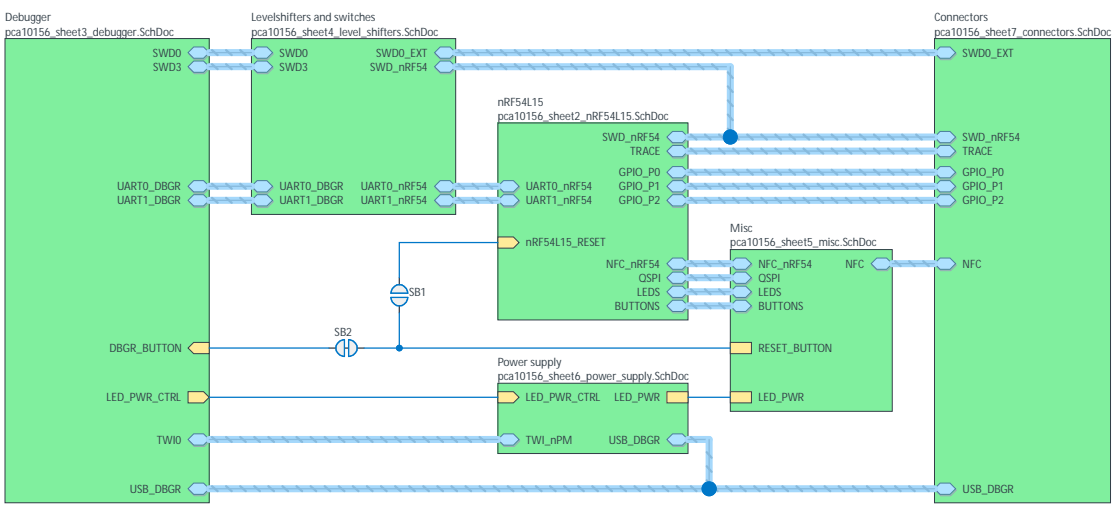


# Nordic Semiconductor ASA

## nRF54L15 Development Kit (PCA10156)

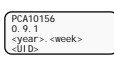
- Sheet 1: Connections
- Sheet 2: nRF54L15
- Sheet 3: Debugger
- Sheet 4: Level Shifters
- Sheet 5: Misc
- Sheet 6: Power Supply
- Sheet 7: Connectors




✖ The No ERC object is a design directive.  
This directive is placed on a node in the circuit to suppress harmless warnings and/or error violation conditions that are detected when the schematic project is compiled.

Board fiducials

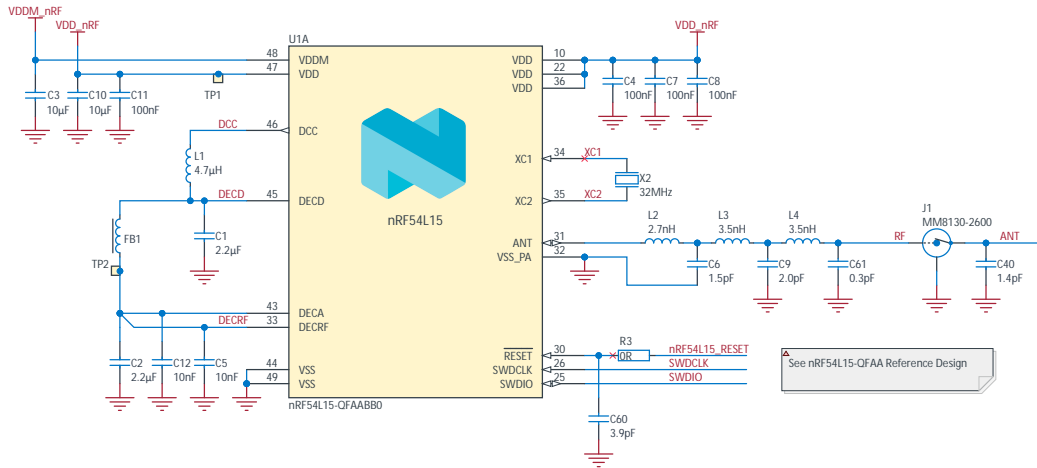
Logo's and markings



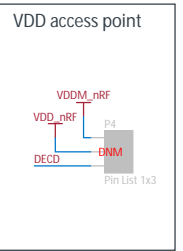
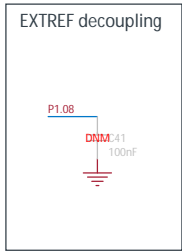
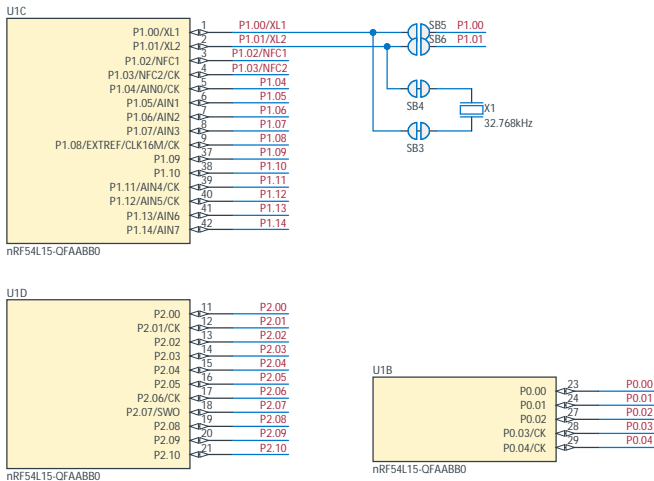
Title nRF54L15-DK - Connections			
Size A3	PCB Assembly Number PCA10156	Revision 0.9.1	
Date: 02.10.2024		Sheet 1 of 7	
File: pca10156_sheet1_connections.SchDoc		Drawn By: STL1	
Classification: PUBLIC			

For this version of the DK, the VDDM pin provides the main power source to nRF54L15. This approach will not be used for any future designs.

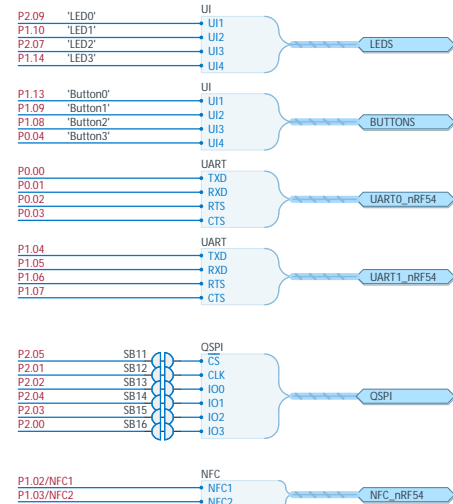
Future DK's and the latest reference design has the VDDM pin 48 renamed to VDD and shorted to VDD pin 47.



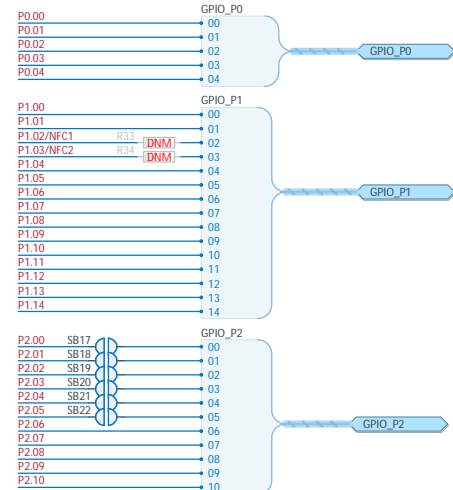
See nRF54L15-QFAA Reference Design



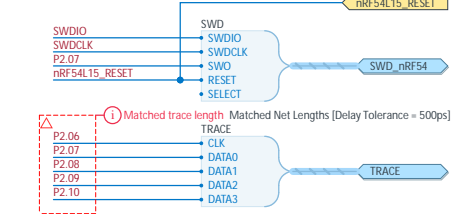
## On-board interface



## GPIO interface



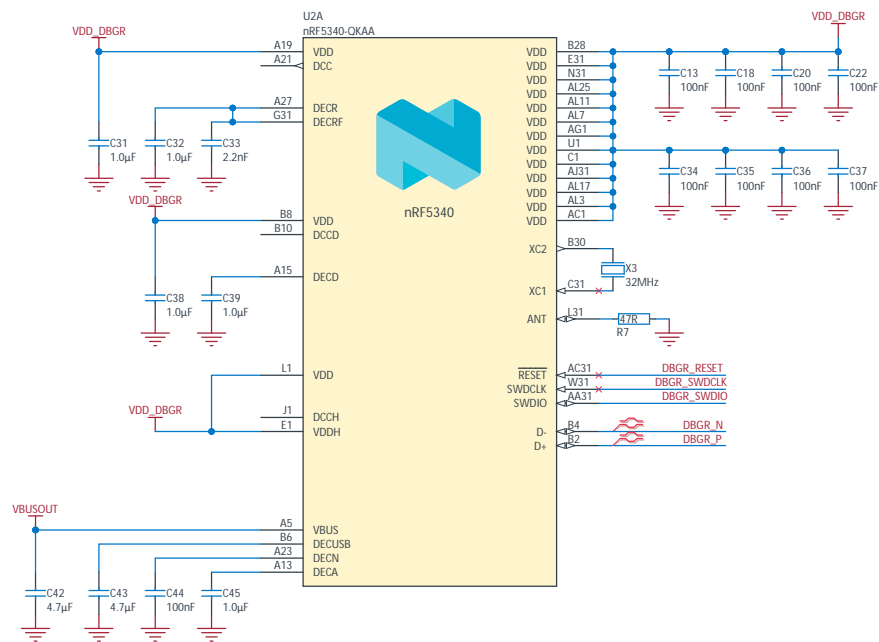
## SWD and Trace



Title nRF54L15-DK - nRF54L15		Revision 0.9.1	
Size A3	PCB Assembly Number PCA10156		Sheet 2 of 7
Date: 02.10.2024	File: pca10156-sheet2_nRF54L15.SchDoc		Drawn By: STL1
Classification: PUBLIC			

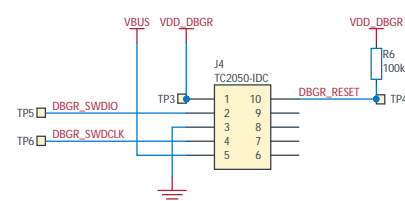


# Debugger

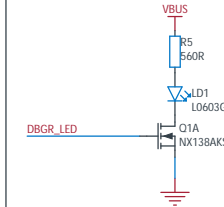


VDD\_DBG = VDDIO = 1.8 - 2.6V

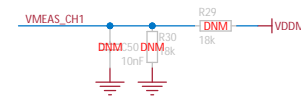
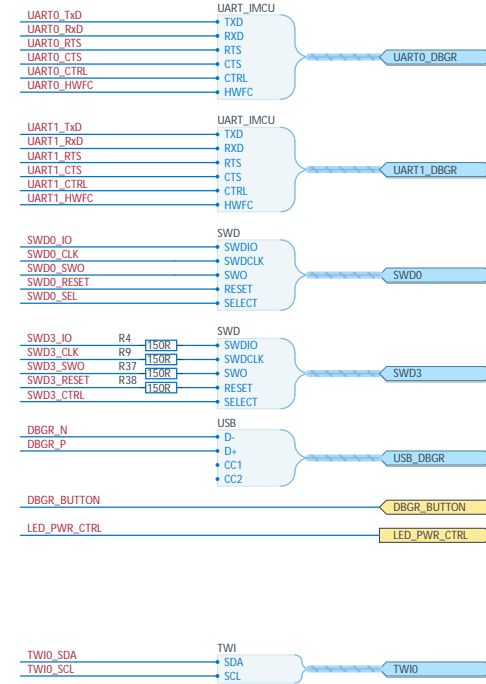
# Debugger Programming Connector



# LED



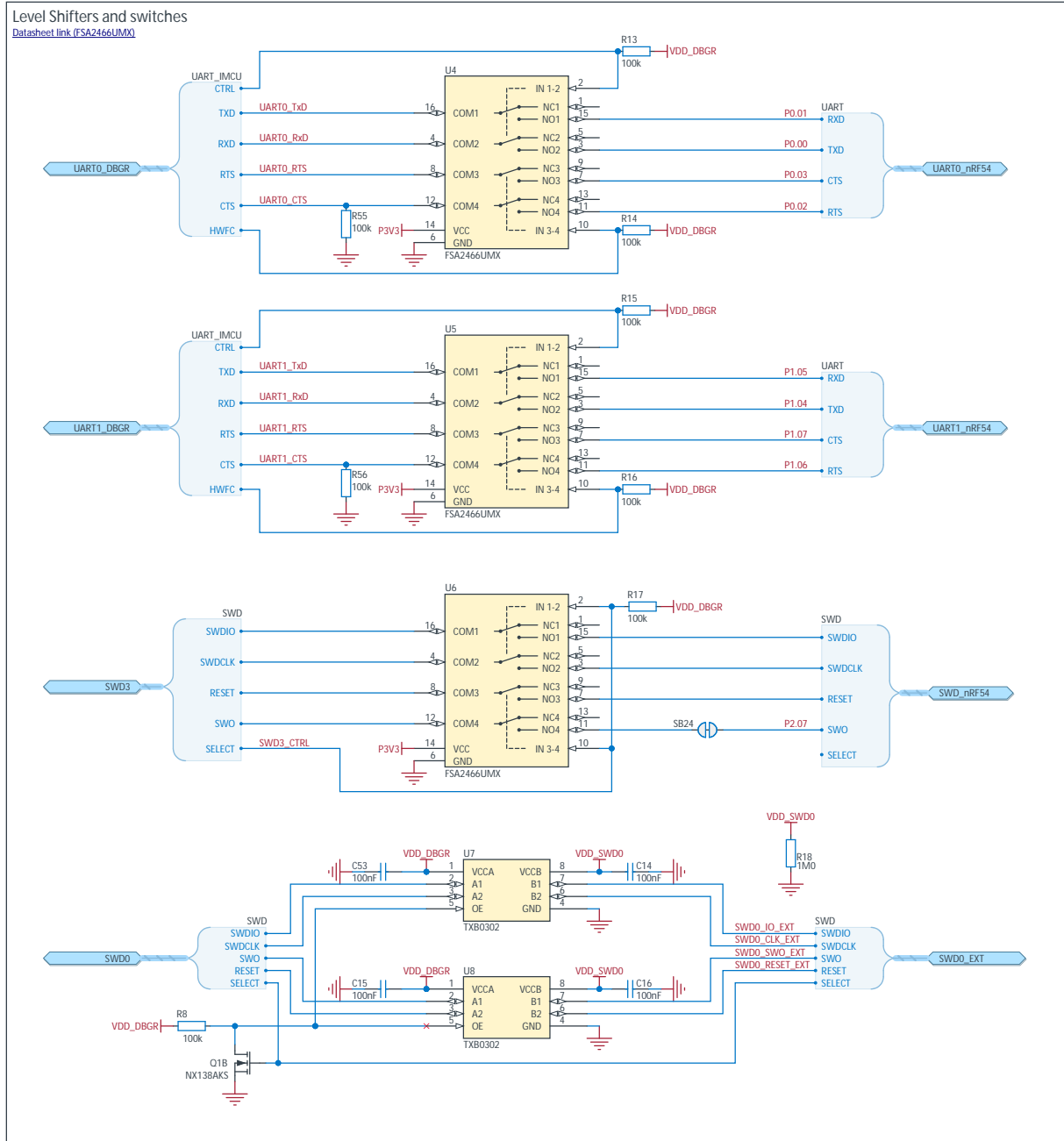
# Ports



Title nRF54L15-DK - Debugger			
Size A3	PCB Assembly Number PCA10156	Revision 0.9.1	
Date: 02.10.2024		Sheet 3 of 7	
File: pca10156_sheet3_debugger SchDoc		Drawn By: STL1	
Classification: PUBLIC			

FSA2466UMX:  
NC/NO terminal: 6pF, OFF  
21pF, ON

Flow control and interface control  
signal controlled by IMCU



A

B

C

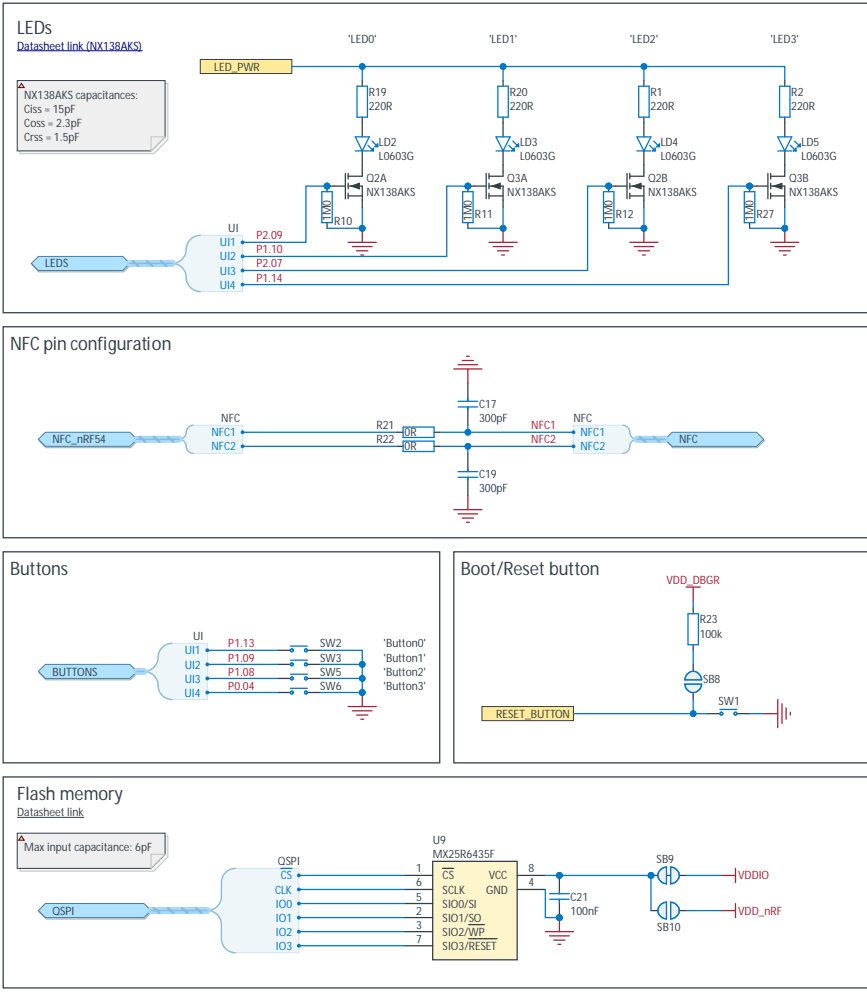
D

A

B

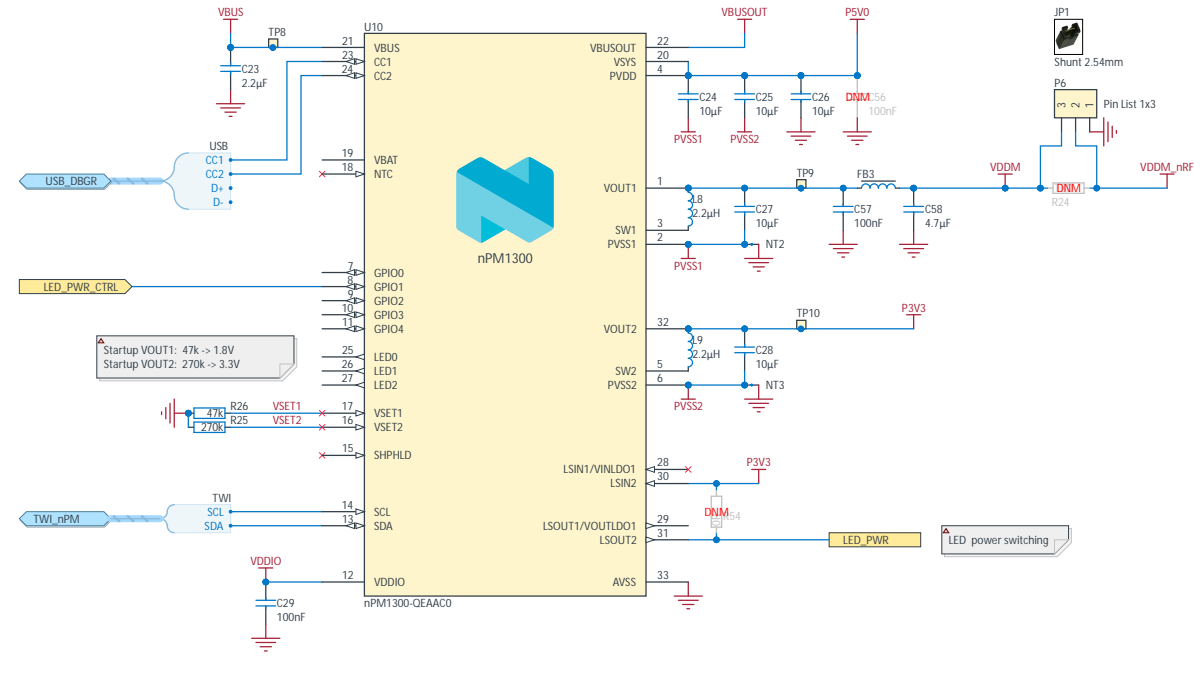
C

D

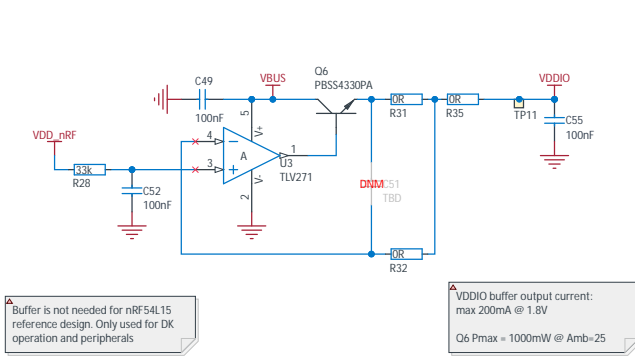


## Power managment

[Datasheet link](#)



## VDD\_nRF supply buffer -> VDDIO



PI filer FB3, C57, C58 only used for PPK2 low current measurement accuracy

### Power domain overview:

VDDM_nRF	Main input power for nRF54L15
VDD_nRF	Main IO VDD for nRF54L15, 1.8V to 2.6V
VDDM	1.8V - 3.3V VDDM source from nPM1300 VOUT1
VDDIO	Buffered VDD_nRF used for IO supply
VDD_DBG	Debugger VDD tapped from VDDIO
VBUS	USB VBUS after power switch
VBUSOUT	VBUSOUT from nPM1300, used by Debugger
P5V0	5V VSYS (VBUS) used for input to Buck regulators
P3V3	Regulated 3.3V used for analog switches and LEDs

### nPM1300 settings:

- VOUT1 set to 1.8V
- VOUT2 set to 3.3V
- VOUT1 and VOUT2 enabled and forced in PWM mode
- VOUT1 and VOUT2 output discharge enable
- Enable LS2 for LED power switching, using GPIO1 as enable/disable signal.

Title  
nRF54L15-DK - Power Supply

Size  
A3

PCB Assembly Number  
PCA10156

Date: 02.10.2024

File: pca10156\_sheet6\_power\_supply\_SchDoc

Classification: PUBLIC

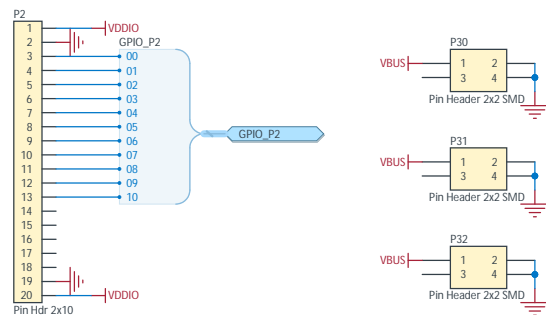
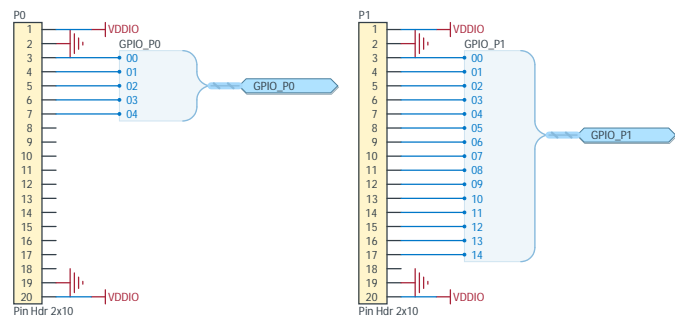
Revision  
0.9.1

Sheet 6 of 7

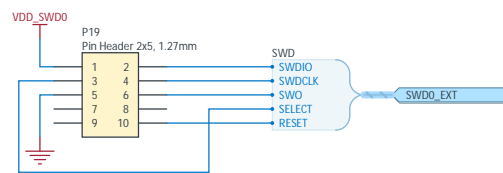
Drawn By: STL1



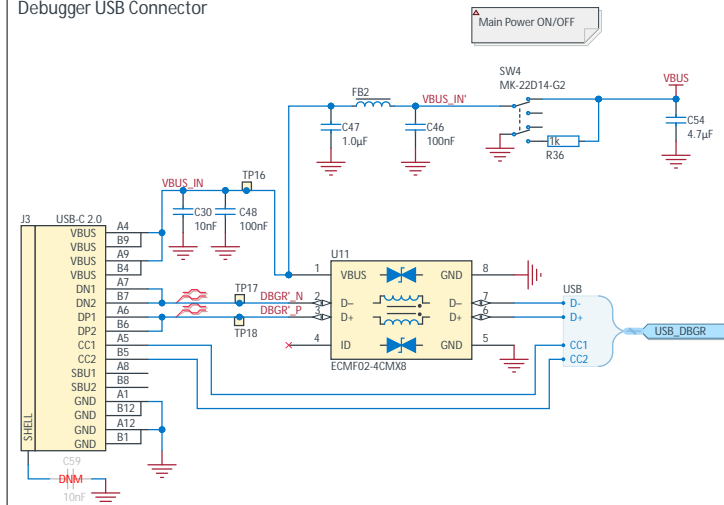
# GPIO Connectors



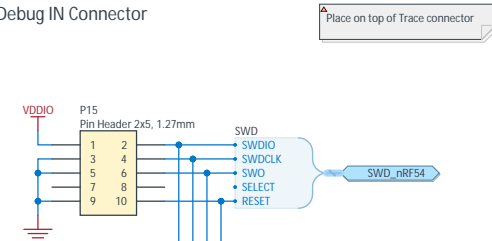
# Debug OUT Connector



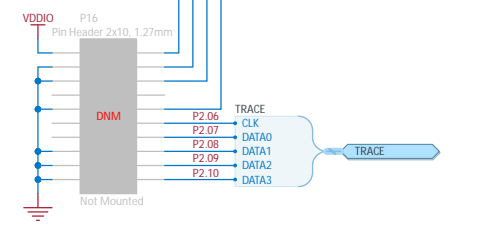
# Debugger USB Connector



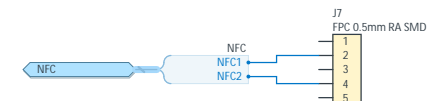
# Debug IN Connector



# Trace connector

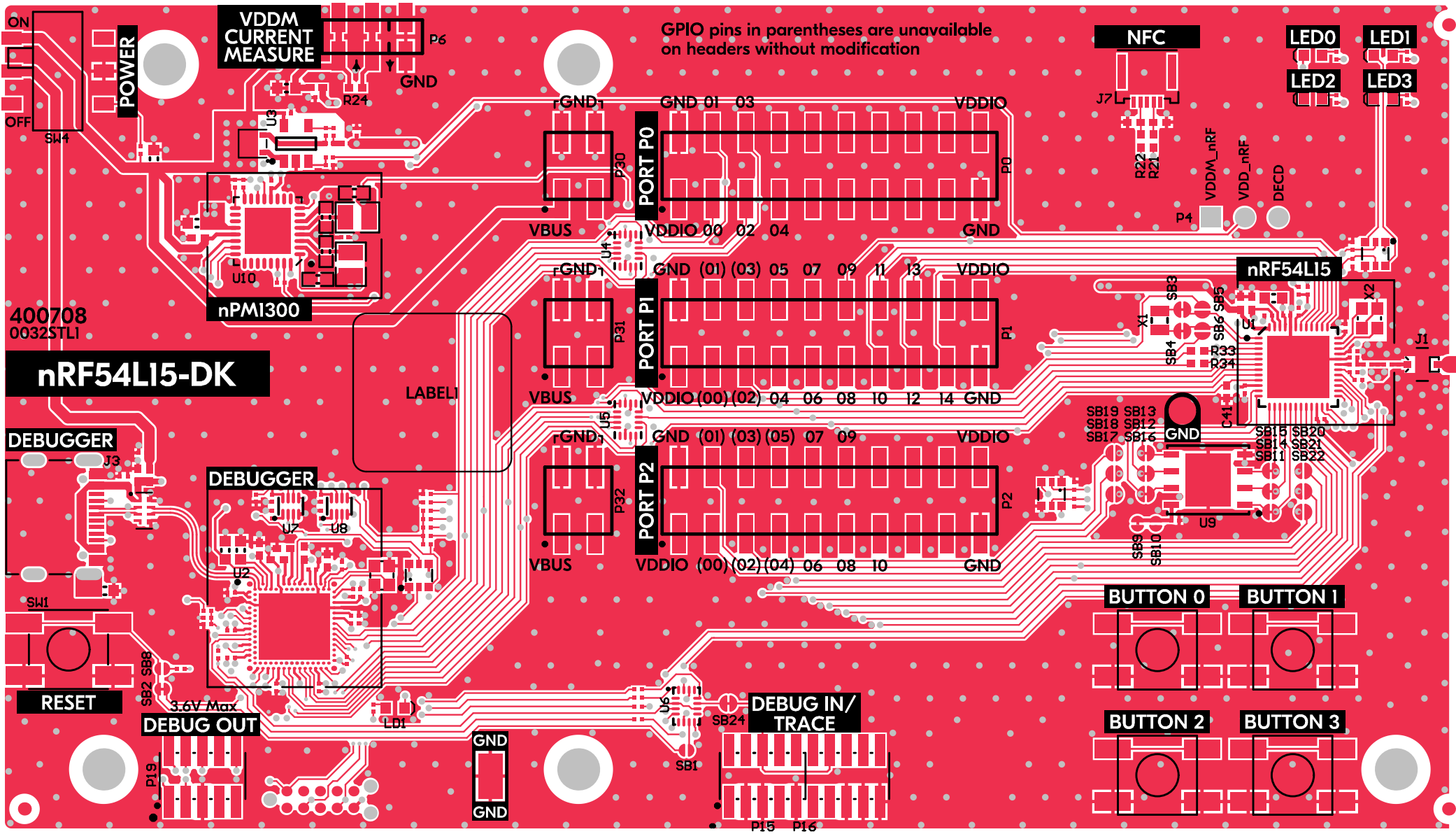


# NFCT Antenna Connector

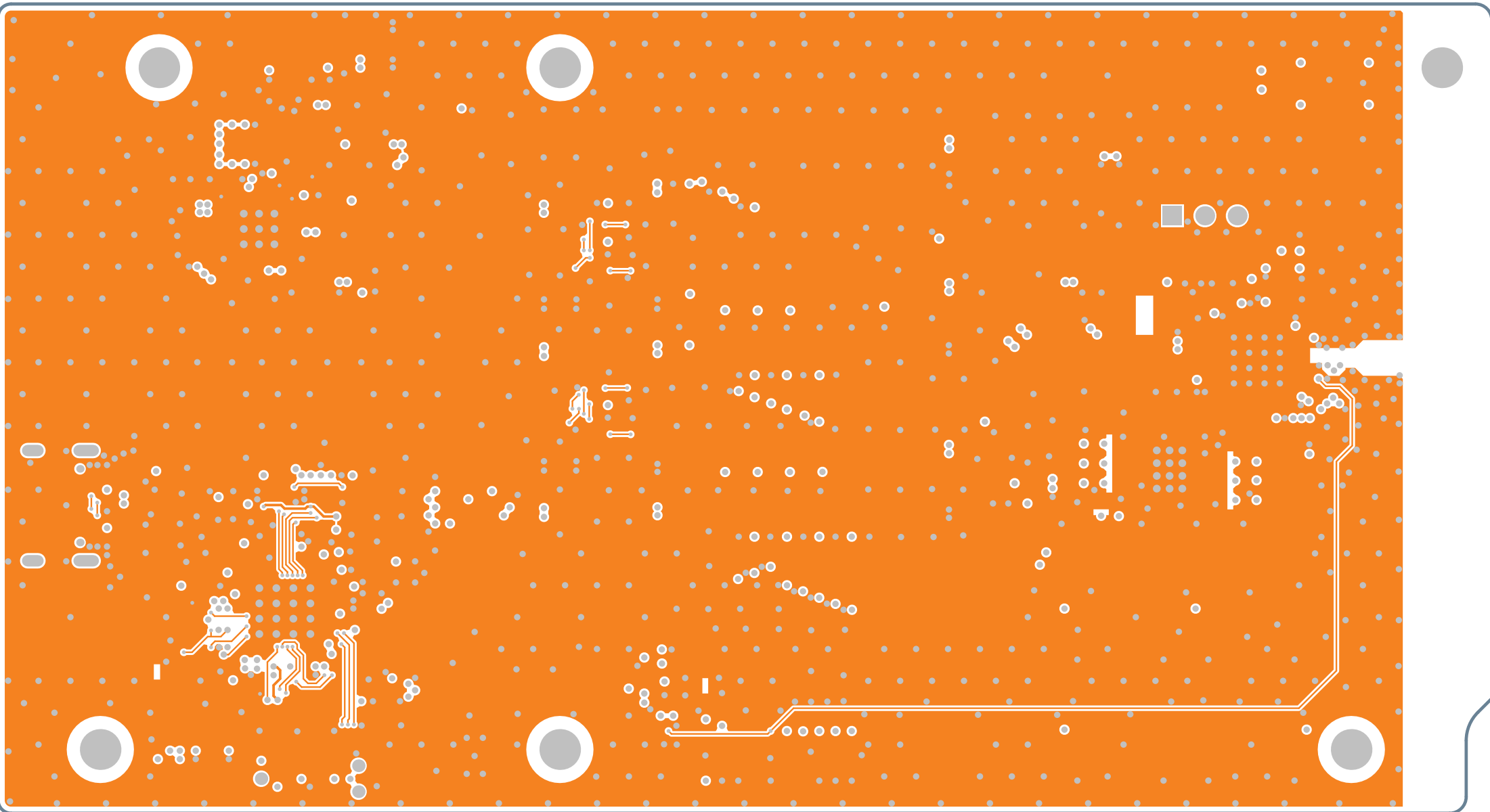


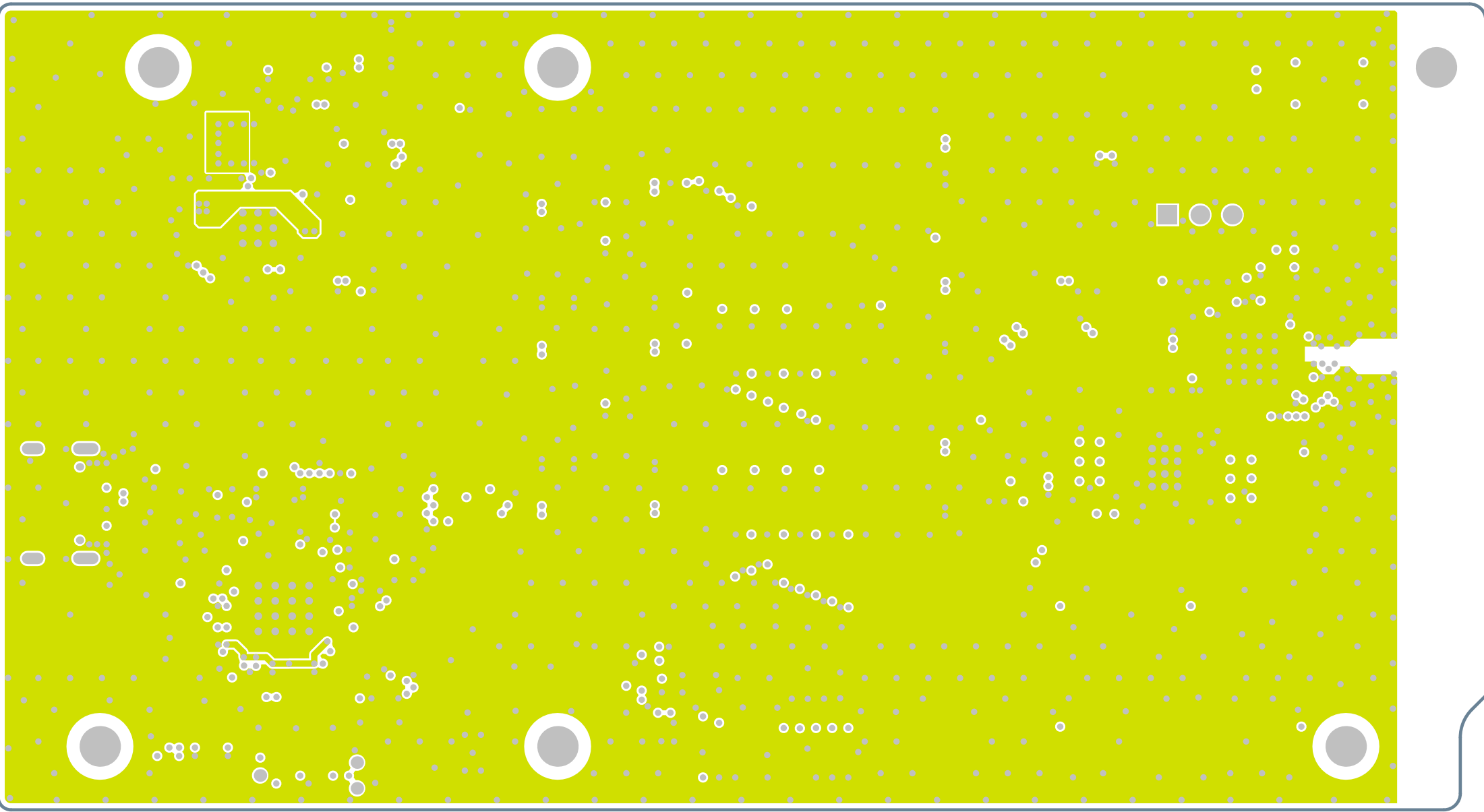
# GND probe point













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Link Technology



P5'03	ZMO	uP5E24
	ZMDCFK	
	ZMDIO	
	BE2EL	DEBUGGER
P1'01	CT21	
P1'09	KT21	uP5E24
P1'04	TXD1	
P1'02	KXD1	BI1
P0'03	CT20	
P0'05	KT20	
P0'00	TXD0	DEBUGGER
P0'01	KXD0	
GPIO	Function	Circuit

P1'03	IECS		GPIO
P1'05	IECI		IEC
P1'01	XG3	2B4	GPIO
P1'00	XG1	2B2	BI1
		2B3	
GPIO	Function	Port	HW
P5'00	DIO3	2B12\13	
P5'03	DIO5	2B12\30	
P5'04	DIO1	2B14\31	GPIO WEW
P5'05	DIO0	2B13\16	2Bx\
P5'01	CFK	2B15\18	2Bx BI1
P5'02	C2	2B11\33	
GPIO	Function	Port	HW

P0'04	BUTTON3	
P1'08	BUTTON2	
P1'06	BUTTON1	GPIO
P1'13	BUTTON0	
P1'14	LED3	
P5'01	LED5	IW
P1'10	LED1	GPIO
P5'06	LED0	3.3V
GPIO	Function	HW

