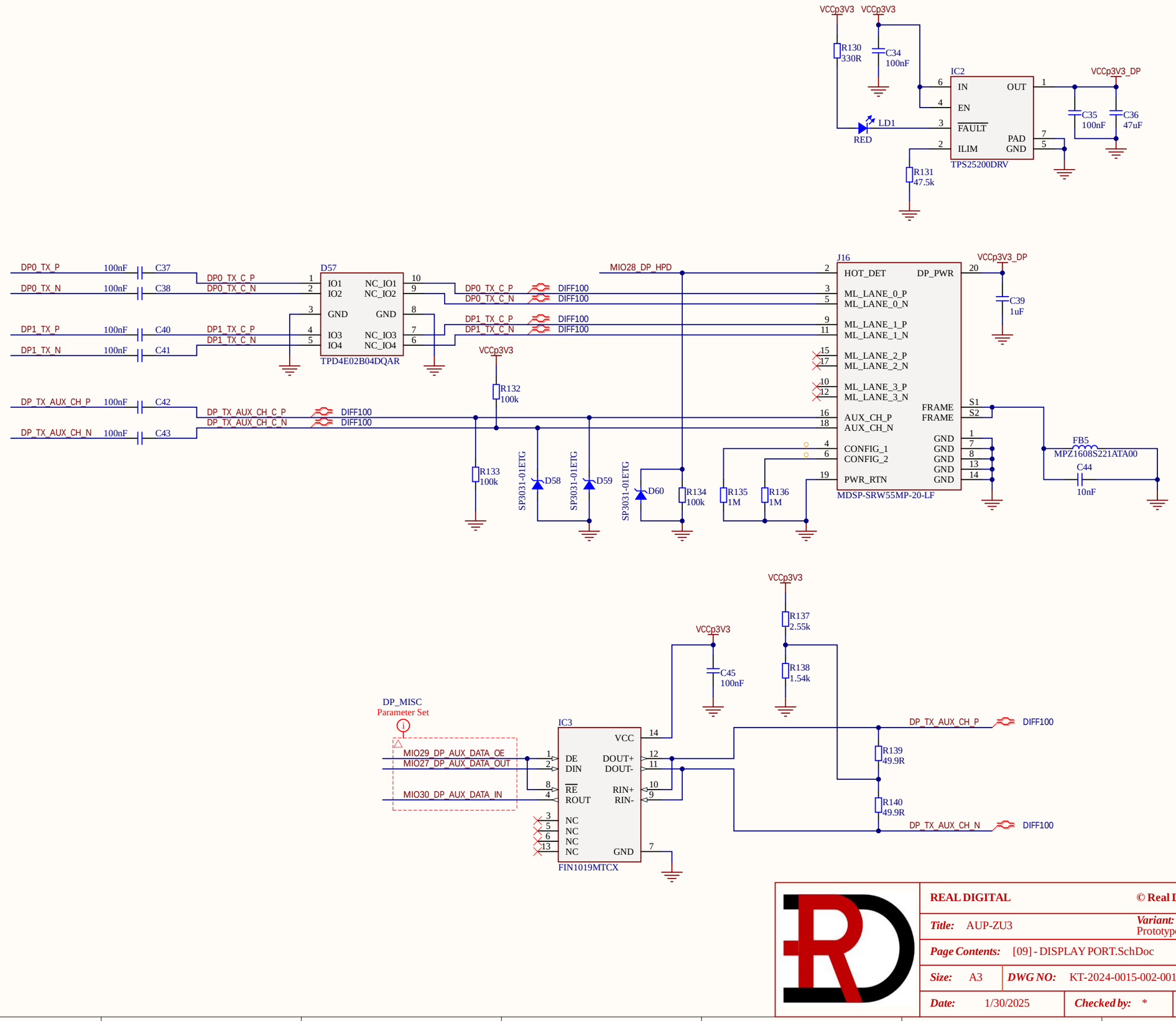






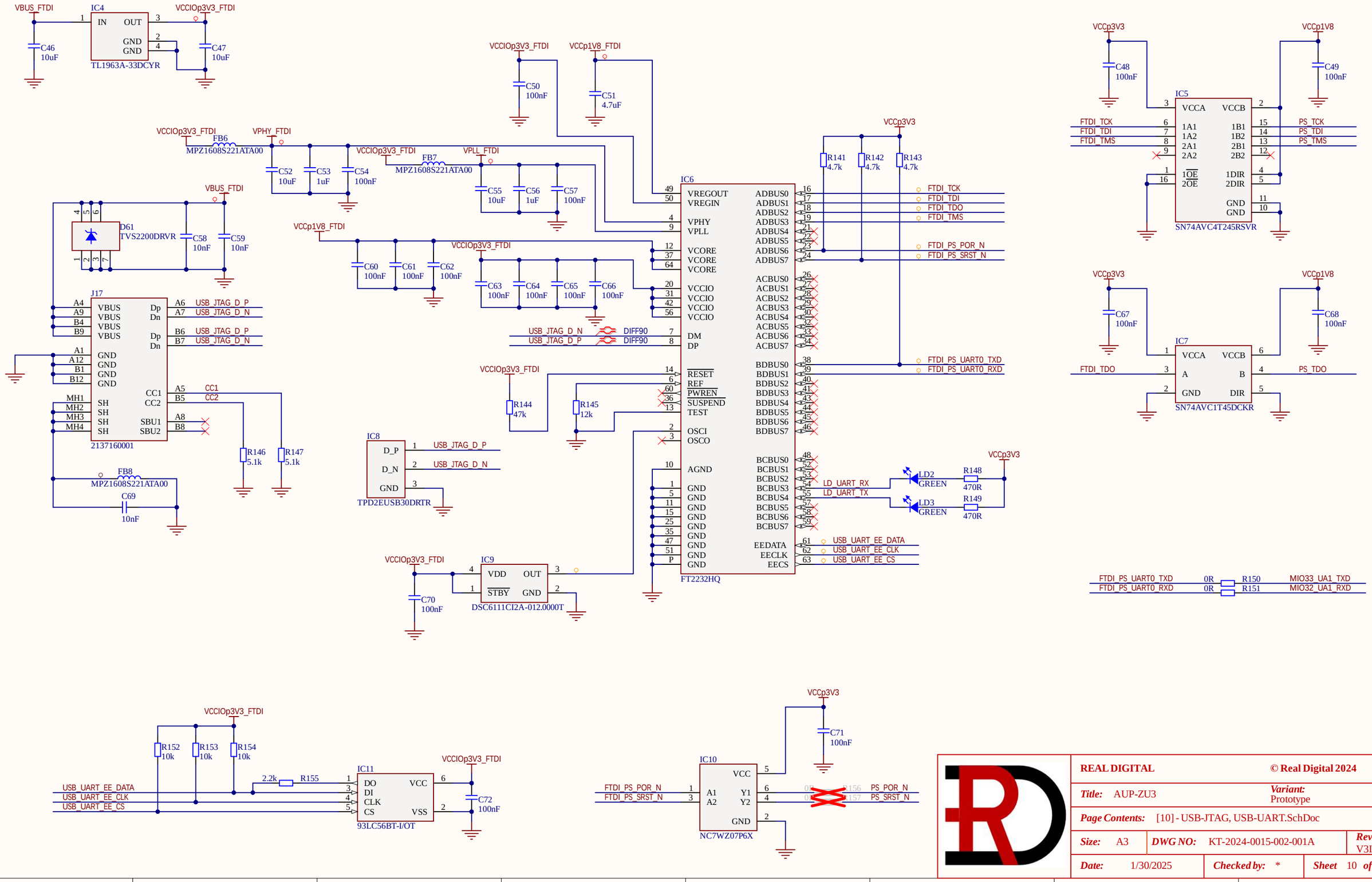
REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [08] - ANALOG AND SERVO.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 8 ***of*** 30	

DISPLAY PORT



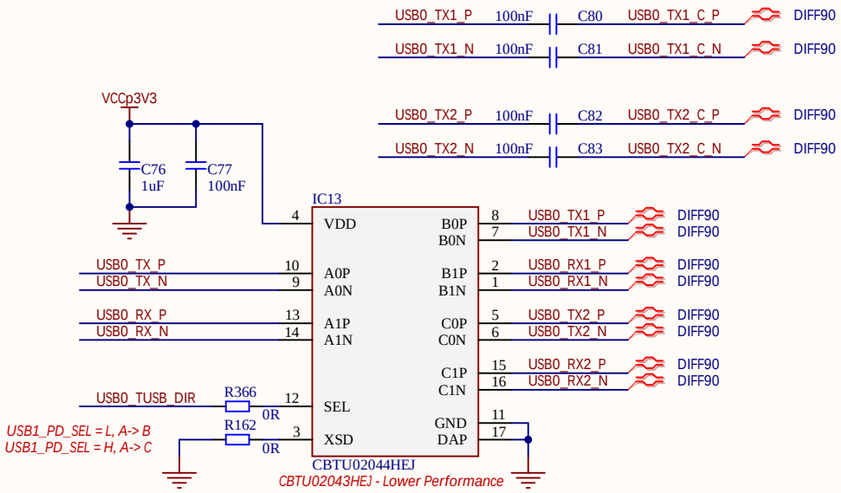
REAL DIGITAL		© Real Digital 2024	
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [09] - DISPLAY PORT.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 9 *of* 30	

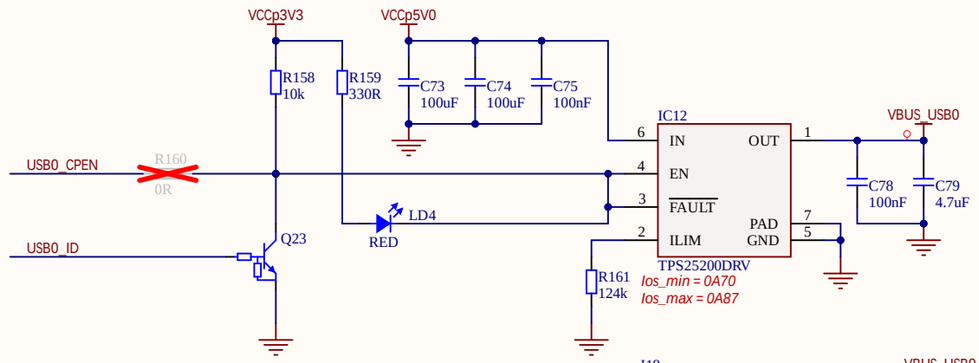
USB-JTAG, USB-UART

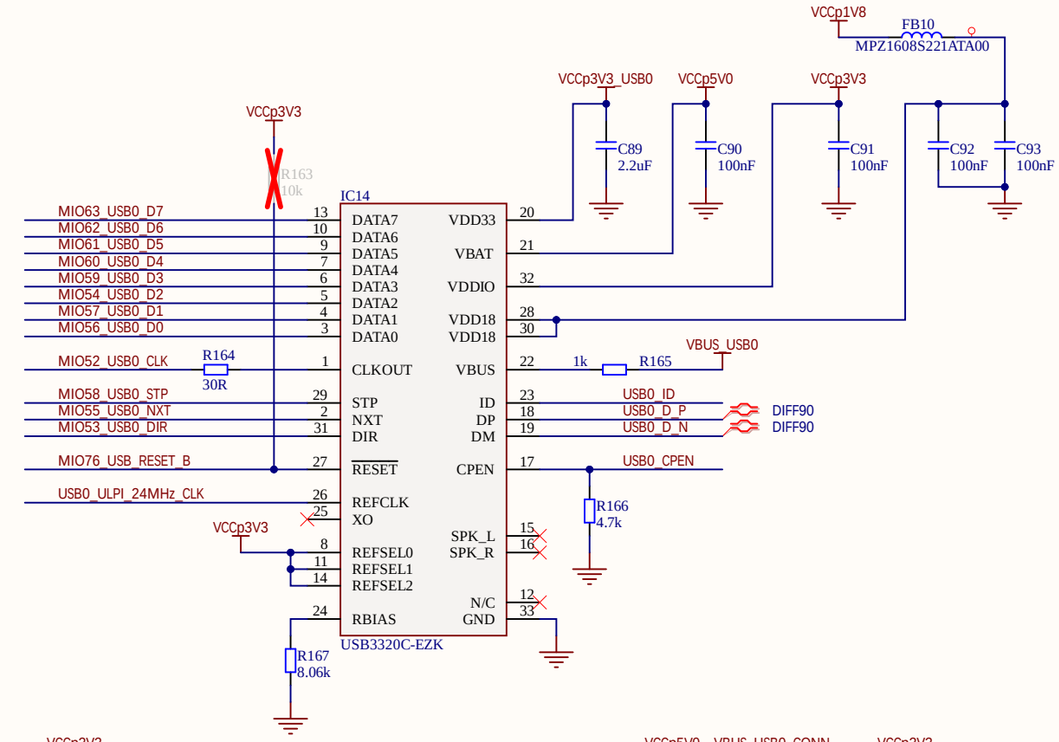


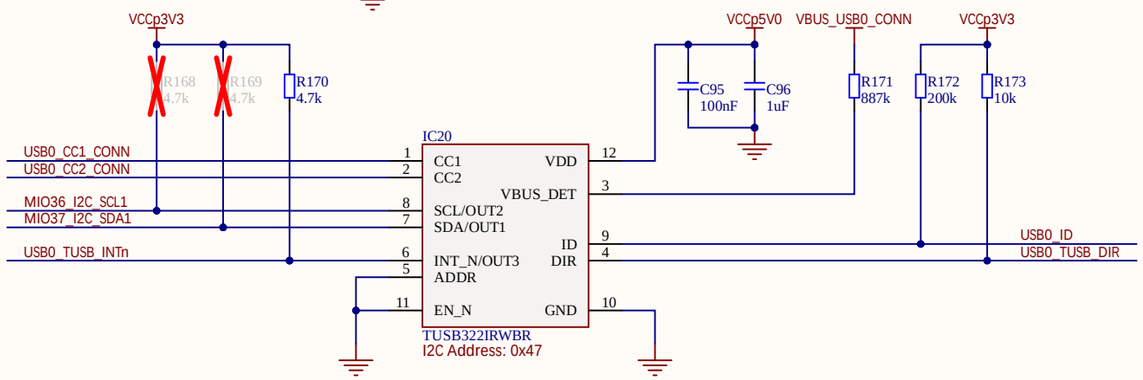
REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3			***Variant:*** Prototype
Page Contents: [10] - USB-JTAG, USB-UART.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 10 ***of*** 30	

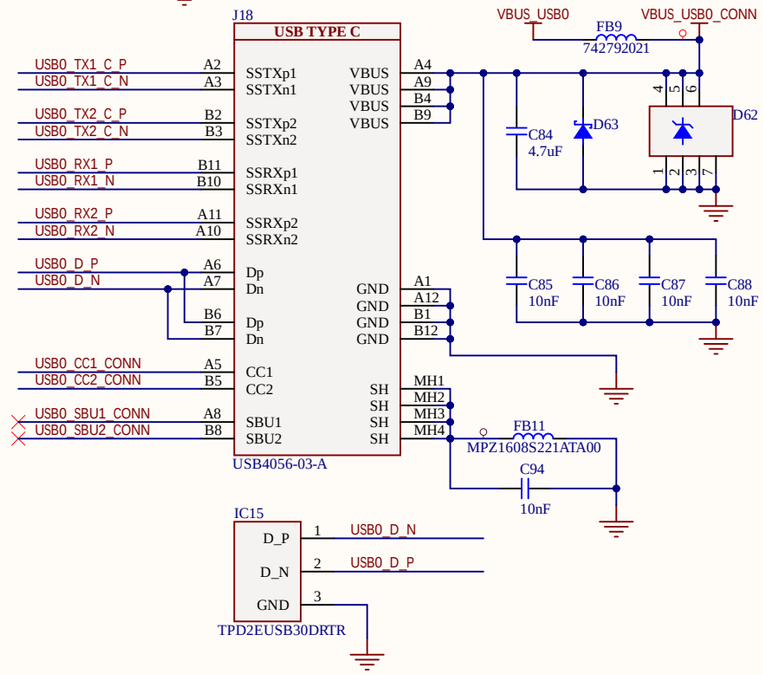
USB 3.0 DRP I

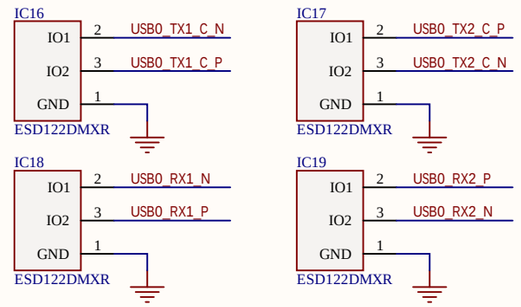






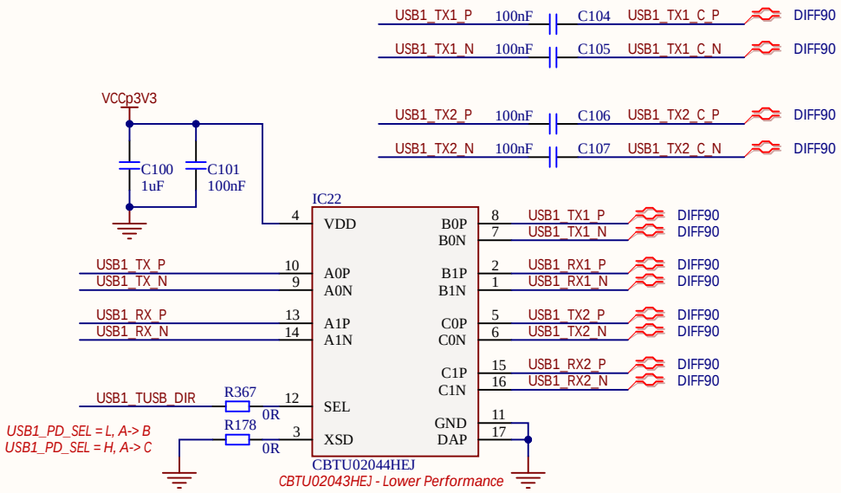


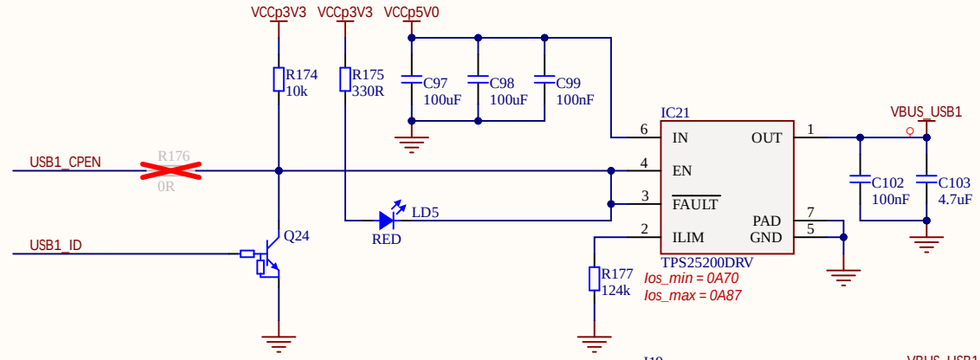


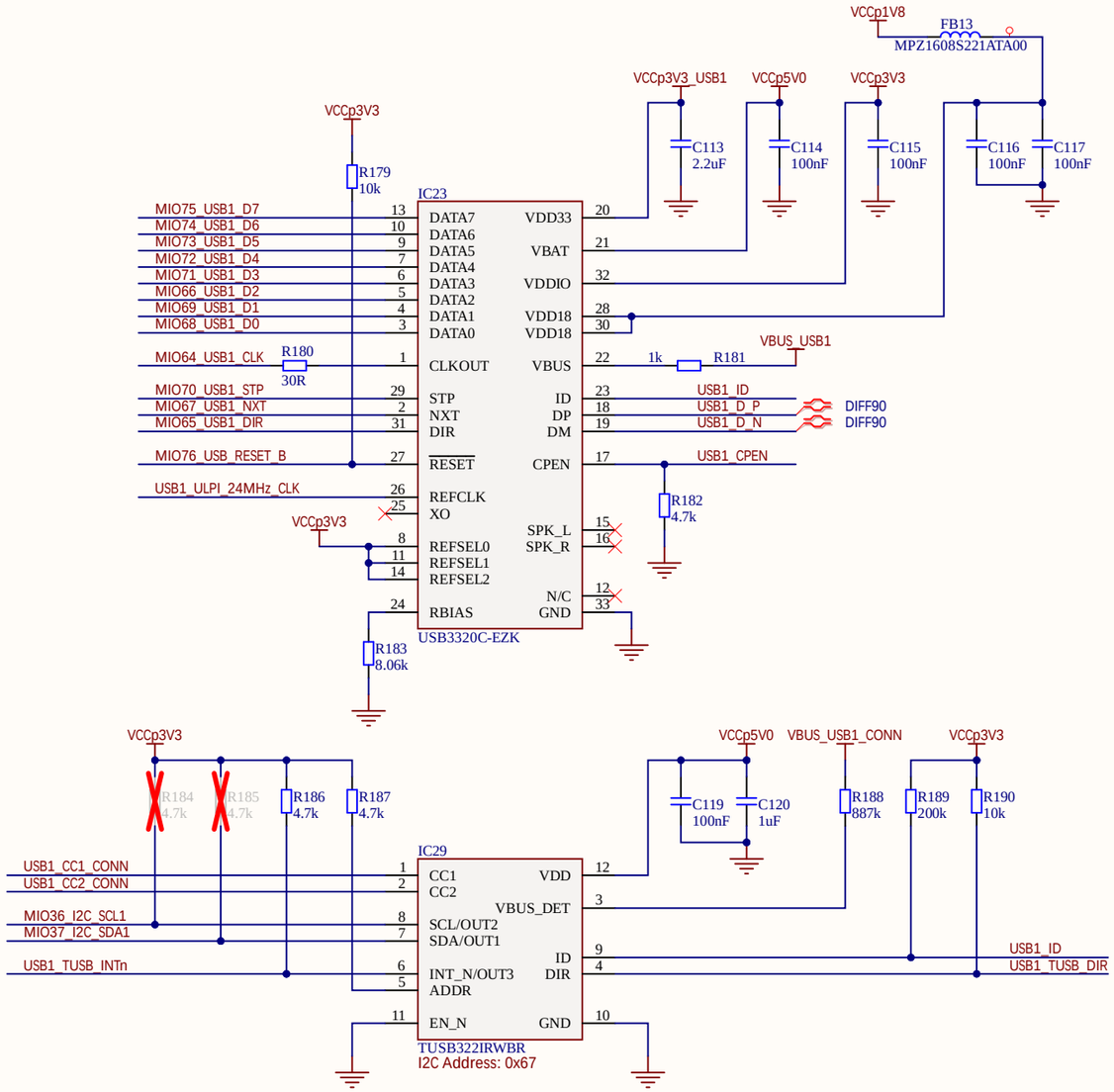


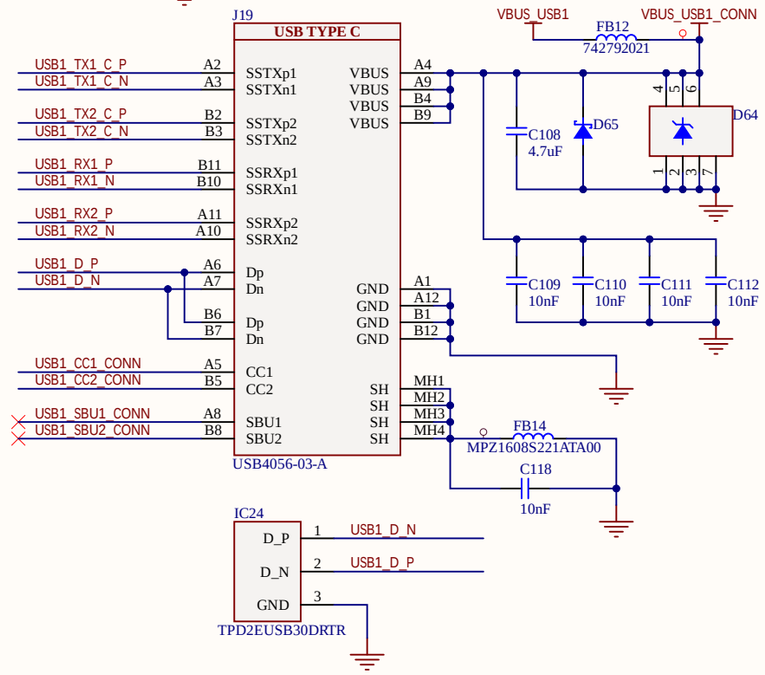
REAL DIGITAL		**© Real Digital 2024**	
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [11] - USB 3.0 DRP I.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 11 ***of*** 30	

USB 3.0 DRP II



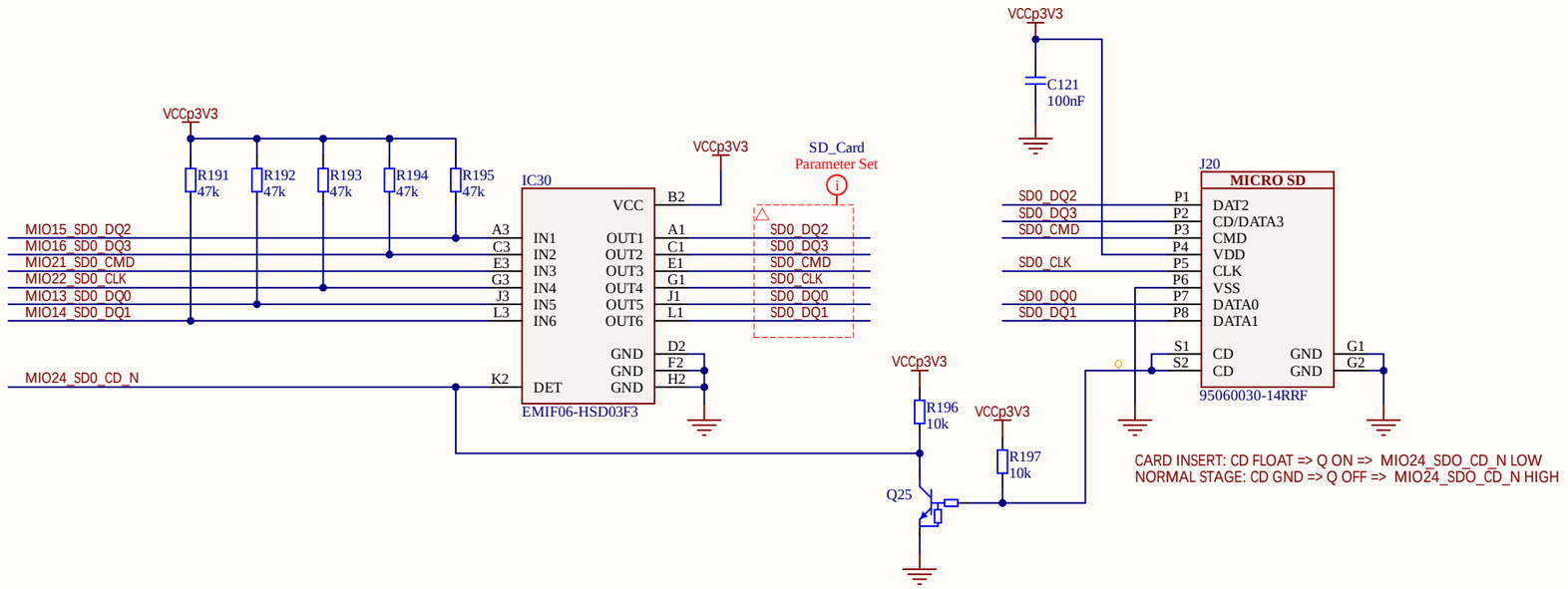






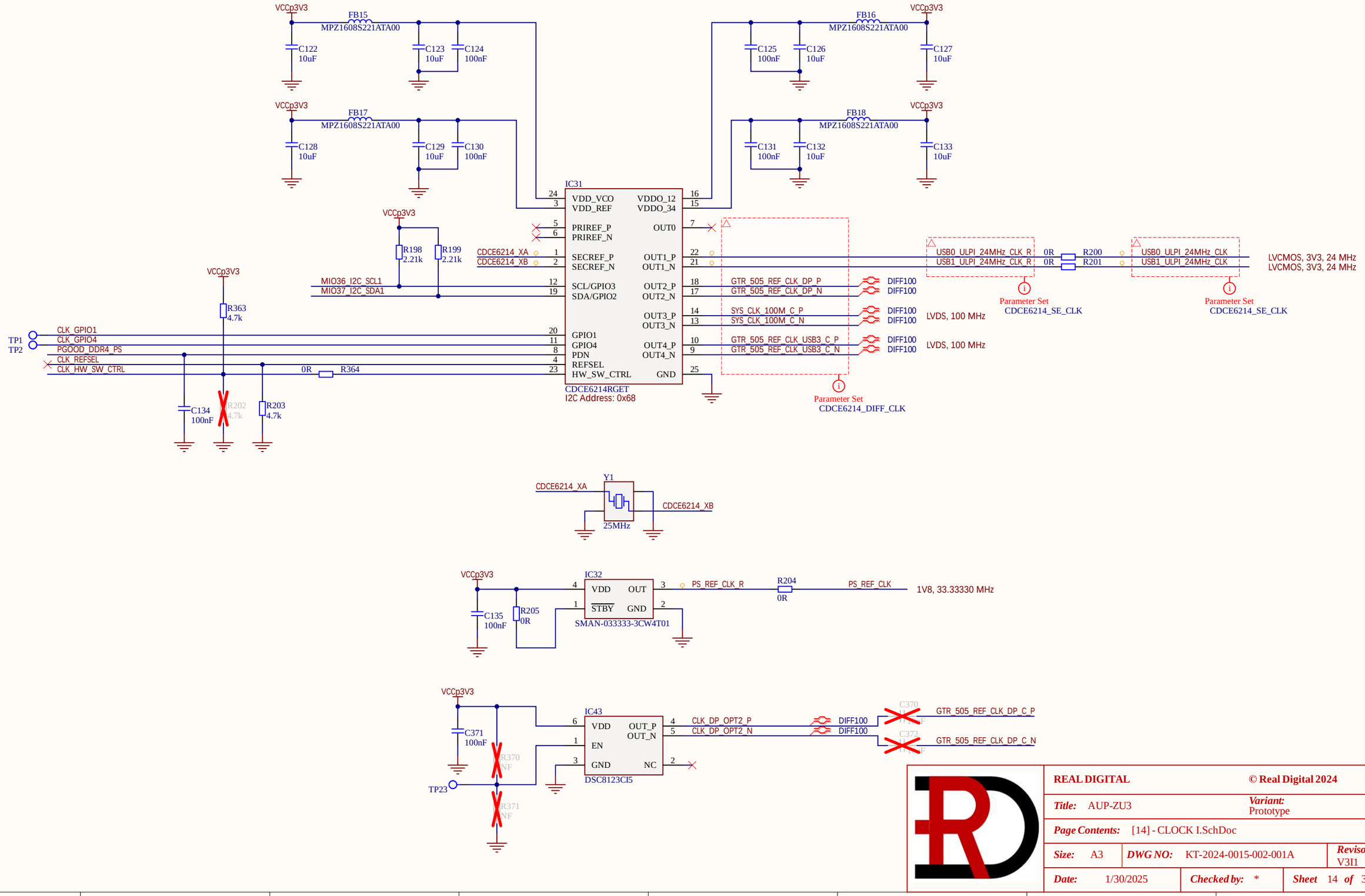
REAL DIGITAL			© Real Digital 2024
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [12] - USB 3.0 DRP II.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 12 *of* 30	

SD CARD



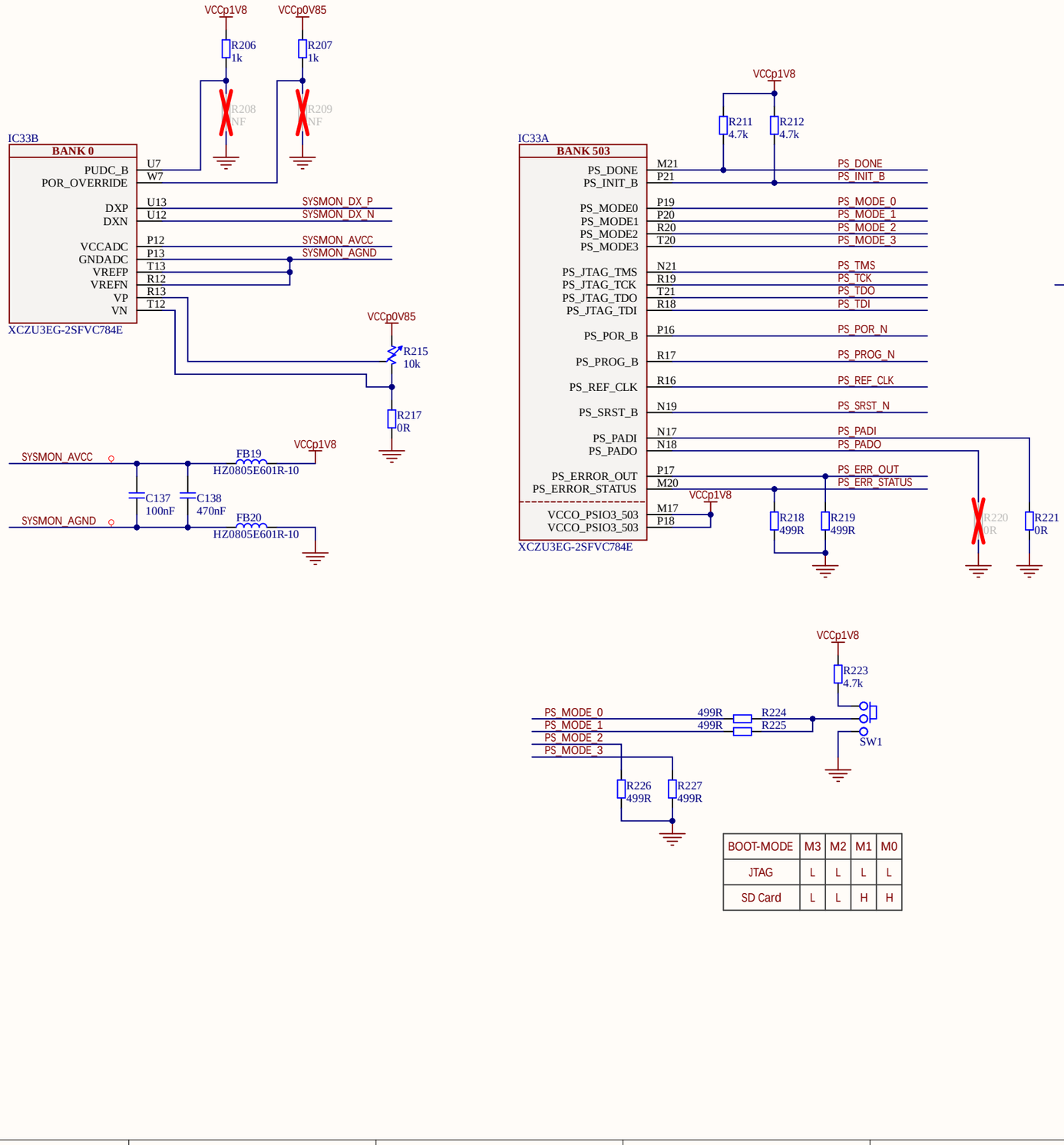
REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3			***Variant:*** Prototype
Page Contents: [13] - SD CARD.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025		***Checked by:*** *	***Sheet*** 13 ***of*** 30

CLOCK I:



REAL DIGITAL		**© Real Digital 2024**	
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [14] - CLOCK I.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 14 ***of*** 30	

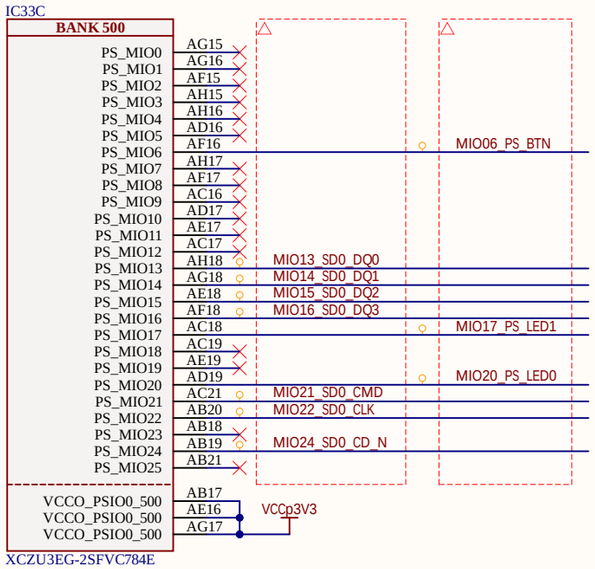
MPSoC CONFIG

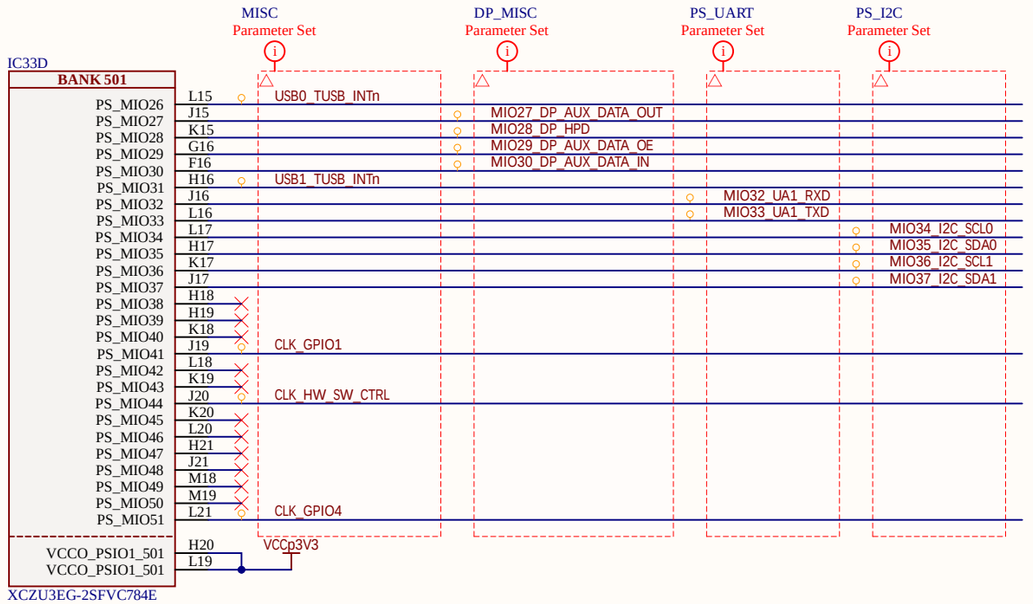


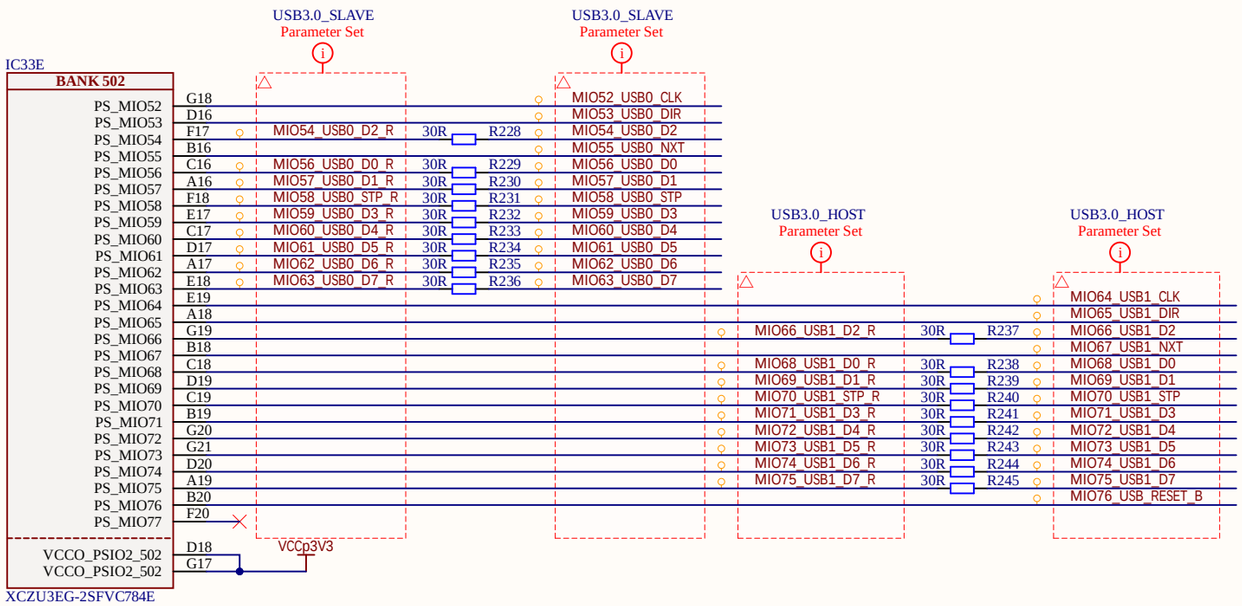
BOOT-MODE	M3	M2	M1	M0
JTAG	L	L	L	L
SD Card	L	L	H	H

REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [15] - MPSoC CONFIG.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 15 ***of*** 30	

PS: BANKS 500-502

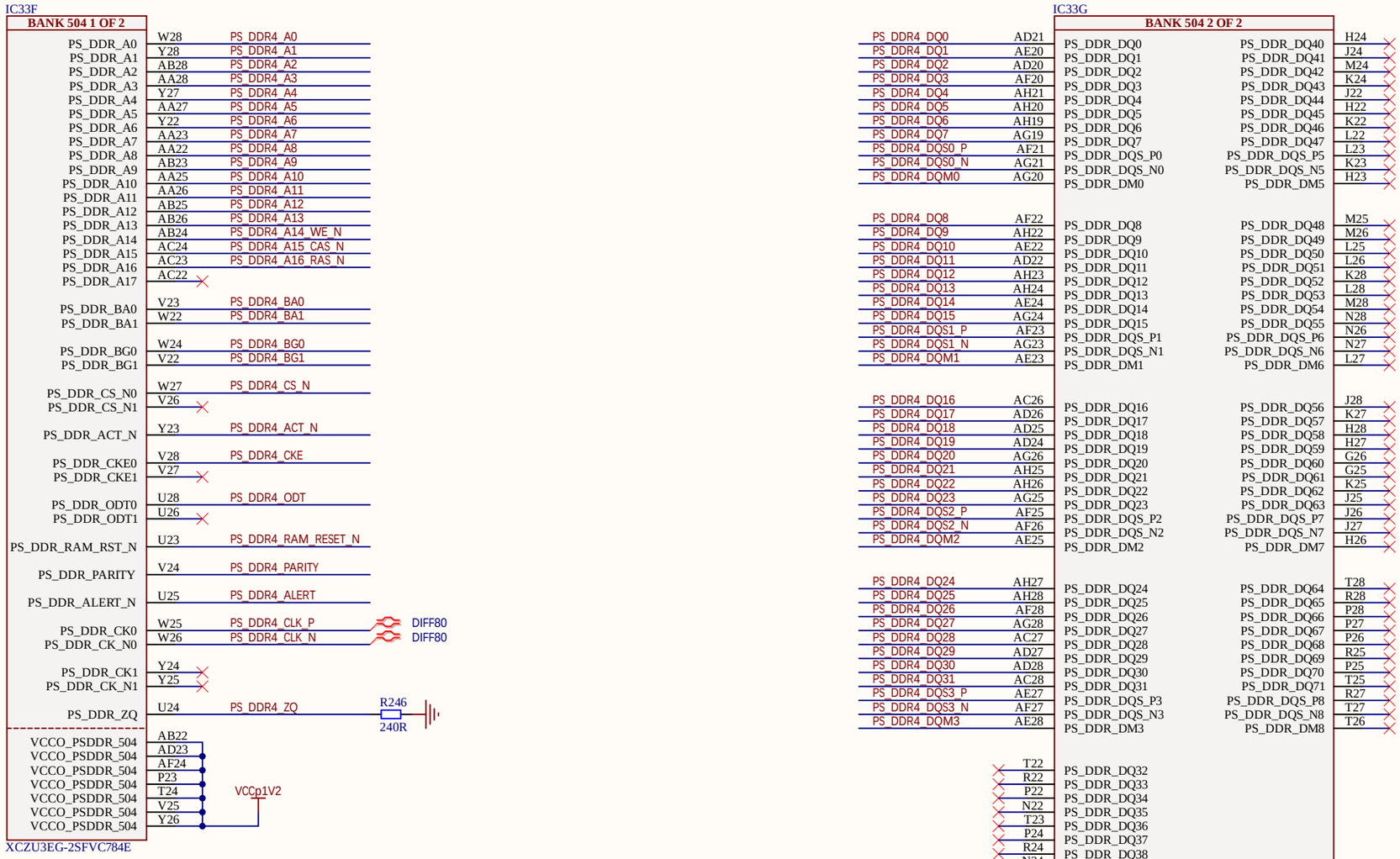






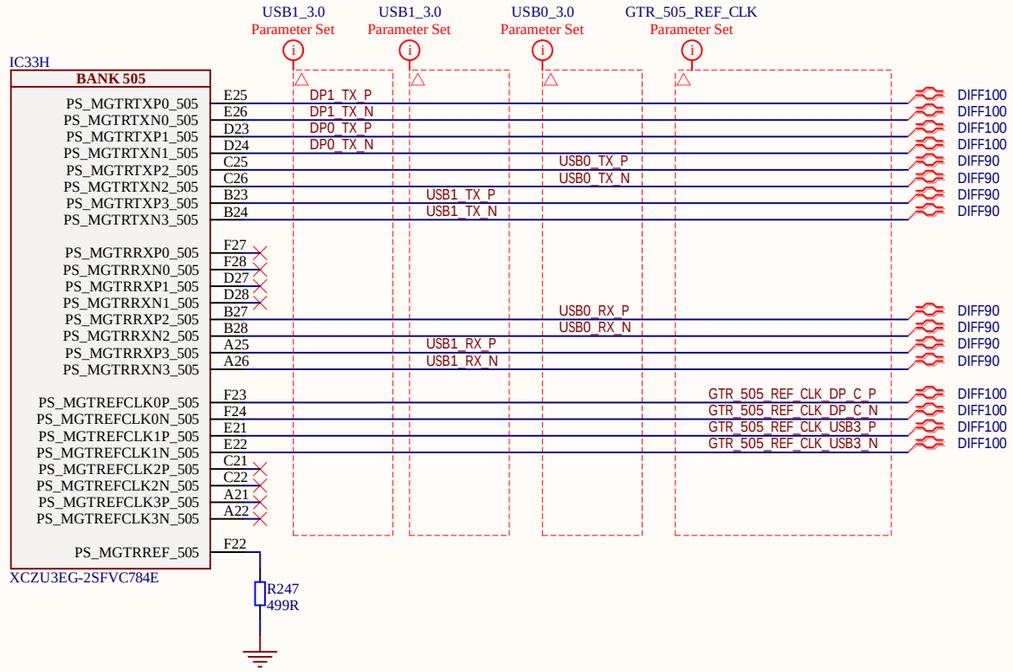
REAL DIGITAL		© Real Digital 2024	
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [16] - PS BANKS 500-502.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 16 *of* 30	

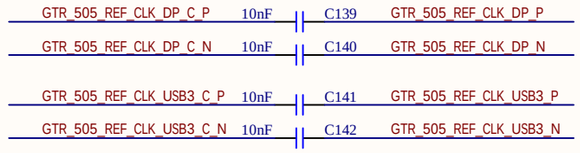
PS: BANK 504



Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [17] - PS BANK 504.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 17 ***of*** 30	

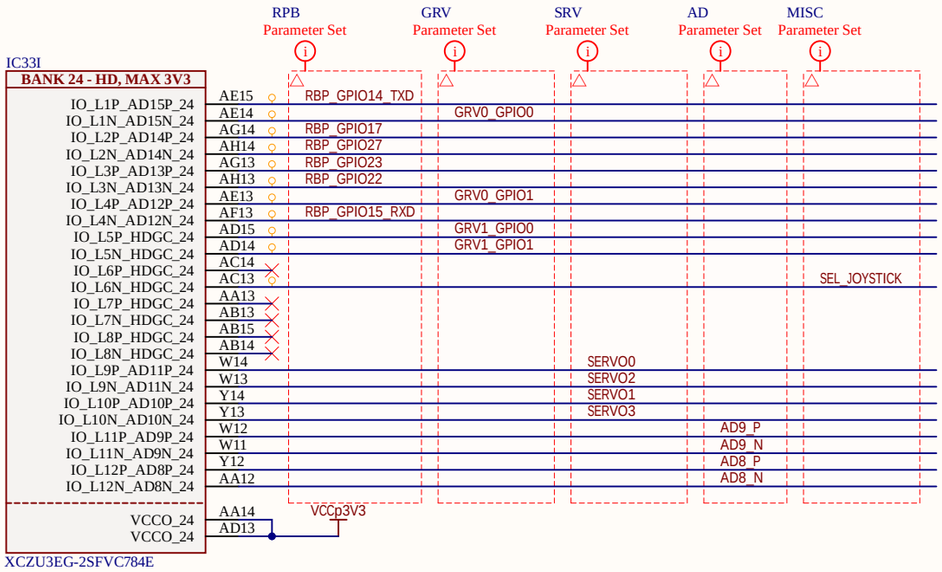
PS: MGT

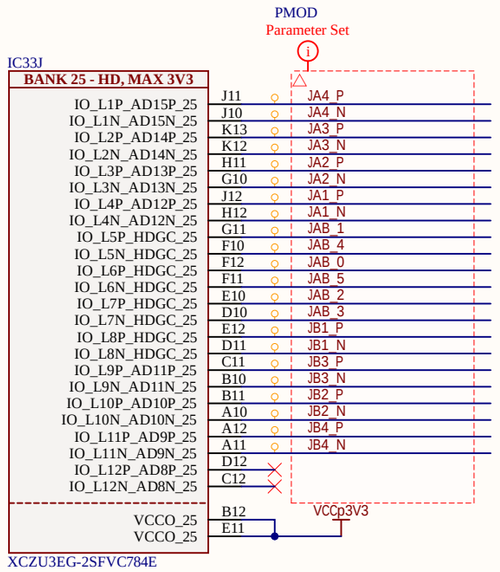


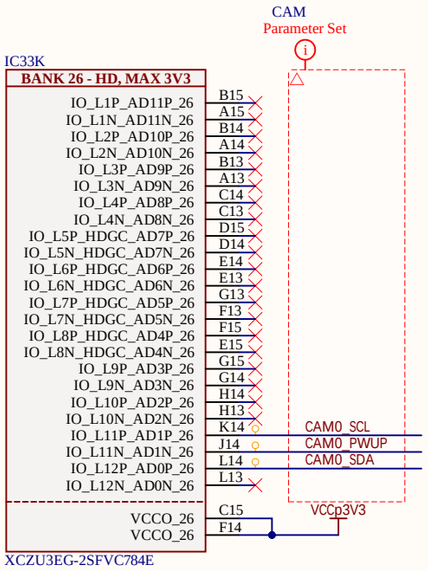


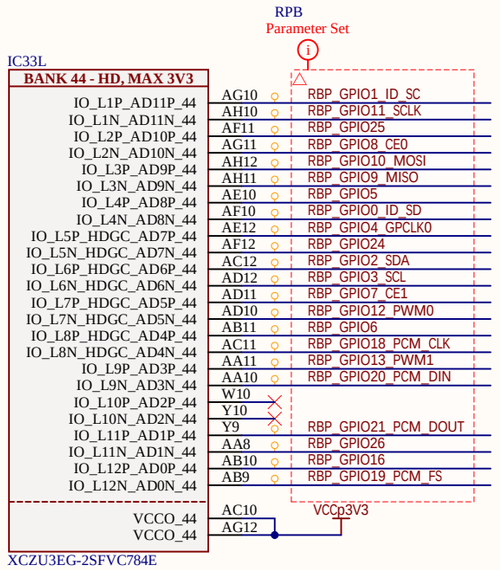
REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [18] - PS MGT.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 18 ***of*** 30	

PL: BANKS 64-66



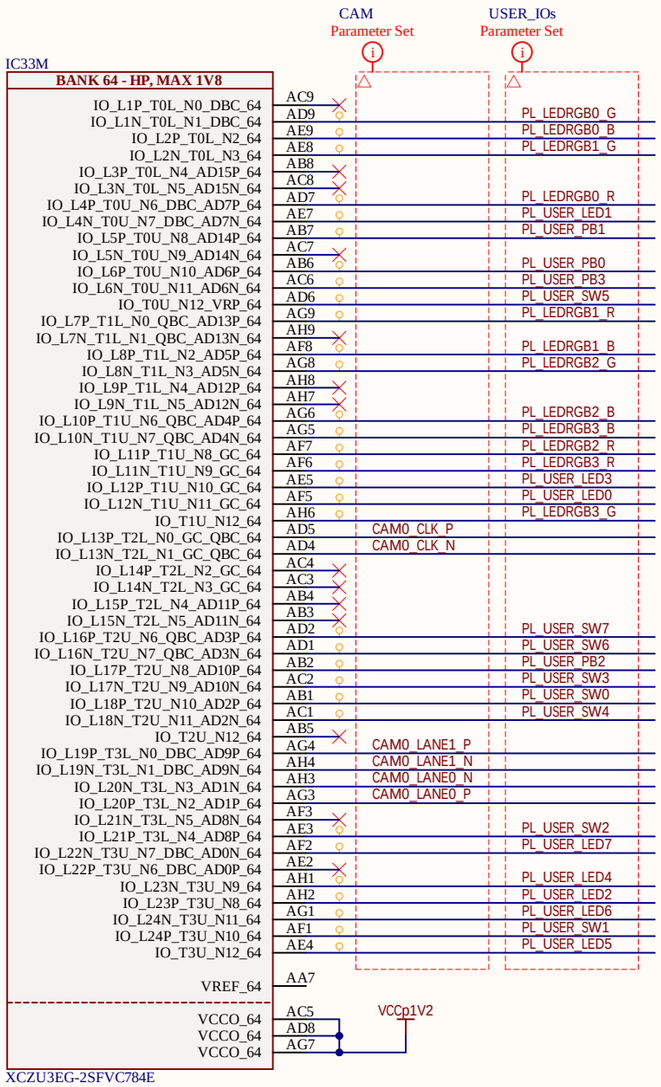


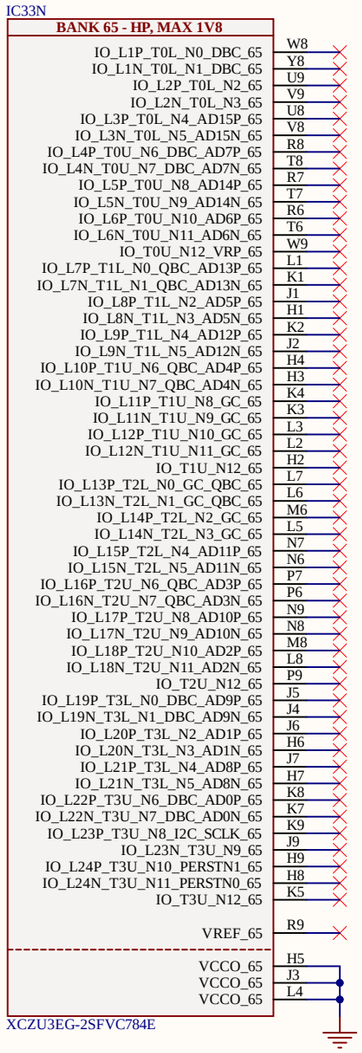


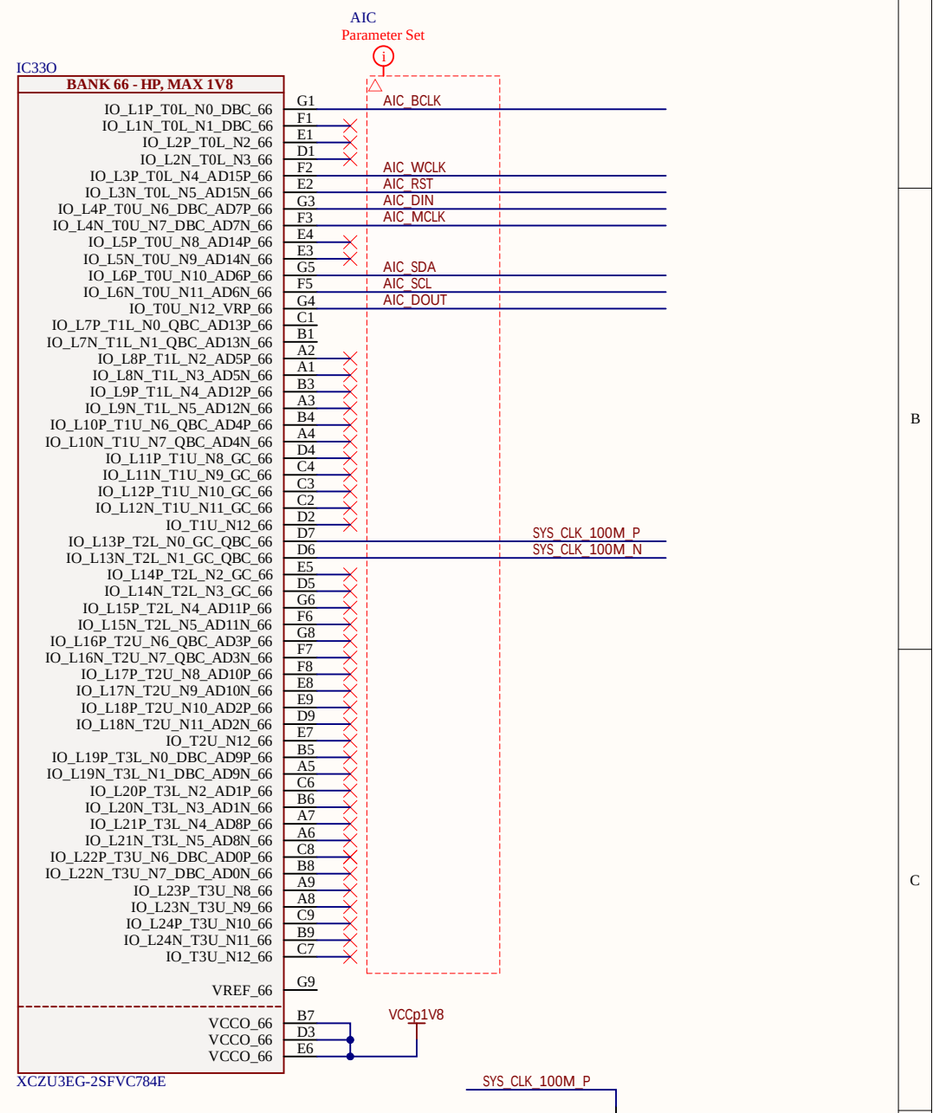


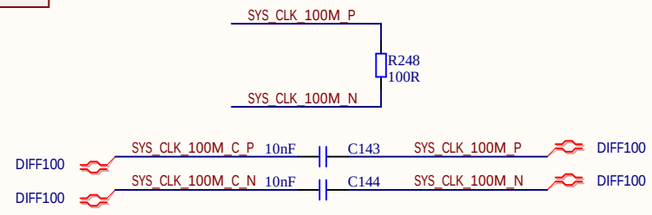
REAL DIGITAL		**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype
Page Contents: [19] - PL BANKS 43-46.SchDoc		
Size: A3	***DWG NO:*** KT-2024-0015-002-001A	***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 19 ***of*** 30

PL: BANKS 67-69



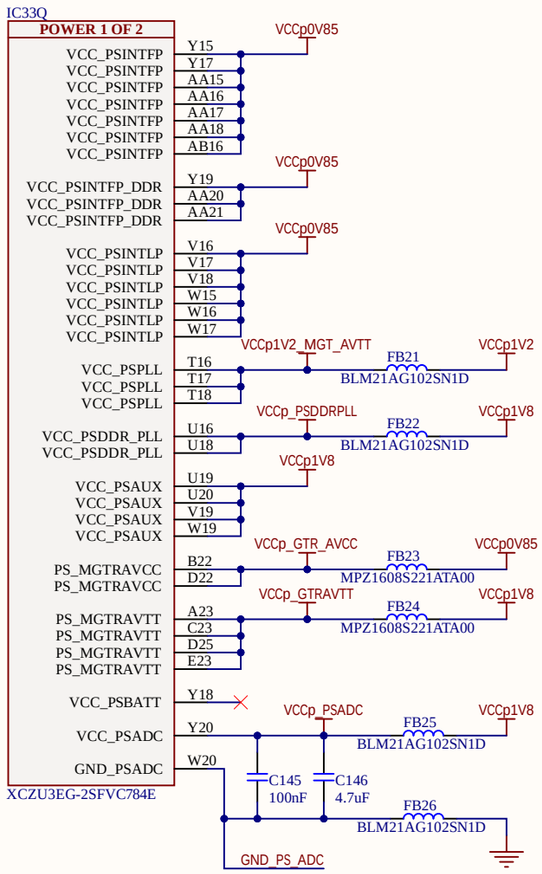


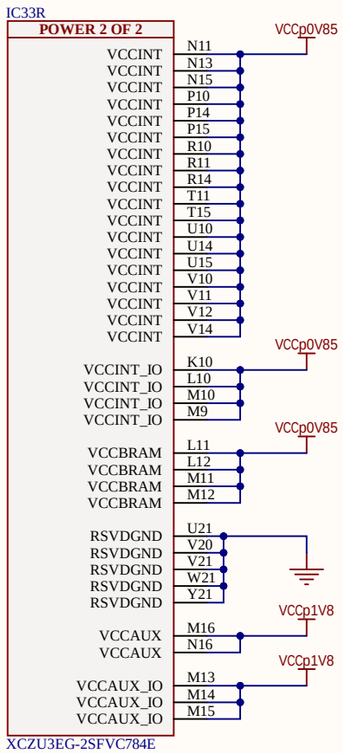


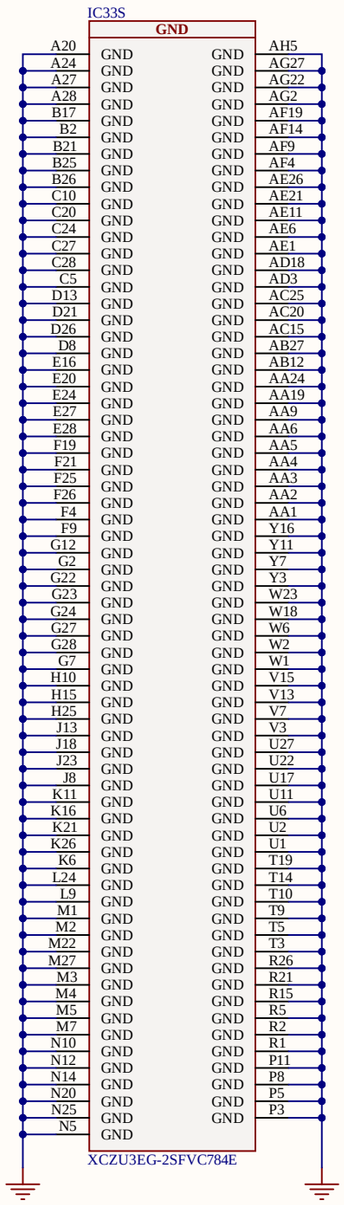


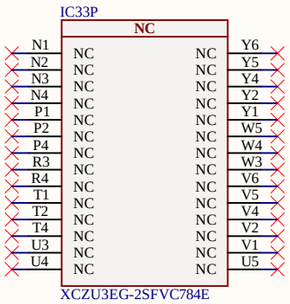
REAL DIGITAL		© Real Digital 2024	
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [20] - PL BANKS 64-66.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 20 *of* 30	

MPSoC PWR AND GND PINS





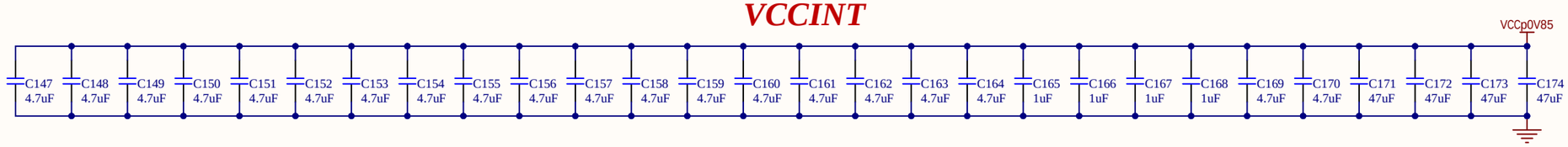




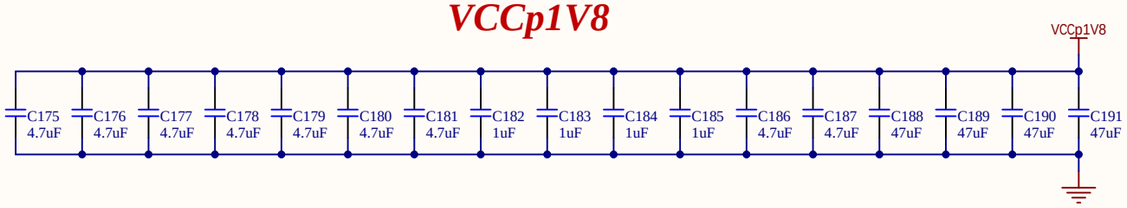
REAL DIGITAL		© Real Digital 2024	
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [21] - MPSoC PWR AND GND PINS.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 21 *of* 30	

DECOUPLING

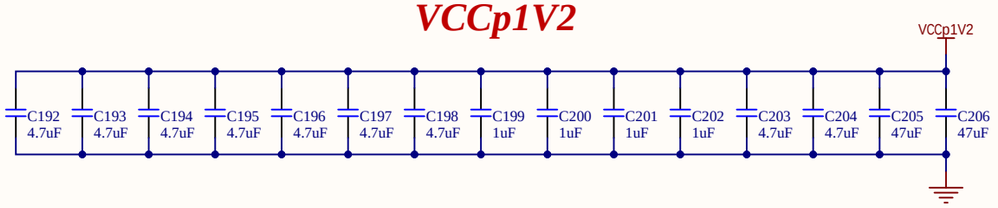
VCCINT



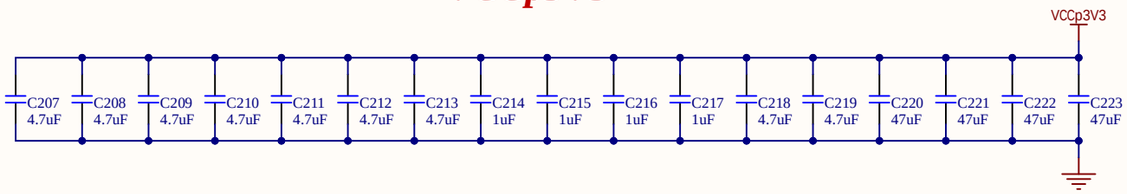
VCCp1V8



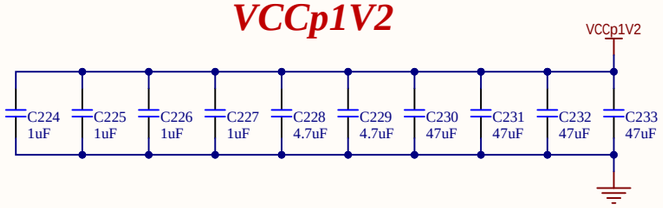
VCCp1V2



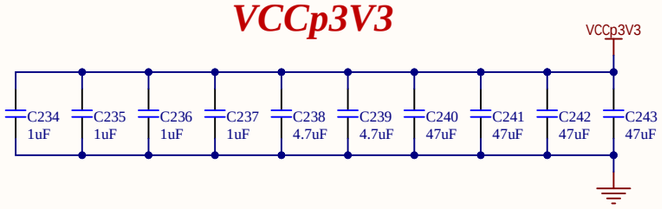
VCCp3V3



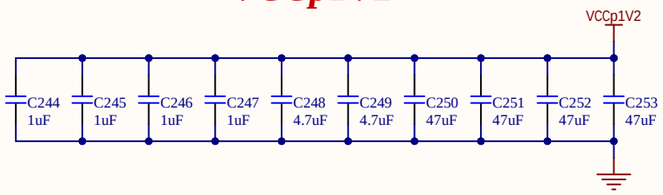
VCCp1V2



VCCp3V3

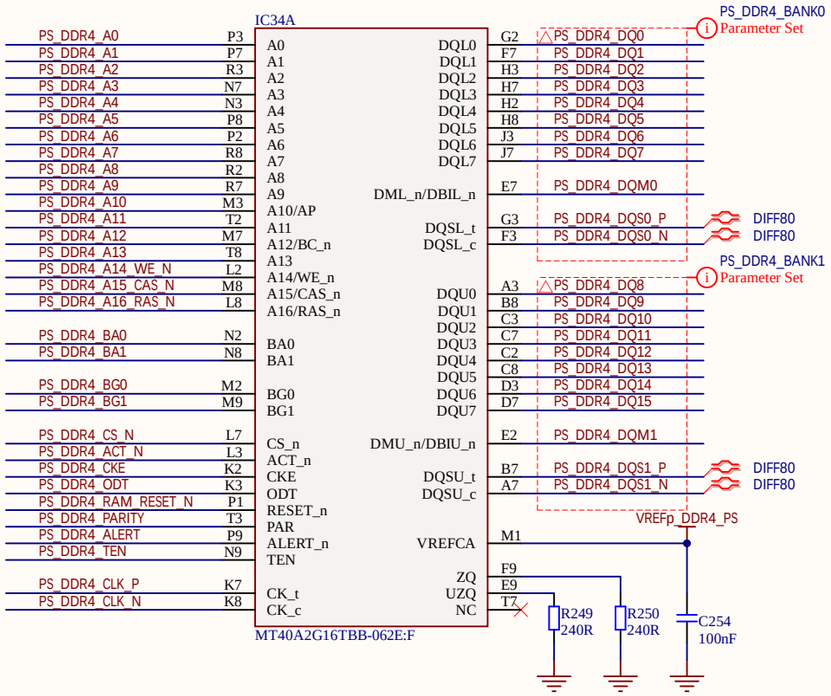


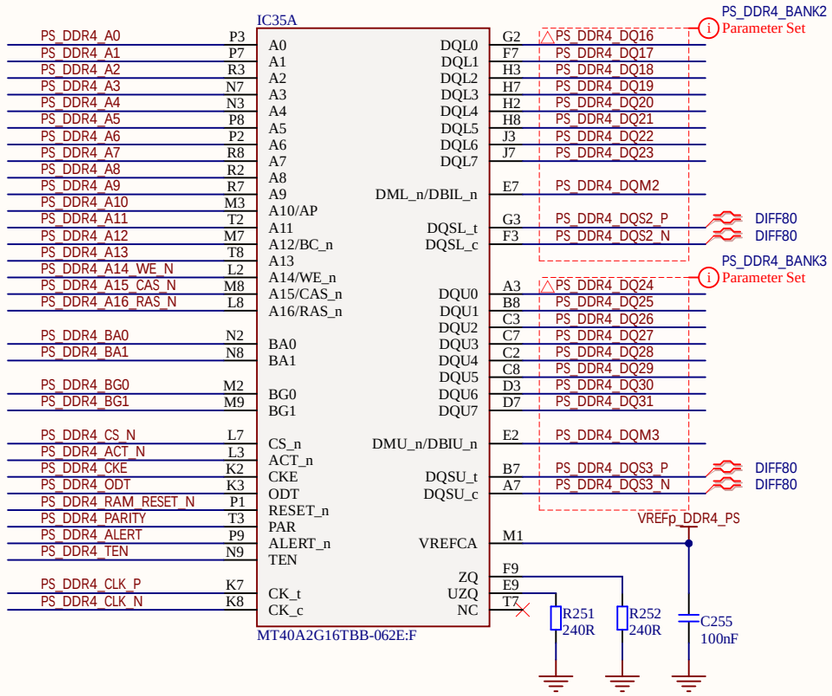
VCCp1V2



REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [22] - MPSoC DECOUPLING.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 22 ***of*** 30	

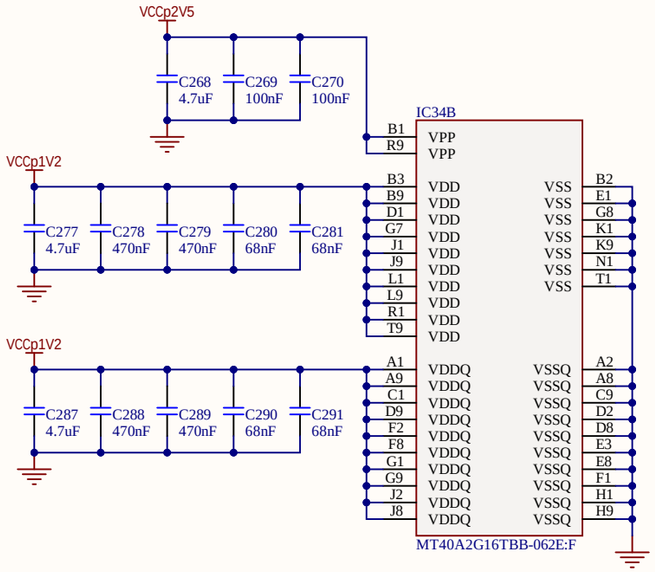
DDR4 MEMORY PS I

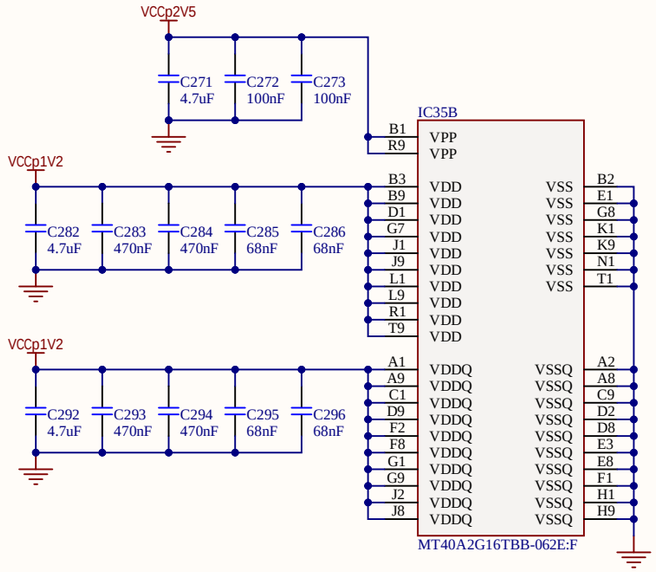


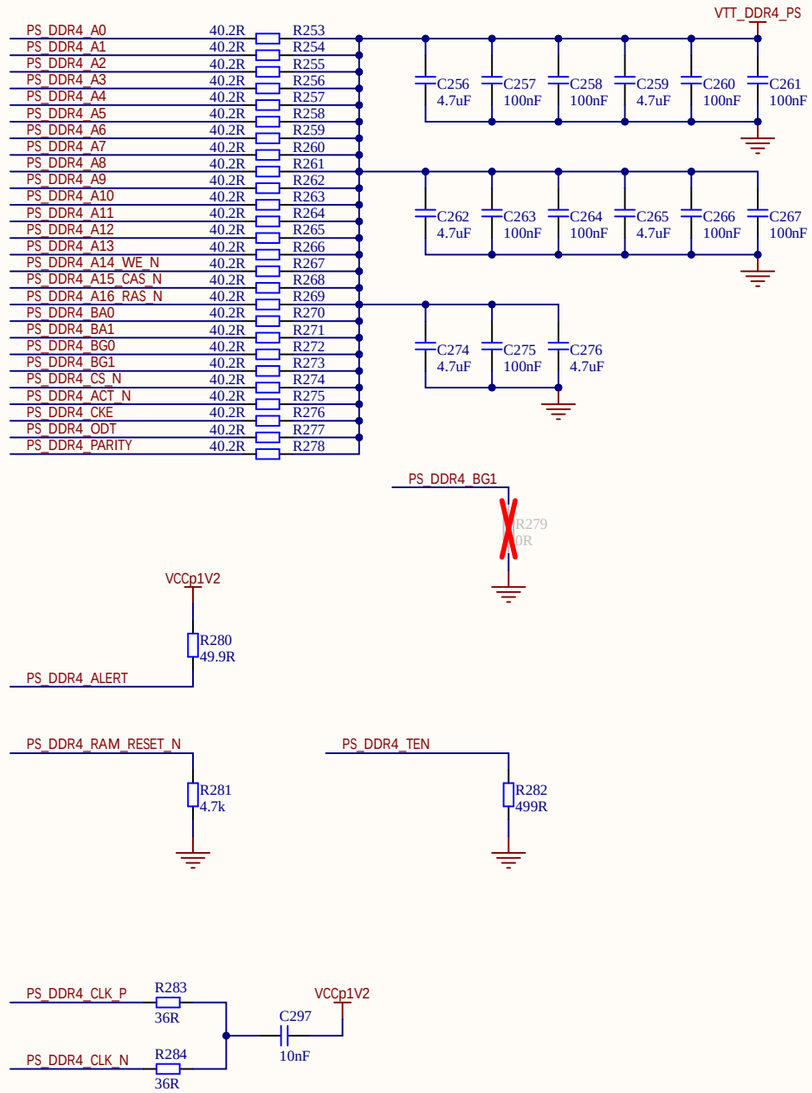


REAL DIGITAL			© Real Digital 2024
Title: AUP-ZU3		*Variant:* Prototype	
Page Contents: [23] - DDR4 MEMORY PS I.SchDoc			
Size: A3	*DWG NO:* KT-2024-0015-002-001A		*Revison:* V3I1
Date: 1/30/2025	*Checked by:* *	*Sheet* 23 *of* 30	

DDR4 MEMORY PS II

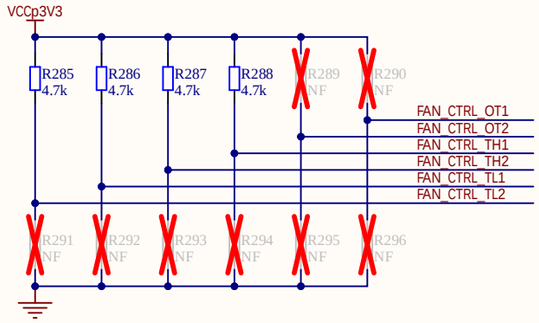


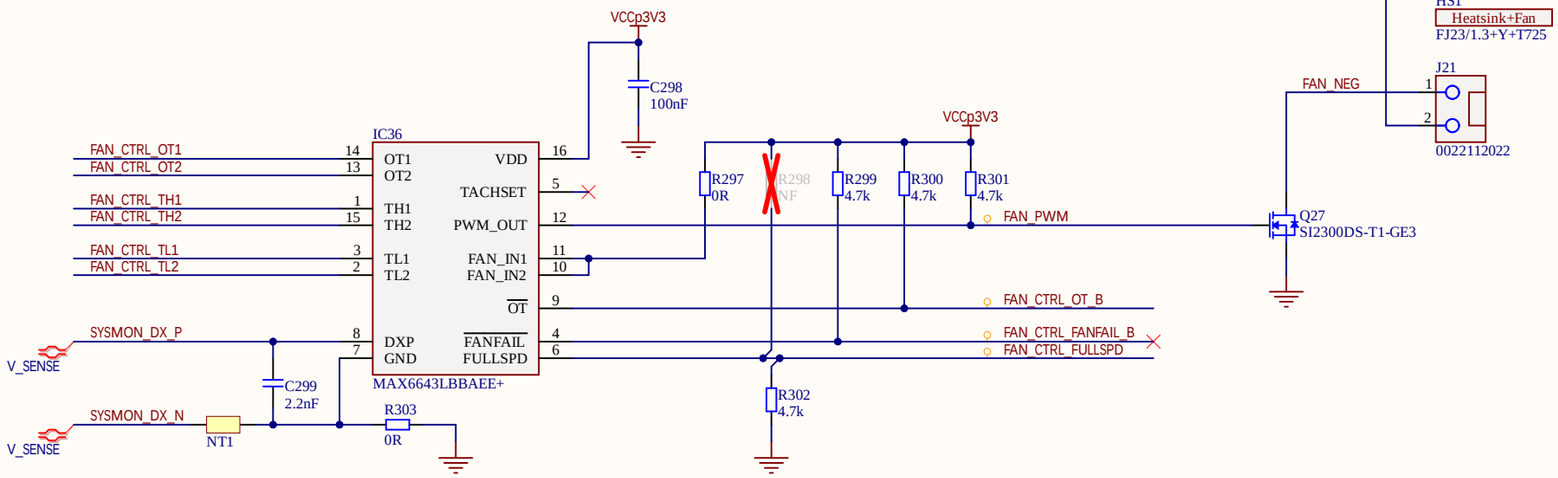


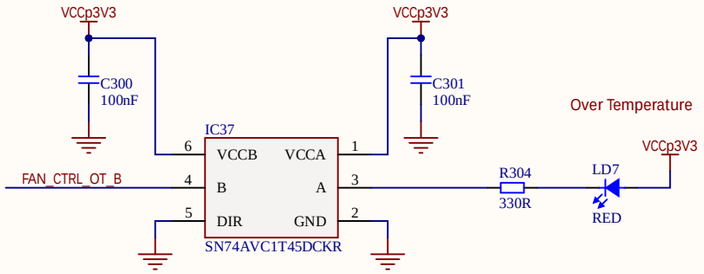


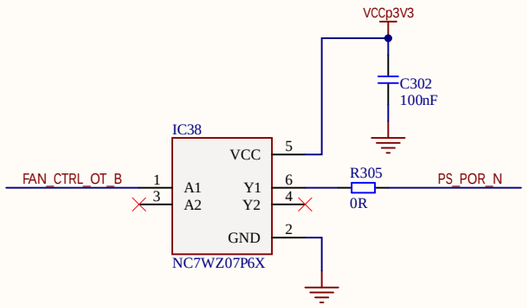
REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [24] - DDR4 MEMORY PS II.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 24 ***of*** 30	

FAN CONTROLLER



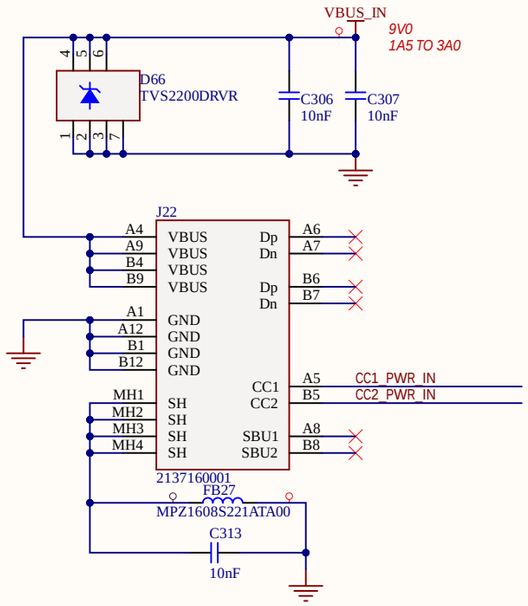


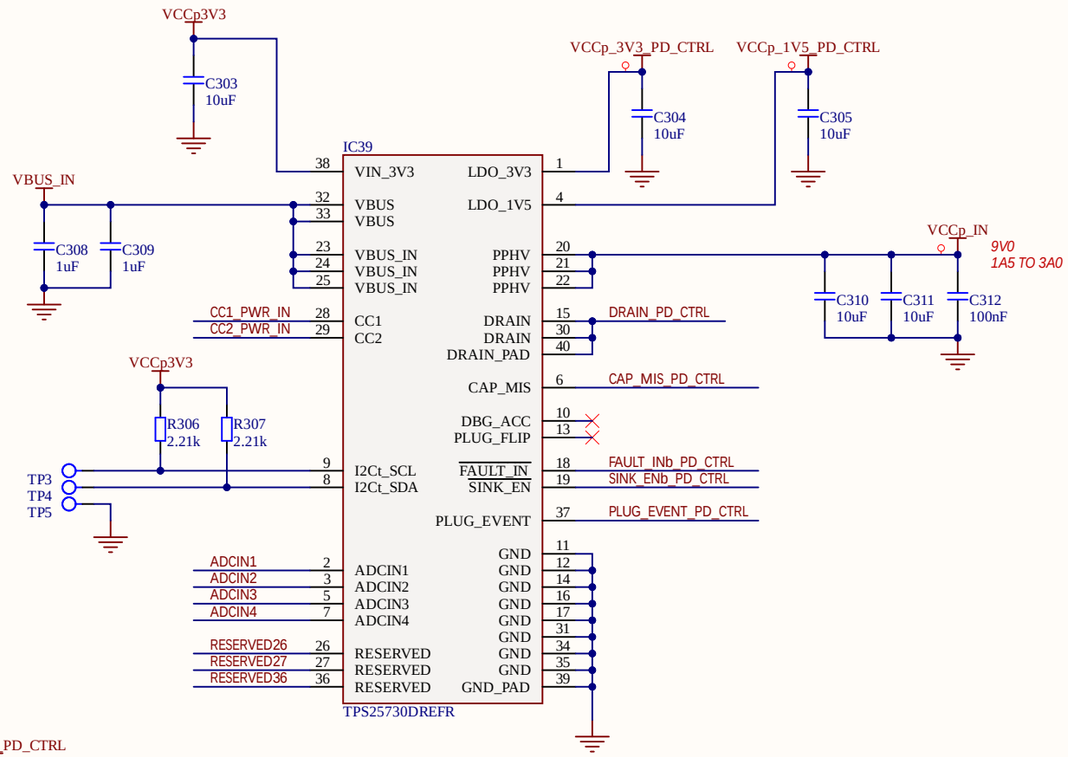


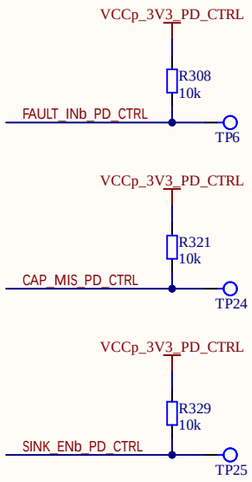


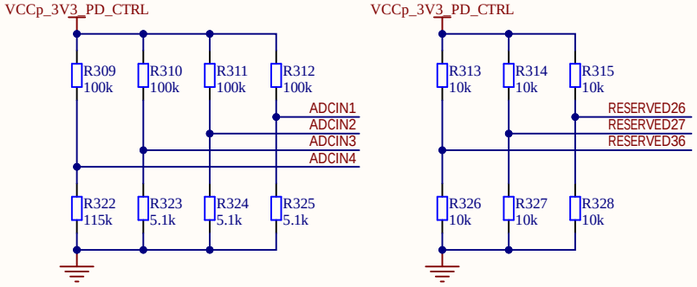
REAL DIGITAL			© Real Digital 2024
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [25] - FAN CONTROLLER.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 25 ***of*** 30	

POWER I

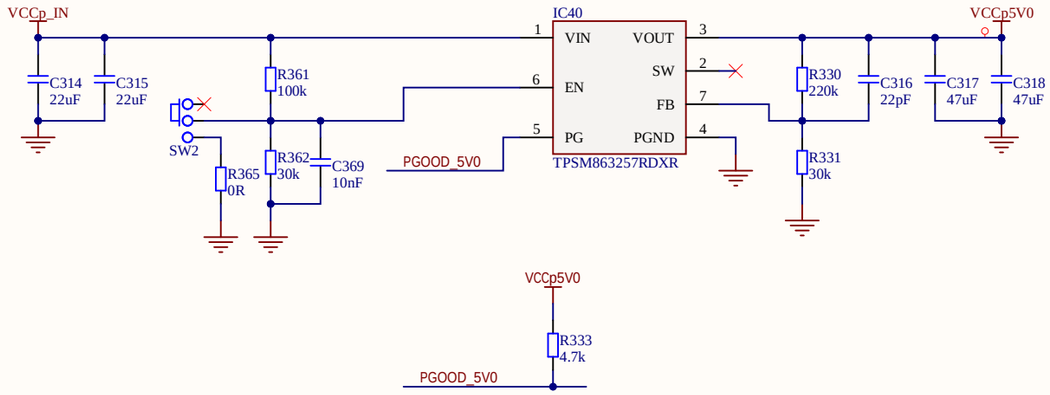


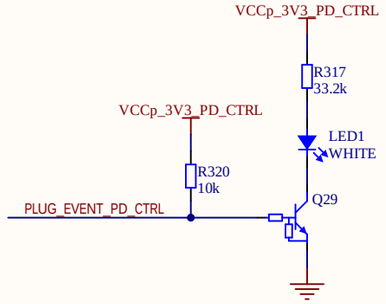






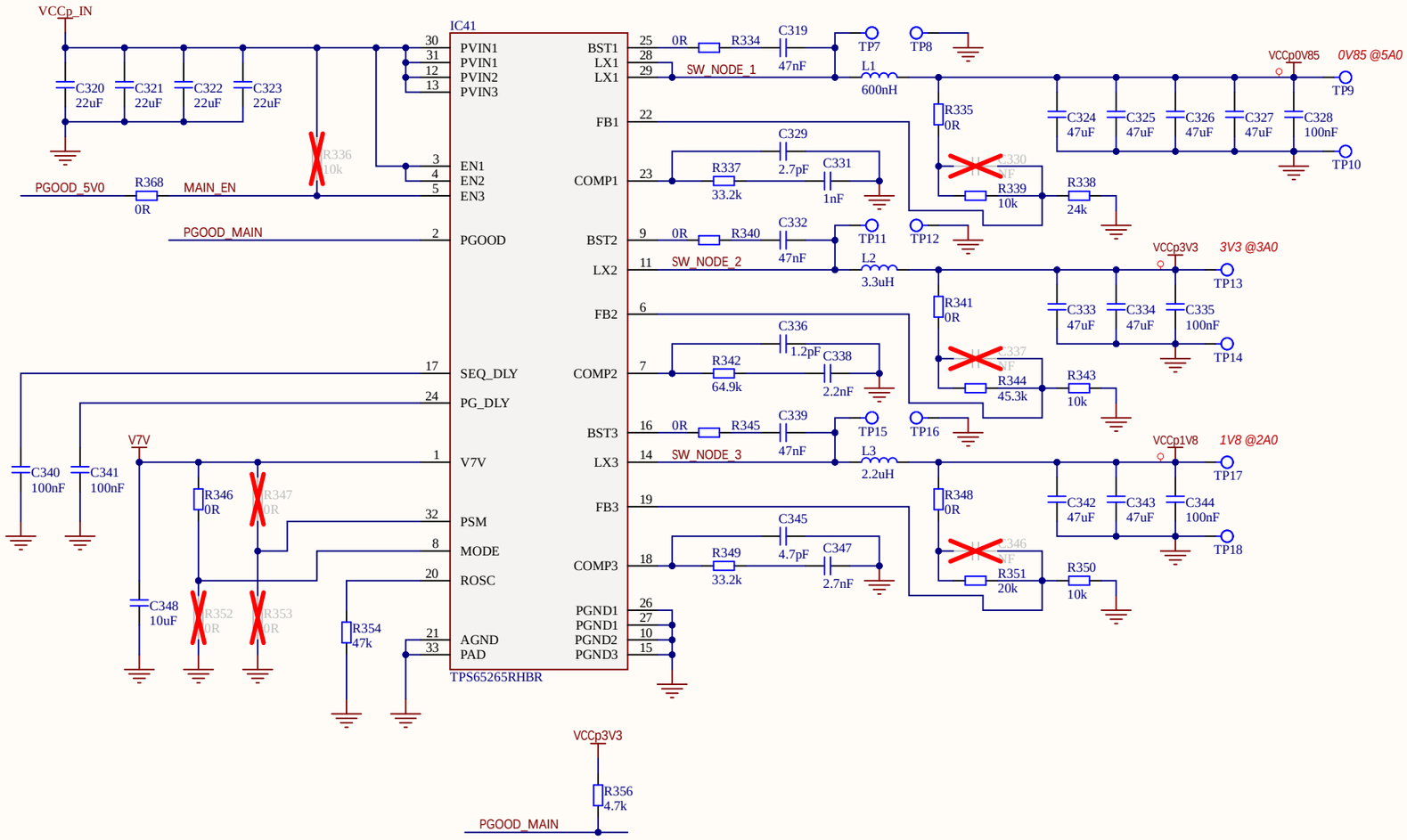
ADCIN1 - MIN Voltage 9V0
ADCIN2 - MAX Voltage 9V0
ADCIN3 - Operating Current 1A5
ADCIN4 - MAX Current 3A0





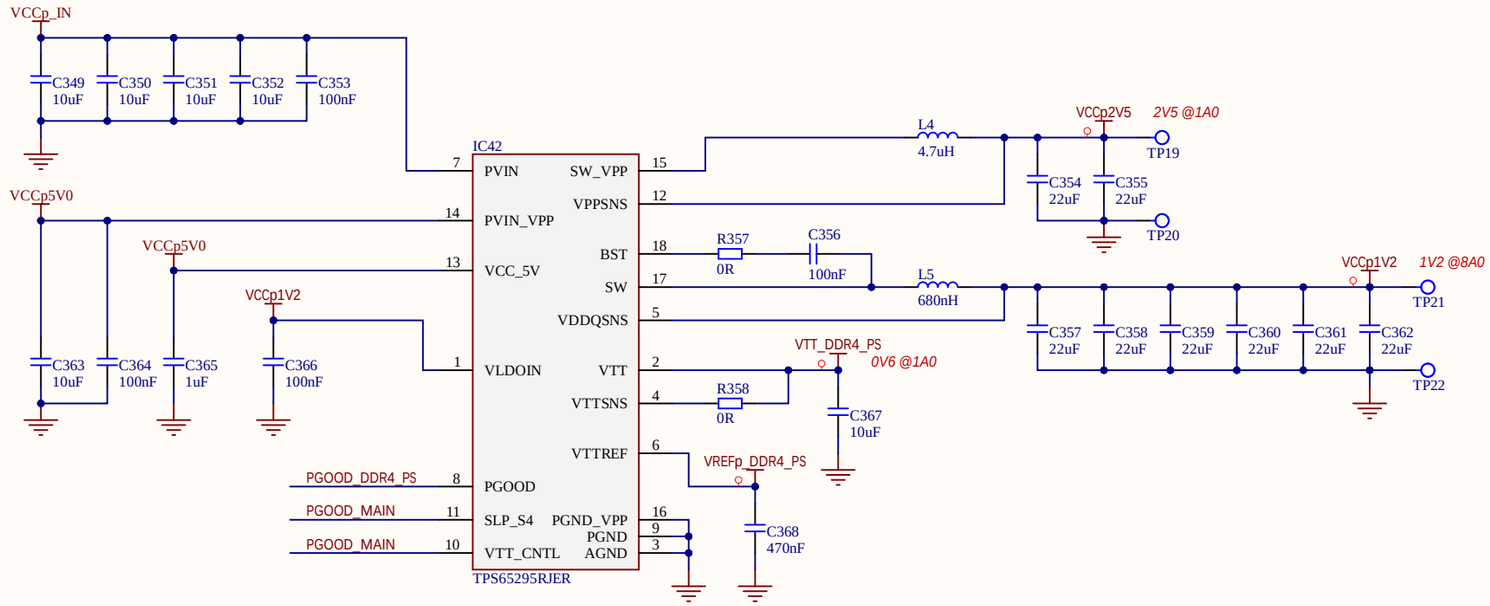
REAL DIGITAL		**© Real Digital 2024**	
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [26] - PWR I.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 26 ***of*** 30	

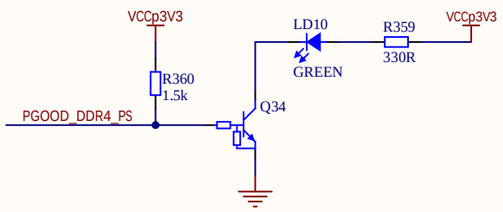
POWER II



REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [27] - PWR II.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 27 ***of*** 30	

POWER III





REAL DIGITAL		**© Real Digital 2024**	
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [28] - PWR III.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 28 ***of*** 30	

MECHANICAL AND POWER SEQUENCING

Real Digital
LG1

AMD-AUP
LG2

MH1 MH2 MH3 MH4

REAL DIGITAL			**© Real Digital 2024**
Title: AUP-ZU3		***Variant:*** Prototype	
Page Contents: [29] - MECH AND PWR SEQUENCING.SchDoc			
Size: A3	***DWG NO:*** KT-2024-0015-002-001A		***Revison:*** V3I1
Date: 1/30/2025	***Checked by:*** *	***Sheet*** 29 ***of*** 30	

DOC: REVISION HISTORY

REAL DIGITAL	**© Real Digital 2024**
Title: AUP-ZU3	***Variant:*** Prototype
Page Contents: [30] - DOC REVISION HISTORY.SchDoc	
Size: A3 / ***DWG NO:*** KT-2024-0015-002-001A	***Revison:*** V3I1
Date: 1/30/2025 / ***Checked by:*** *	***Sheet*** 30 ***of*** 30