


# Nordic Semiconductor ASA

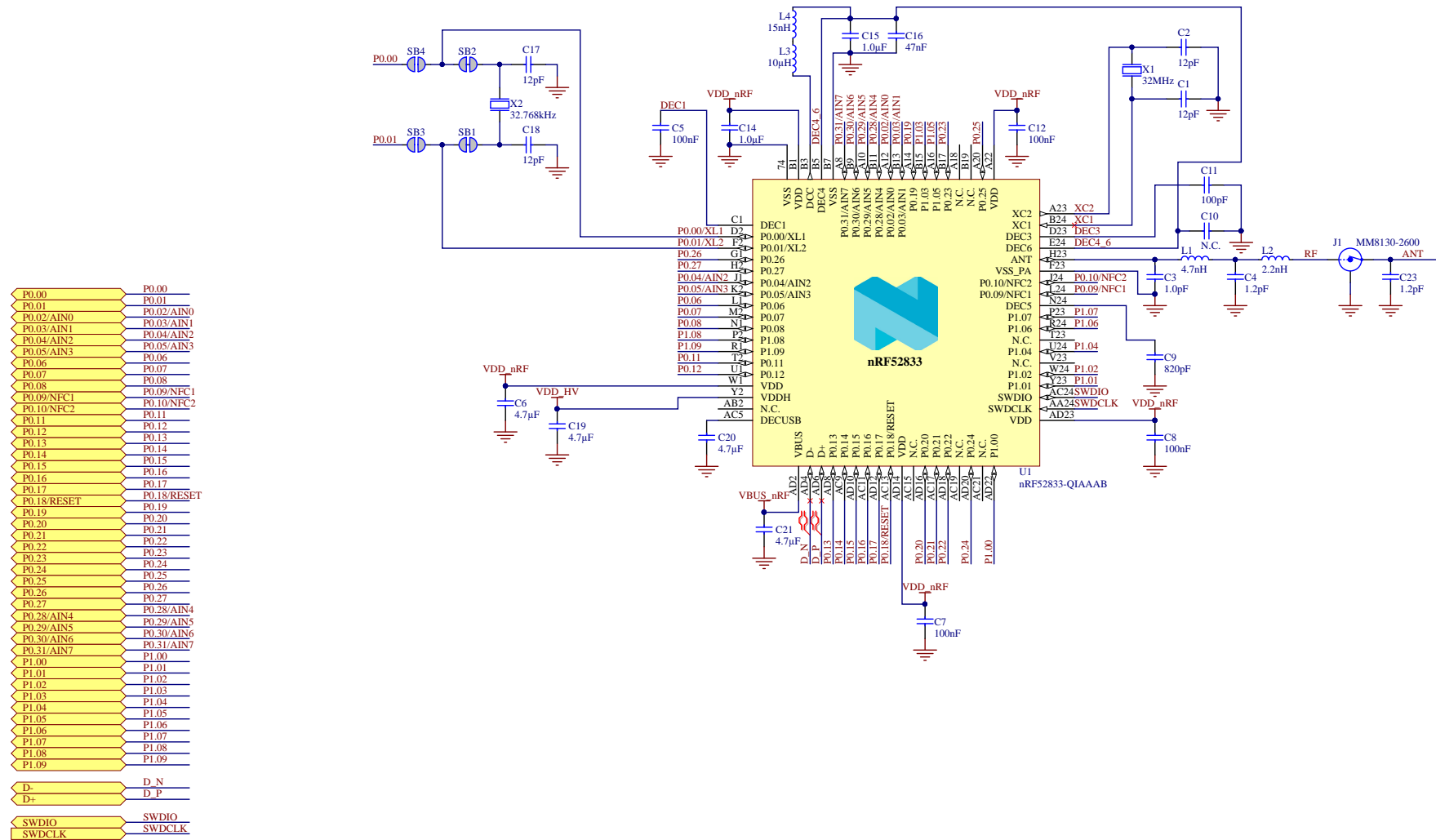
## nRF52833 Bluetooth Low Energy/ANT/802.15.4/2.4GHz RF Development Board (PCA10100)

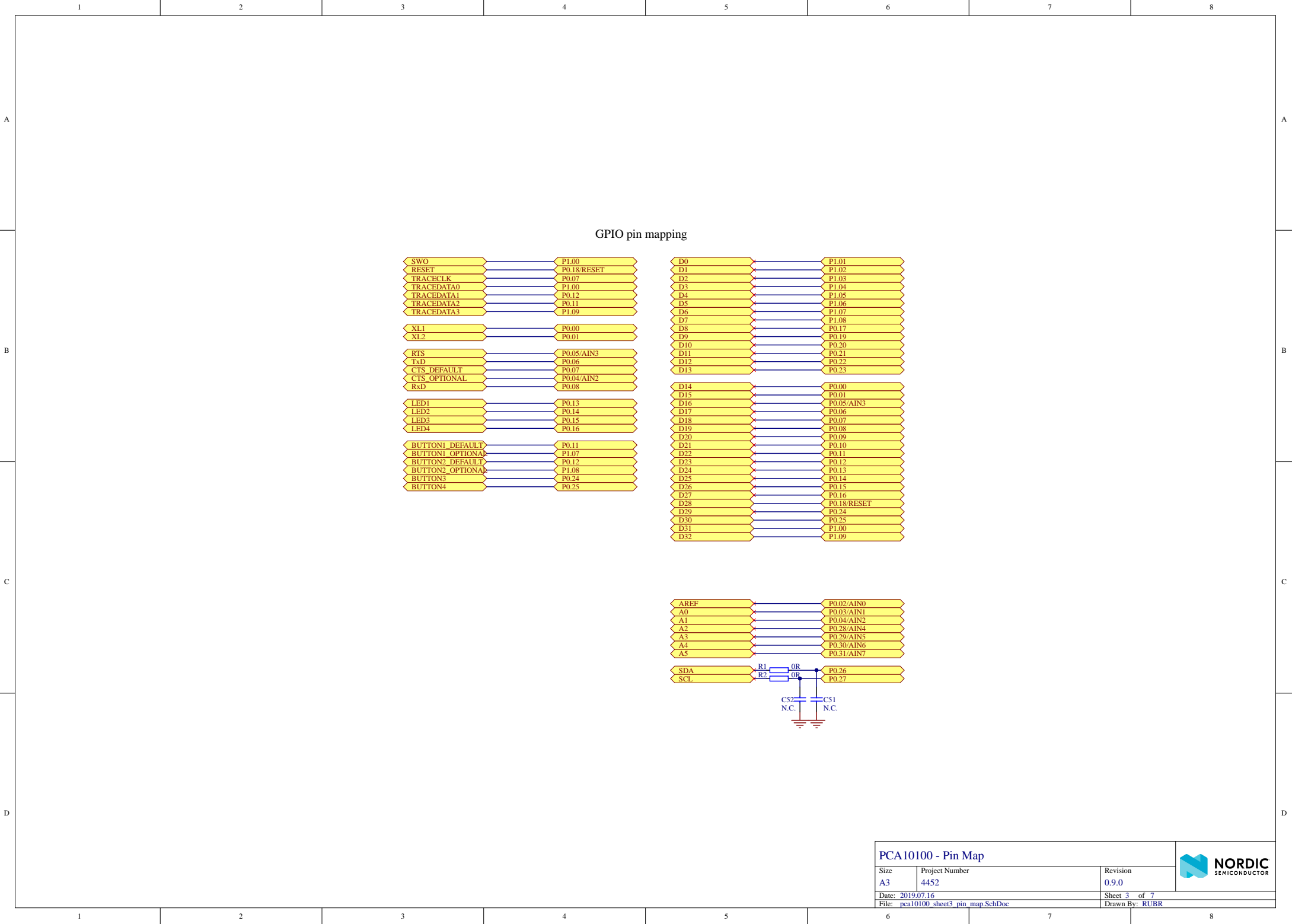
Sheet 1:	Cover
Sheet 3:	Pin Map
Sheet 2:	nRF Radio
Sheet 4:	Interface MCU
Sheet 5:	Miscellaneous
Sheet 6:	Connectors
Sheet 7:	Power Supply

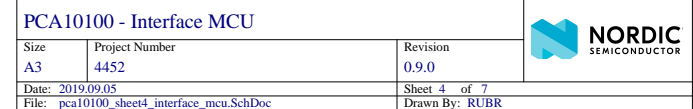
× The No ERC object is a design directive.  
This directive is placed on a node in the circuit to suppress harmless warnings and/or error violation conditions that are detected when the schematic project is compiled.

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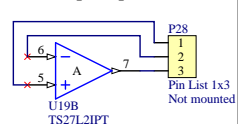
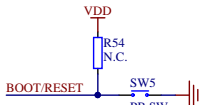
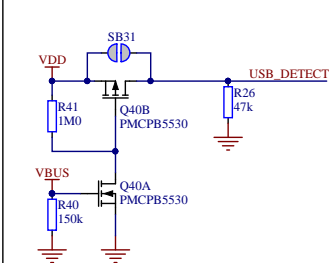
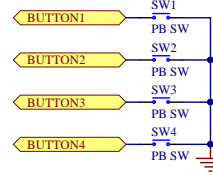
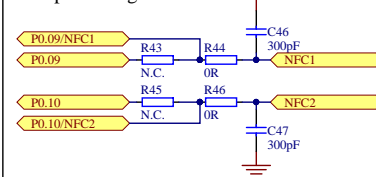
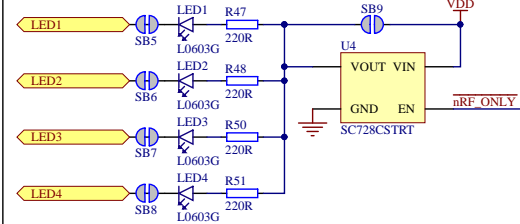
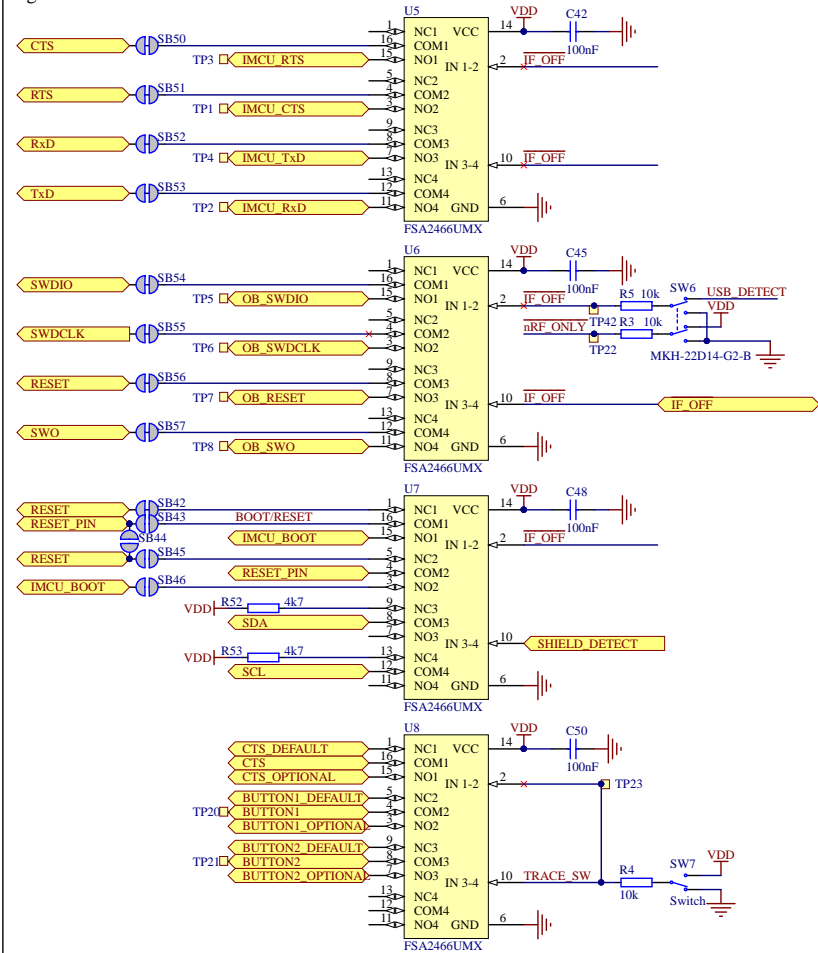
PCA10100 - Cover			
Size A3	Project Number 4452	Revision 0.9.0	
Date: 2019.07.16		Sheet 1 of 7	
File: pca10100_sheet1_cover.SchDoc		Drawn By: RUBR	











# Arduino Interface Connectors

**Bottom Connectors**

**Top connectors**

**P7**

VIO V5V VIN

RESET\_PIN

Pin List 1x8  
Not mounted

**P1**

Socket 1x8

**P13**

Pin Header 2x8  
Not mounted

**P8**

A0 A1 A2 A3 A4 A5

Pin List 1x6  
Not mounted

**P2**

Socket 1x6

**P14**

Pin Header 2x6  
Not mounted

**P9**

D0 (RX) D1 (TX) D2 D3 D4 D5 D6 D7

Pin List 1x8  
Not mounted

**P3**

Socket 1x8

**P15**

Pin Header 2x8  
Not mounted

**P10**

D8 D9 D10 (SS) D11 (MOSI) D12 (MISO) D13 (SCK) AREF SDA SCL

Pin List 1x10  
Not mounted

**P4**

Socket 1x10

**P16**

Pin Header 2x10  
Not mounted

**P11**

D12 D13 D11 RESET\_PIN

Socket 2x3  
Not mounted

**P5**

Pin Hdr 2x3

VDD

R68 IM0 TP19

SB32 SB33

SHIELD\_DETECT

### nRF USB Connector

The schematic diagram illustrates the nRF USB Connector circuit. It features a MicroUSB-B connector (J3) with pins 1 (VBUS), 2 (D-), 3 (D+), 4 (GND), 5 (ID), and a shield. The shield is connected to a 1MΩ resistor (R62) and a 4.7nF capacitor (C66) to ground. The VBUS pin is connected to a 120R/0.55A ferrite bead (FB60) and a 10nF capacitor (C60) to ground. The D- pin is connected to a 10μF capacitor (C61) to ground and a 120R/0.55A ferrite bead (FB62) to the ID pin. The D+ pin is connected to a 100nF capacitor (C62) to ground and a 120R/0.55A ferrite bead (FB60) to the VBUS line. The ID pin is connected to a 100nF capacitor (C68) to ground. The D- and D+ lines are connected to a PRTR5V0U2X transceiver (D60) which is powered by VBUS and GND. The transceiver has IO2 connected to D- and IO1 connected to D+. The D- and D+ lines are also connected to a 120R/0.55A ferrite bead (FB60) and a 10nF capacitor (C60) to ground.

# Interface MCU USB Connector

The schematic diagram illustrates the interface between a MicroUSB-B connector (J2) and a PRTR5V0U2X IC. The connector pins are VBUS, D+, D-, and ID. The IC pins are VCC, GND, IO2, and IO1. The ID pin is connected to the GND. The VBUS pin is connected to the VBUS supply. The D+ and D- pins are connected to the IO2 and IO1 pins of the IC. The IC also has two pins for DFSD\_N and DFSD\_P, which are connected to the R60 and R61 resistors respectively. The R60 and R61 resistors are connected to the GND. The schematic includes various components like capacitors (C63, C64, C65, C67), resistors (R60, R61, R63), and inductors (FB61, FB63).

### Interface MCU Programming Connector

The diagram illustrates the connection between the MCU programming connector (J4) and the MCU pins. The connector is a 6-pin IDC connector (TC2050-IDC) with pins numbered 1 through 6. The connections are as follows:

- VDD\_SAM is connected to pins 1 and 2.
- VBUS is connected to pin 3.
- TP35 is connected to pin 4.
- TP48 is connected to pin 5.
- TP49 is connected to pin 6.

The connector is labeled "TC2050-IDC Not mounted".

### Shield Debug and Current measurement Connector

Diagram illustrating the Shield Debug and Current measurement Connector. The connector is a 13-pin header (Pin List 1x13) connected to a 13-pin socket (Socket 1x13 Not mounted). The connections are as follows:

- P20: VDD\_0RF
- P21: VDD\_0RF
- P22: VIN\_3.5V
- P23: HV
- P24: VDD\_HV
- P25: VIO
- P26: REF

The connector is also connected to a 649R resistor (R69) which is connected to ground.

### NFCT Antenna Connector

The diagram illustrates the NFCT Antenna Connector. It shows two NFC modules, NFC1 and NFC2, connected to a J5 connector. NFC1 is connected to TP17, and NFC2 is connected to TP18. The J5 connector has five pins, numbered 1 to 5. The text 'FPC 0.5mm RA SMD' is written below the connector.

### Li-ion connector

P27  
Pin List 1x2  
Not mounted

J6  
HDR-2, 1mm

VLi-Ion

TP31

### Debug OUT Connector

The diagram illustrates the Debug OUT Connector circuit. It features a 2x5 pin header (P19) with the following connections:

- Pin 1: EXT\_VTG
- Pin 2: VDD (via capacitor SB47)
- Pin 3: TP53
- Pin 4: EXT\_SWCLK
- Pin 5: EXT\_SWDIO
- Pin 6: EXT\_SWO
- Pin 7: EXT\_GND\_DETECT
- Pin 8: GND
- Pin 9: EXT\_RESET
- Pin 10: GND

Pin Header 2x5, 1.27mm

## Auxiliary Connectors

The diagram illustrates the auxiliary connectors for the system. It shows two main sections: Bottom Connectors and Top connectors.

**Bottom Connectors:**

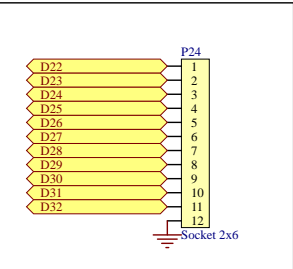
- P12:** A 1x8 pin header. Pins 1 through 8 are labeled. Below it, the text "Pin List 1x8" and "Not mounted" is present.
- P17:** A 2x8 pin header. Pins 1 through 16 are labeled. Below it, the text "Pin Header 2x8" and "Not mounted" is present.

**Top connectors:**

- P6:** A 1x8 pin header. Pins 1 through 8 are labeled. Below it, the text "Socket 1x8" is present.
- P17:** A 2x8 pin header. Pins 1 through 16 are labeled. Below it, the text "Pin Header 2x8" and "Not mounted" is present.

**Connections:**

- Pin 1 of P12 connects to Pin 1 of P6.
- Pin 2 of P12 connects to Pin 2 of P6.
- Pin 3 of P12 connects to Pin 3 of P6.
- Pin 4 of P12 connects to Pin 4 of P6.
- Pin 5 of P12 connects to Pin 5 of P6.
- Pin 6 of P12 connects to Pin 6 of P6.
- Pin 7 of P12 connects to Pin 7 of P6.
- Pin 8 of P12 connects to Pin 8 of P6.
- Pin 1 of P17 connects to Pin 1 of P6.
- Pin 2 of P17 connects to Pin 2 of P6.
- Pin 3 of P17 connects to Pin 3 of P6.
- Pin 4 of P17 connects to Pin 4 of P6.
- Pin 5 of P17 connects to Pin 5 of P6.
- Pin 6 of P17 connects to Pin 6 of P6.
- Pin 7 of P17 connects to Pin 7 of P6.
- Pin 8 of P17 connects to Pin 8 of P6.



### Trace connector

VDBG

P25

1 2

3 4

5 6

7 8

9 10

11 12

13 14

15 16

17 18

19 20

SWDIO

SWDCLK

SWO

RESET

TRACECLK

TRACEDATA0

TRACEDATA1

TRACEDATA2

TRACEDATA3

Pin Header 2x10, 1.27mm

Not mounted

Debug IN Connector

VDBG VDD VDD\_nRF

SB59

SB60

P18

1 2

3 4

5 6

7 8

9 10

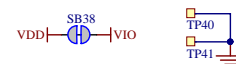
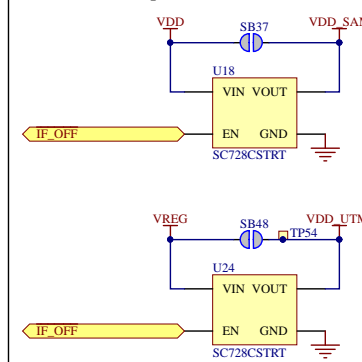
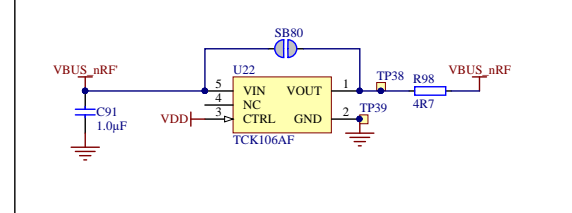
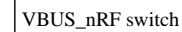
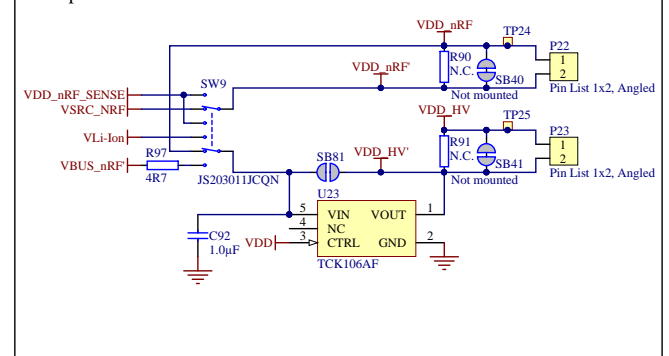
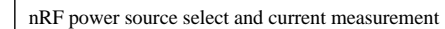
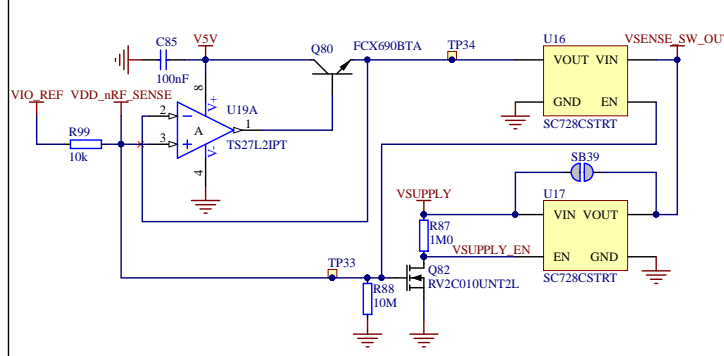
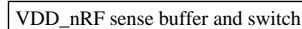
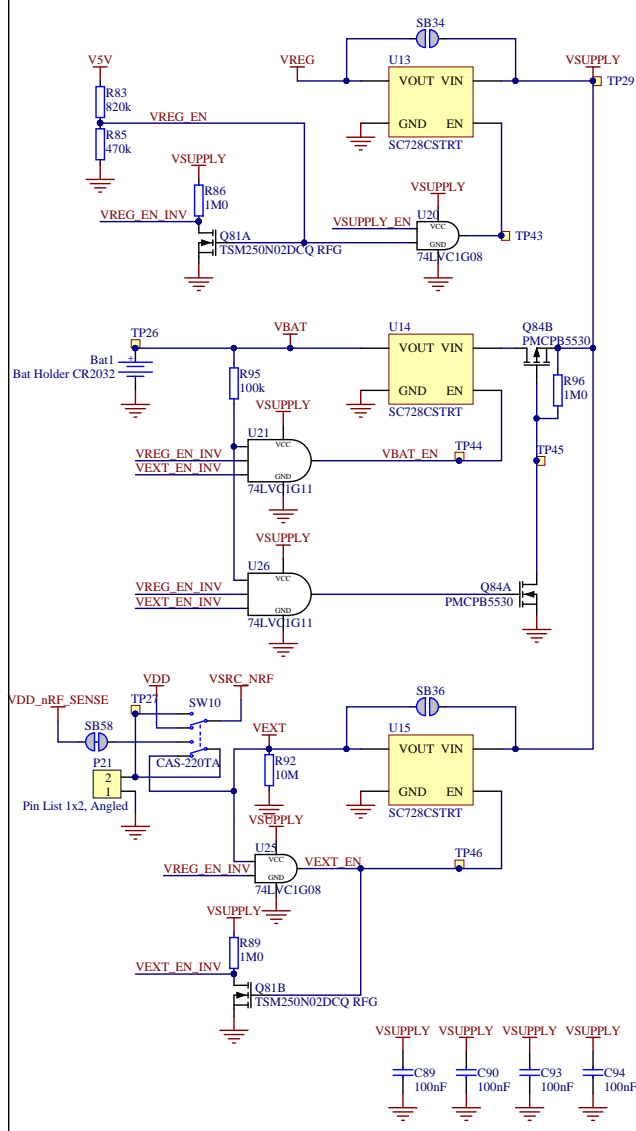
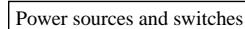
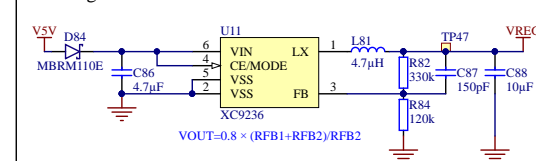
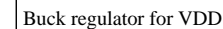
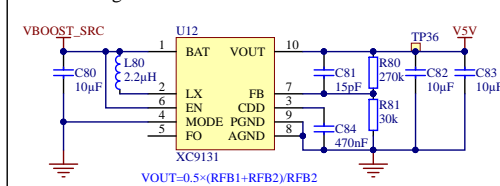
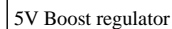
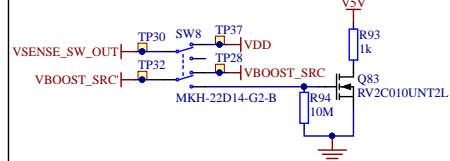
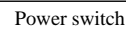
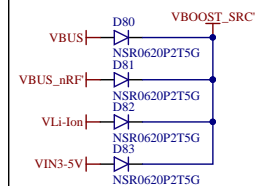
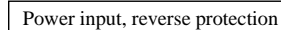
SWDIO

SWDCLK

SWO

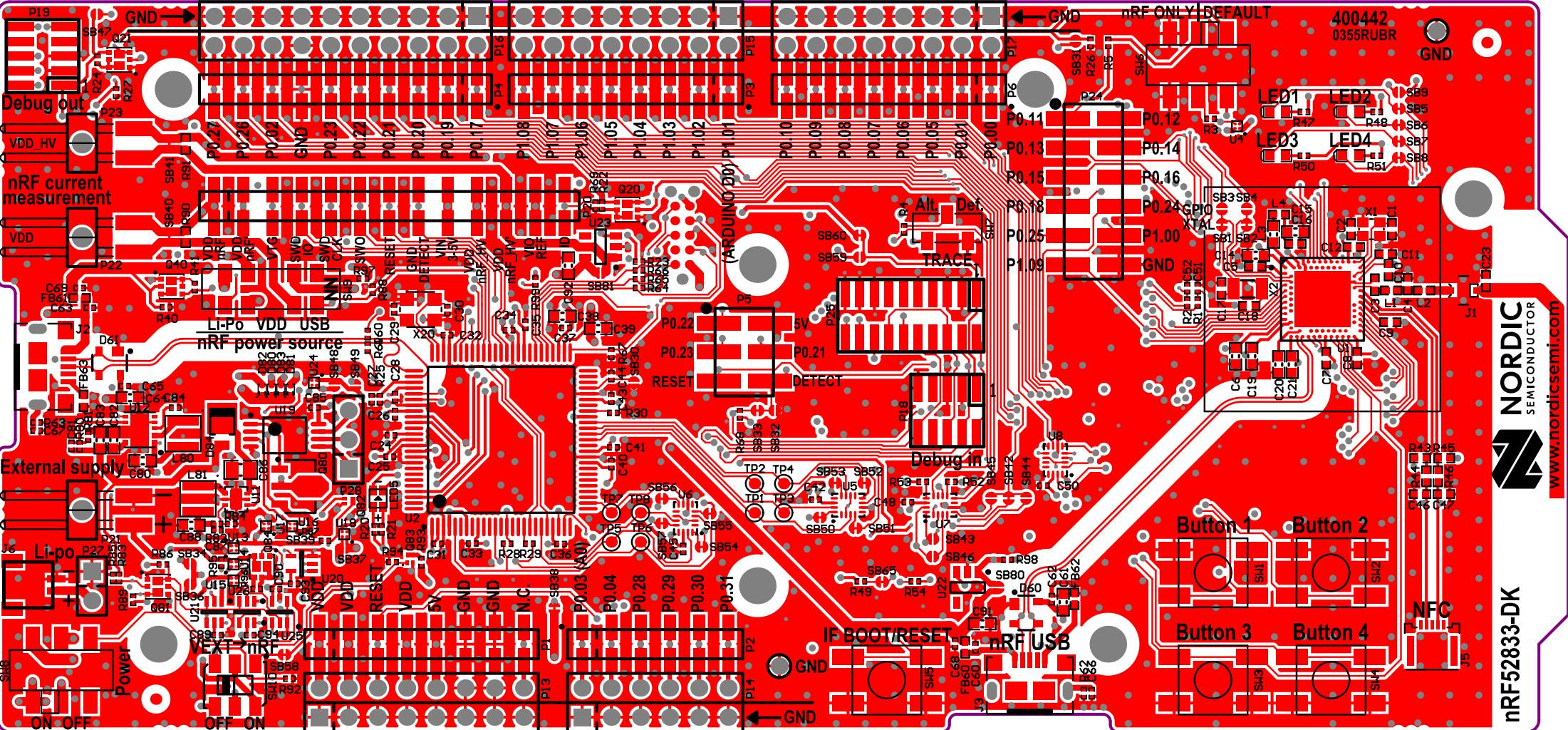
RESET

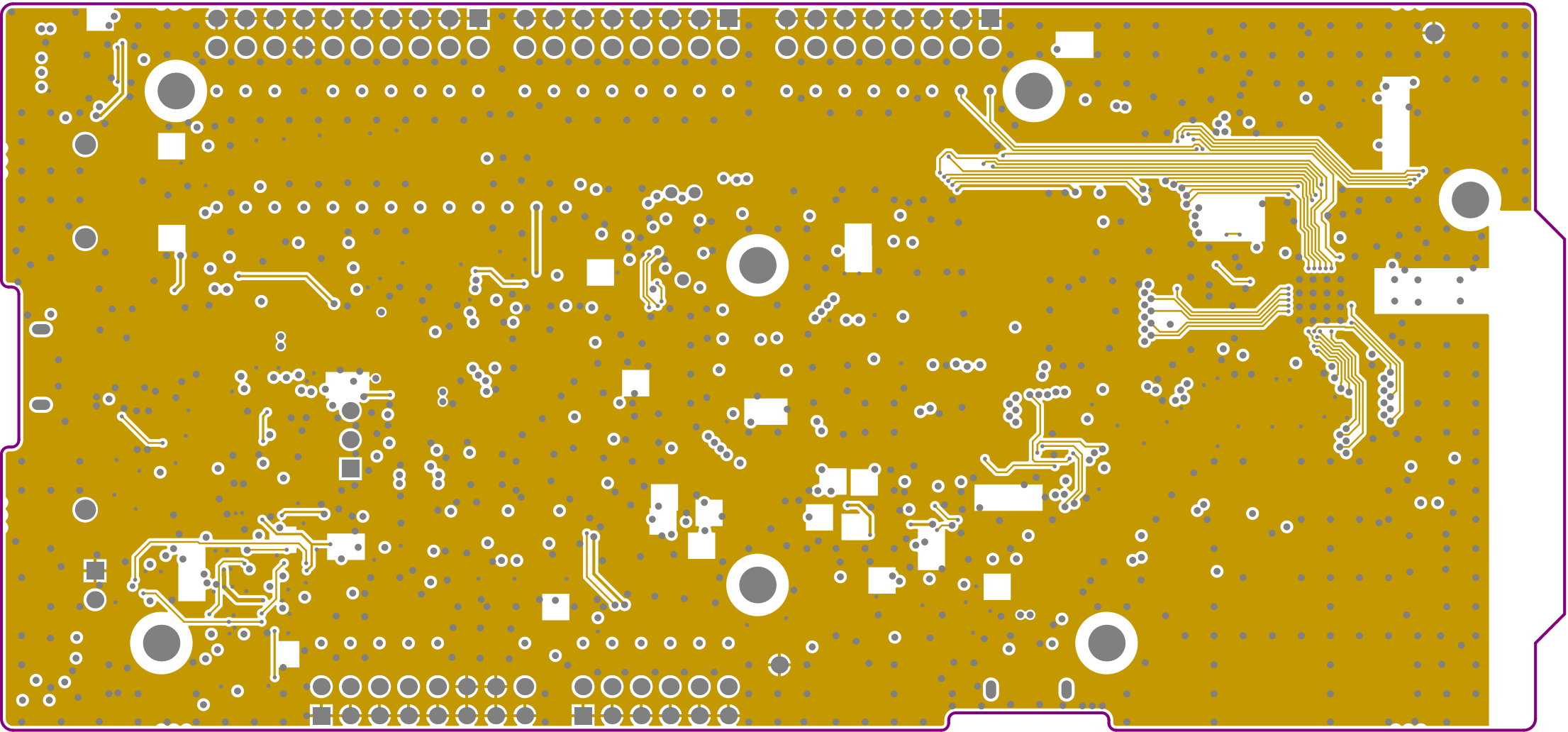
Pin Header 2x5, 1.27mm

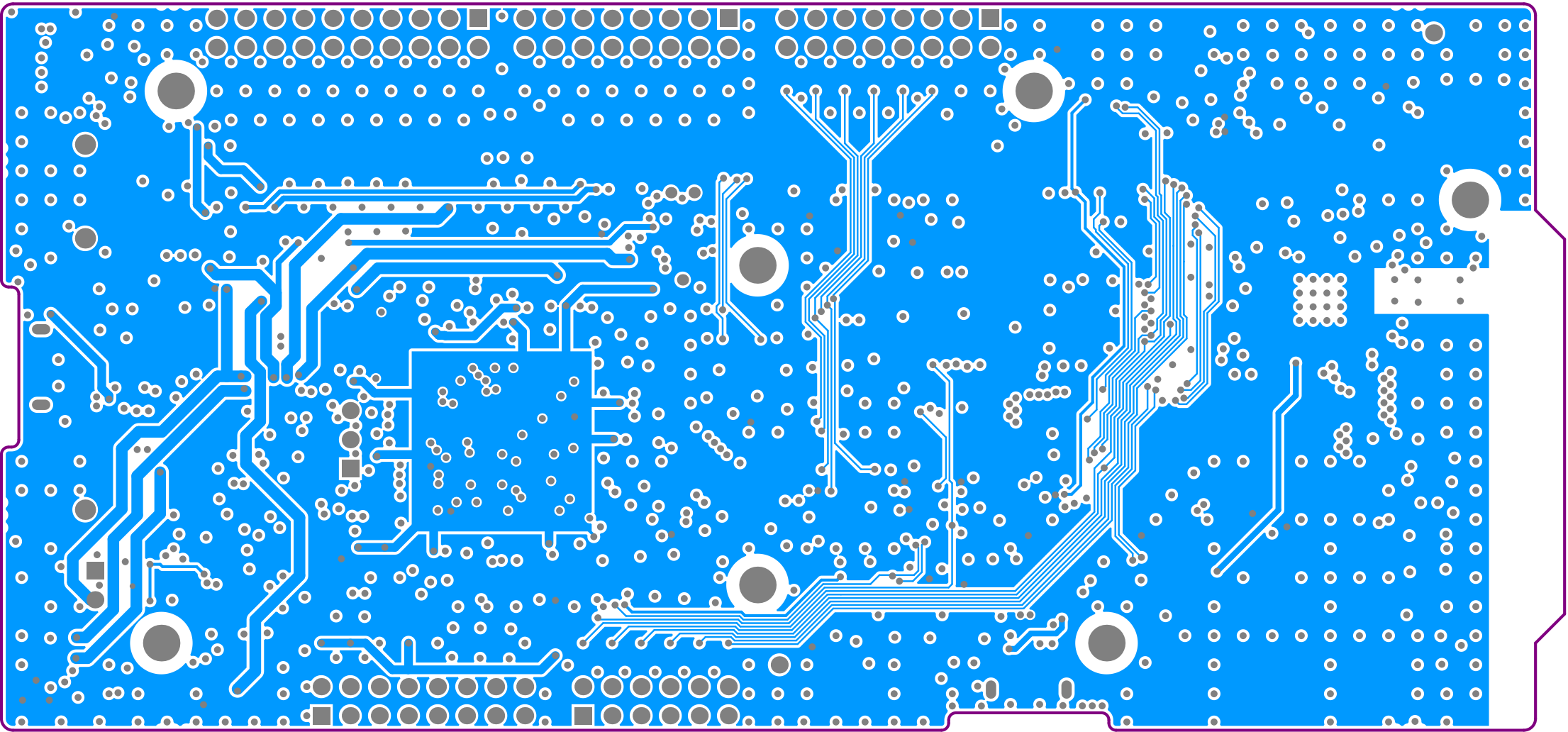
PCA10100 - Power Supply

Size A3	Project Number 4452	Revision 0.9.0
Date: 2019.09.05		Sheet 7 of 7
File: pca10100_sheet7_power_supply.SchDoc		Drawn By: RUBR











Default

Wire bridge

2M

JBRACE

HW		
CTG	b0*03	b0*04
Enfunc	b0*13	b0*10
Enfunc	b0*14	b0*103

b010	LED 4	SEB 0	
b012	LED 3	SEB 0	
b014	LED 2	SEB 0	
b013	LED 1	SEB 0	
b052	Bulb002		
b054	Bulb003		
b013	Bulb004		
b014	Bulb004		
b011	X13	SEB 0	
b010	X11	SEB 0	

GPIO	Function	Snout	HW
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GPIO	Function	HW
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