

Schematic: Tiny Core Board

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02	Block Diagram
03	PIO Muxing
04	PMIC MCP16501TA
05	SAMA5D23- Power
06	SAMA5D23- DDR3
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Sheet 4: POWER SUPPLY

Single
PMU
Solution

Power rails

Atmel
SAMA5D23
Cortex(R)-A5 Processor

USB A
DEVICE

USB B
Host

USB A,B

Sheet 5: Power Part
Sheet 6: DDR3 CTL
Sheet 7: PIOA & PIOB
Sheet 8: PIOC & PIOD
Sheet 9: SYS & JTAG & DBUG

PMU or Battery

VBAT

256MB
DDR3
SDRAM

EBI

SPI0

QSPI FLASH

Sheet 10: QSPI FLASH

PIO A,B,C,D

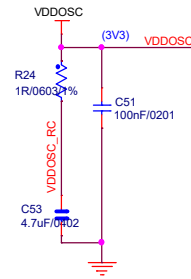
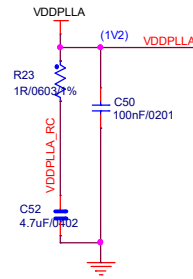
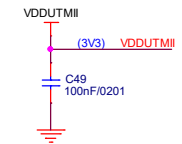
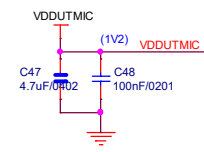
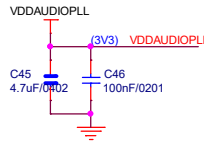
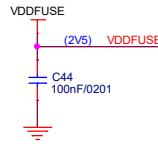
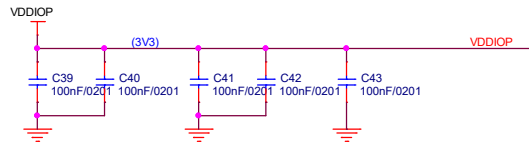
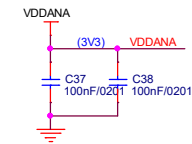
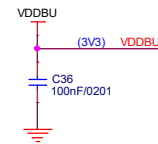
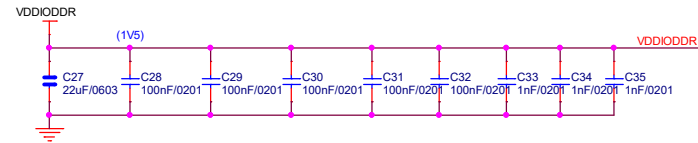
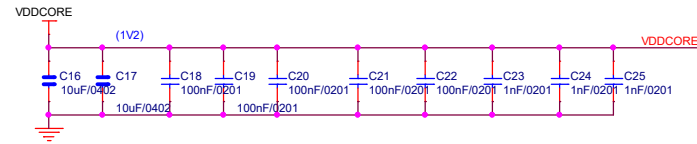
PIO A,B,C,D



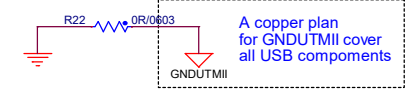
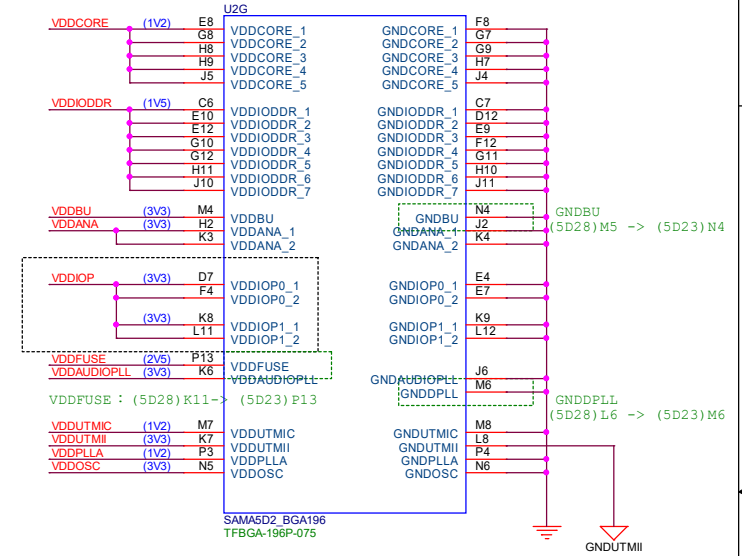
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Date		2021/05/17		Date		2021/05/17	
Title							
02 Block Diagram							
Size		Document Number					Rev
		Tiny Core module(3161xxxx)					1
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PIO Muxing & Jumper setting

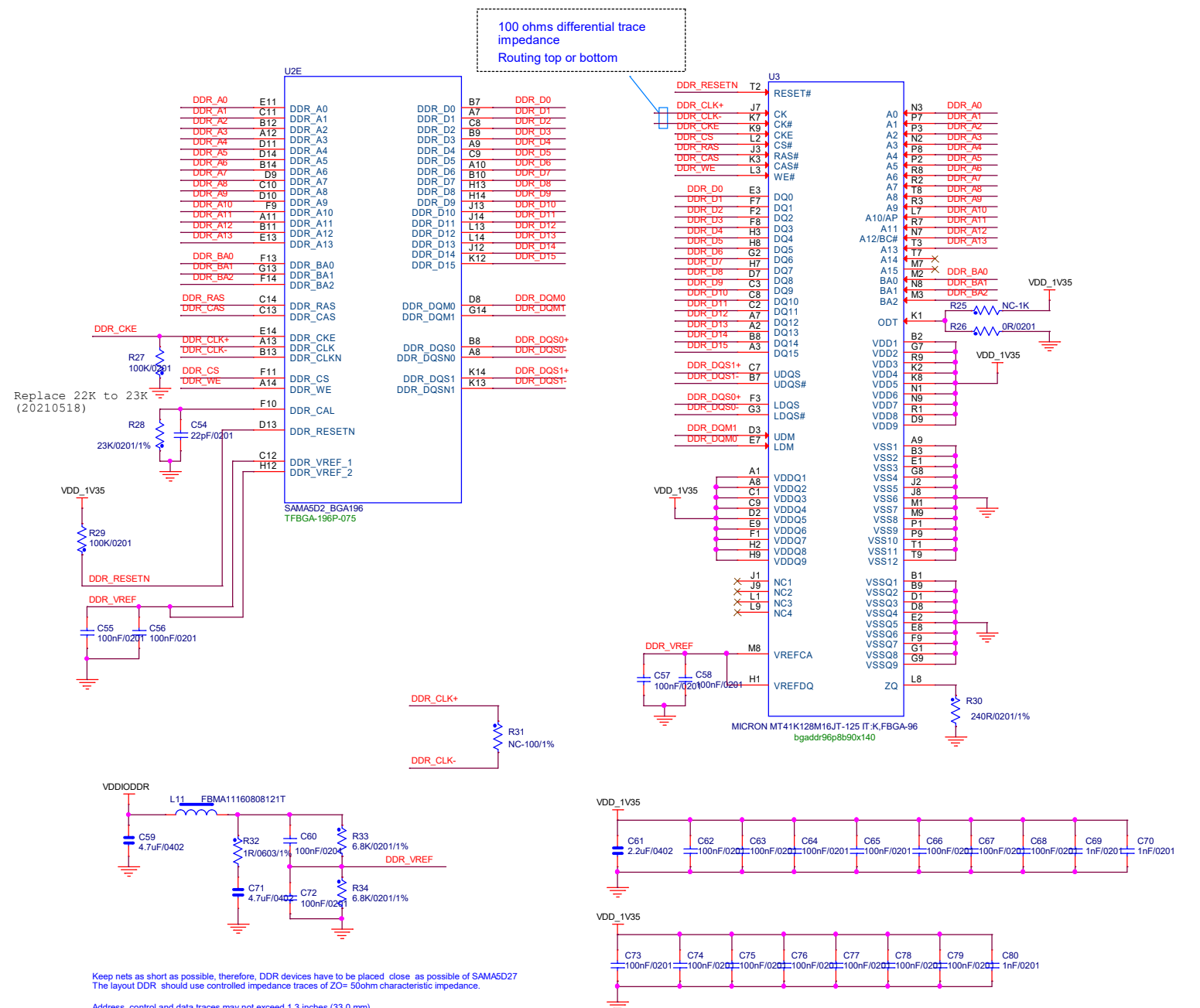
Design By	Gigi Chen	Approve By	Kevin Chang
Date	2021/05/17	Date	2021/05/17
Title			
03 PIO Muxing			
Size	Document Number		Rev
	Tiny Core module(3161xxxx)		1
Uniform Industrial Corp.		Sheet	3 of 12



All 100nF 0402 capacitors close to the Pin of VDD***.

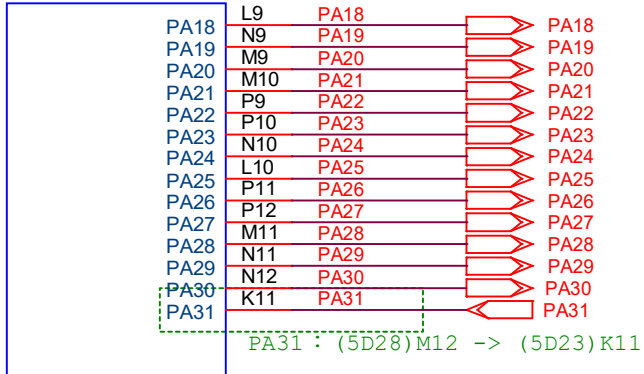


Design By		Gigi Chen		Approve By		Kevin Chang	
Date		2021/05/17		Date		2021/05/17	
Title							
05 SAM5D23C - Power							
Size	Document Number						Rev
	Tiny Core module(3161xxxx)						1
Uniform Industrial Corp.				Sheet 5 of 12			



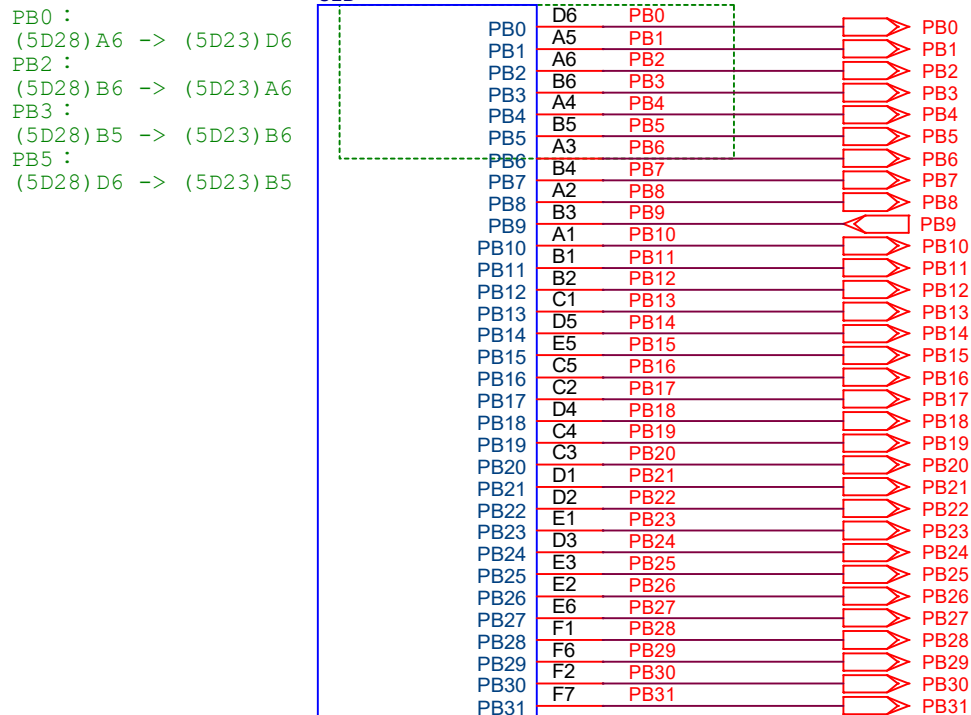
Design By	Gigi Chen	Approve By	Kevin Chang
Date	2021/05/17	Date	2021/05/17
Title			
06 SAMA5D23C - DDR3			
Size	Document Number	Rev	
Tiny Core module(3161xxxx)		1	
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U2A



SAMA5D2_BGA196
TFBGA-196P-075

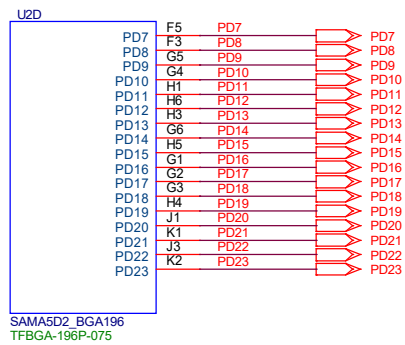
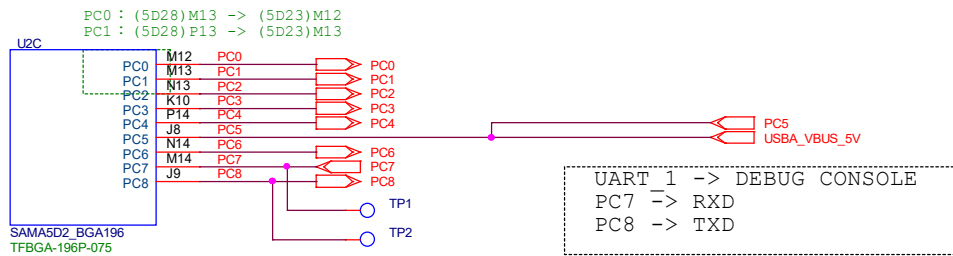
U2B



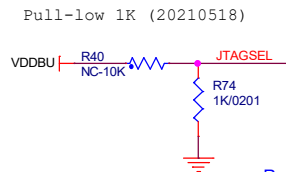
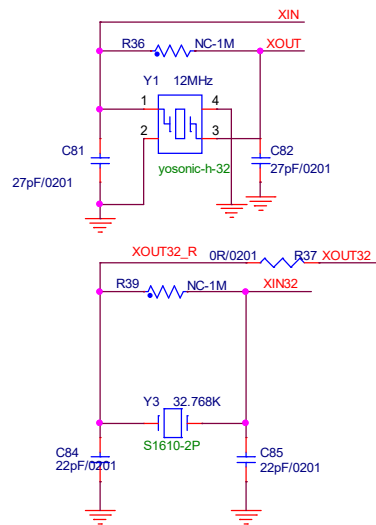
SAMA5D2_BGA196
TFBGA-196P-075

PB5 ~ PB10 : QSPI Flash

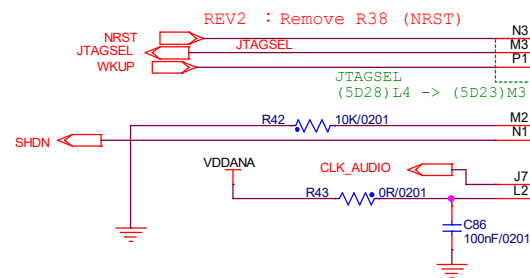
Design By	Gigi Chen	Approve By	Kevin Chang
Date	2021/05/17	Date	2021/05/17
Title			
07 SAMA5D23C - PIOA & PIOB			
Size	Document Number		Rev
	Tiny Core module(3161xxxx)		1
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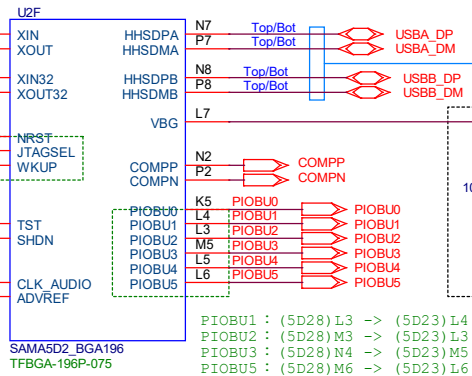
Design By	Gigi Chen	Approve By	Kevin Chang
Date	2021/05/17	Date	2021/05/17
Title			
08 SAMA5D23C - PIOC & PIOD			
Size	Document Number		
	Tiny Core module(3161xxxx)		
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			Rev 1



Routing top or bottom

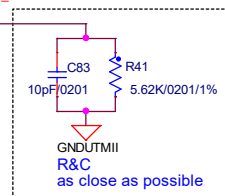


SYS

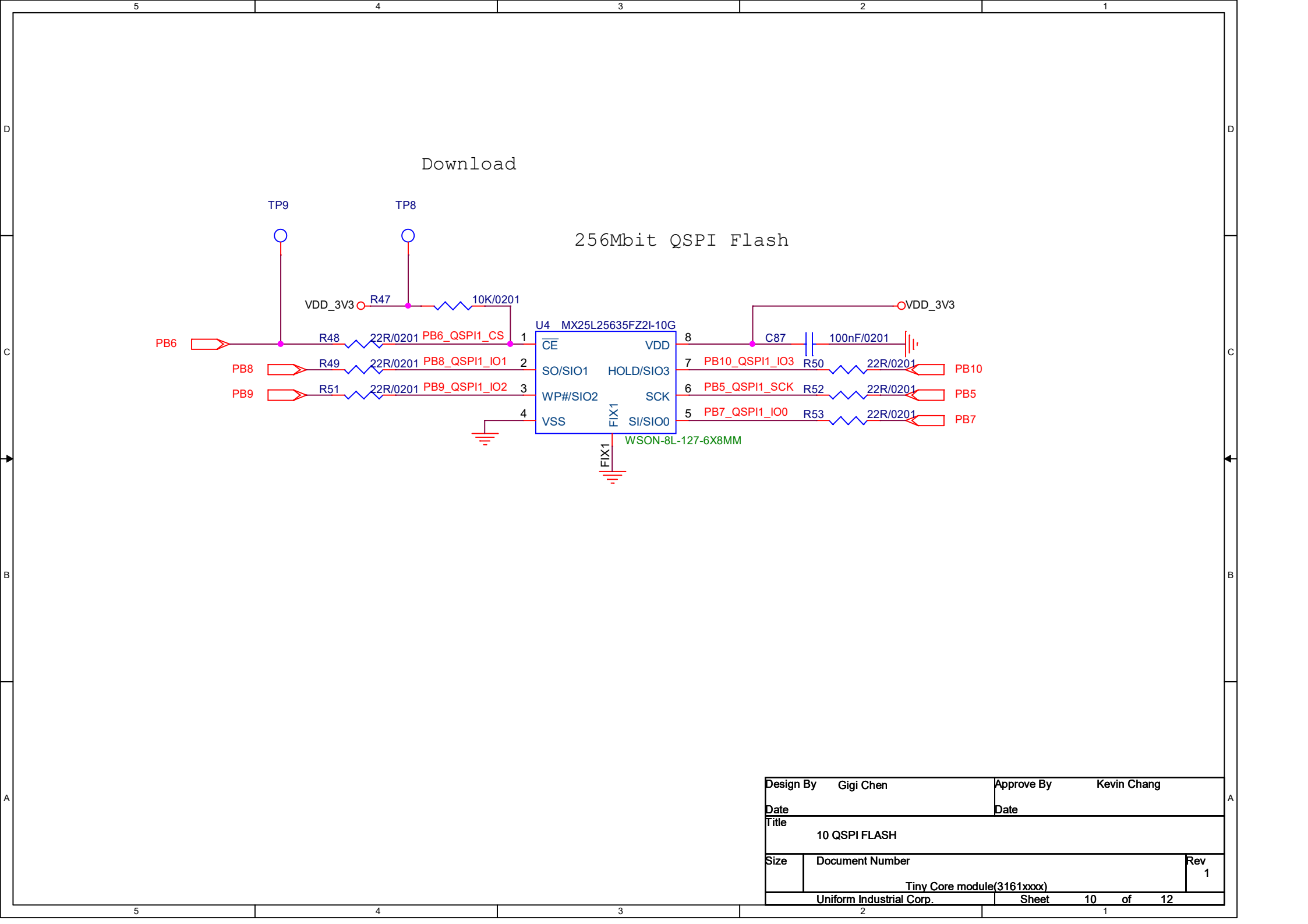


Routing USB

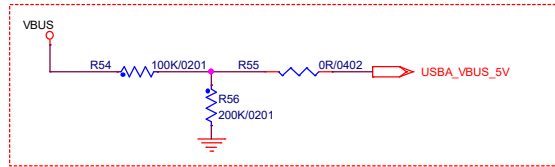
Max trace-length mismatch between USB signals pairs should be no greater than 3.8mm
90 ohms differential trace impedance



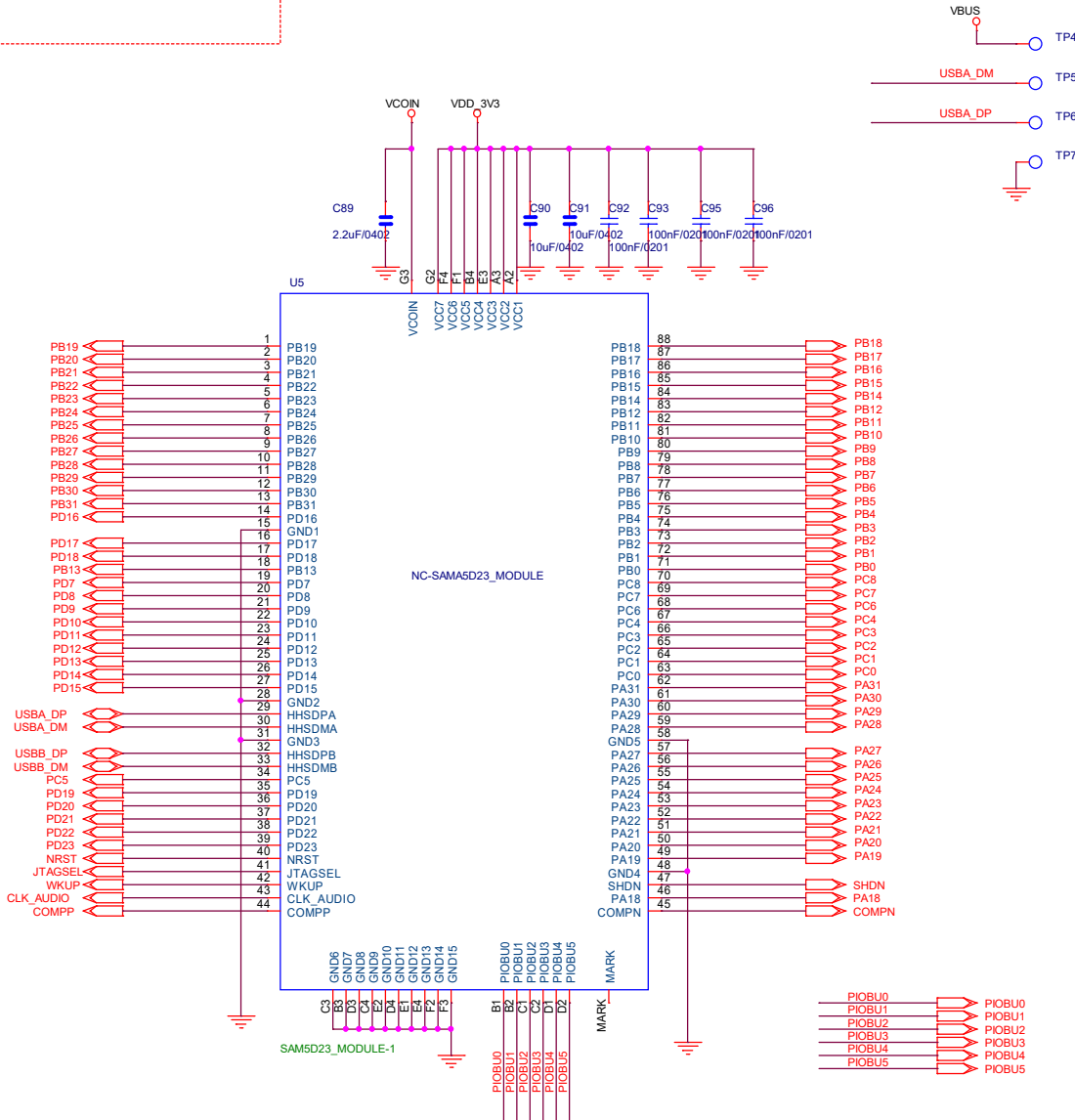
Design By	Gigi Chen	Approve By	Kevin Chang
Date	2021/05/17	Date	2021/05/17
Title	09 SAMA5D23C - SYS		
Size	Document Number	Rev 1	
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Design By		Gigi Chen		Approve By		Kevin Chang	
Date				Date			
Title		10 QSPI FLASH					
Size	Document Number					Rev	
	Tiny Core module(3161xxxx)					1	
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REV2 : Remove C88



Design By	Gigi Chen	Approve By	Kevin Chang
Date	2021/05/17	Date	2021/05/17
Title			
11 CONNECTOR			
Size	Document Number		Rev 1
Tiny Core module(3161x202)			
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Revision History

DATE	REVISION	DESCRIPTION
20210517	Tiny Core Board/Rev1	New PMIC on MicroChip "MCP16501TA".

Design By	Gigi Chen	Approve By	Kevin Chang
Date	2021/05/17	Date	2021/05/17
Title 12 Revision History			
Size	Document Number		
	Tiny Core module(3161xxxx)		
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