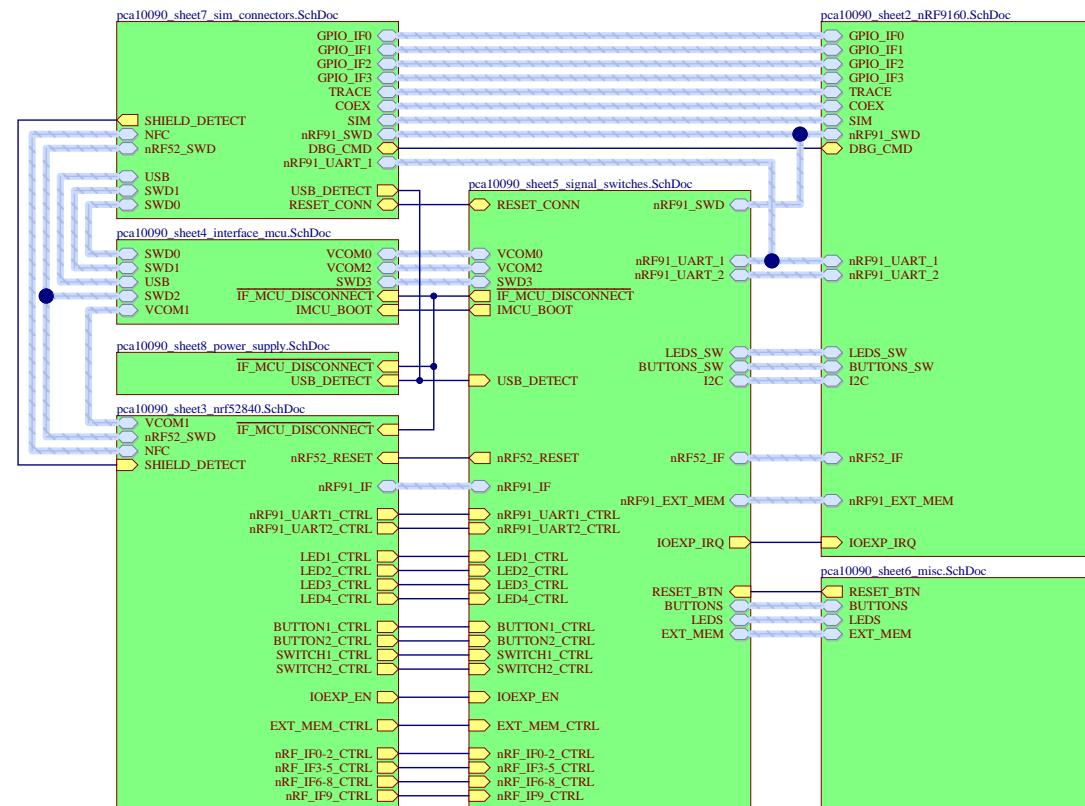


Nordic Semiconductor ASA

nRF9160 Development Kit (PCA10090)

- A Sheet 1: Connections
- B Sheet 2: nRF9160
- C Sheet 3: nRF52840
- D Sheet 4: Signal Switches
- B Sheet 5: Interface MCU
- C Sheet 6: Buttons and LEDs
- C Sheet 7: SIM & Connectors
- D Sheet 8: Power Supply

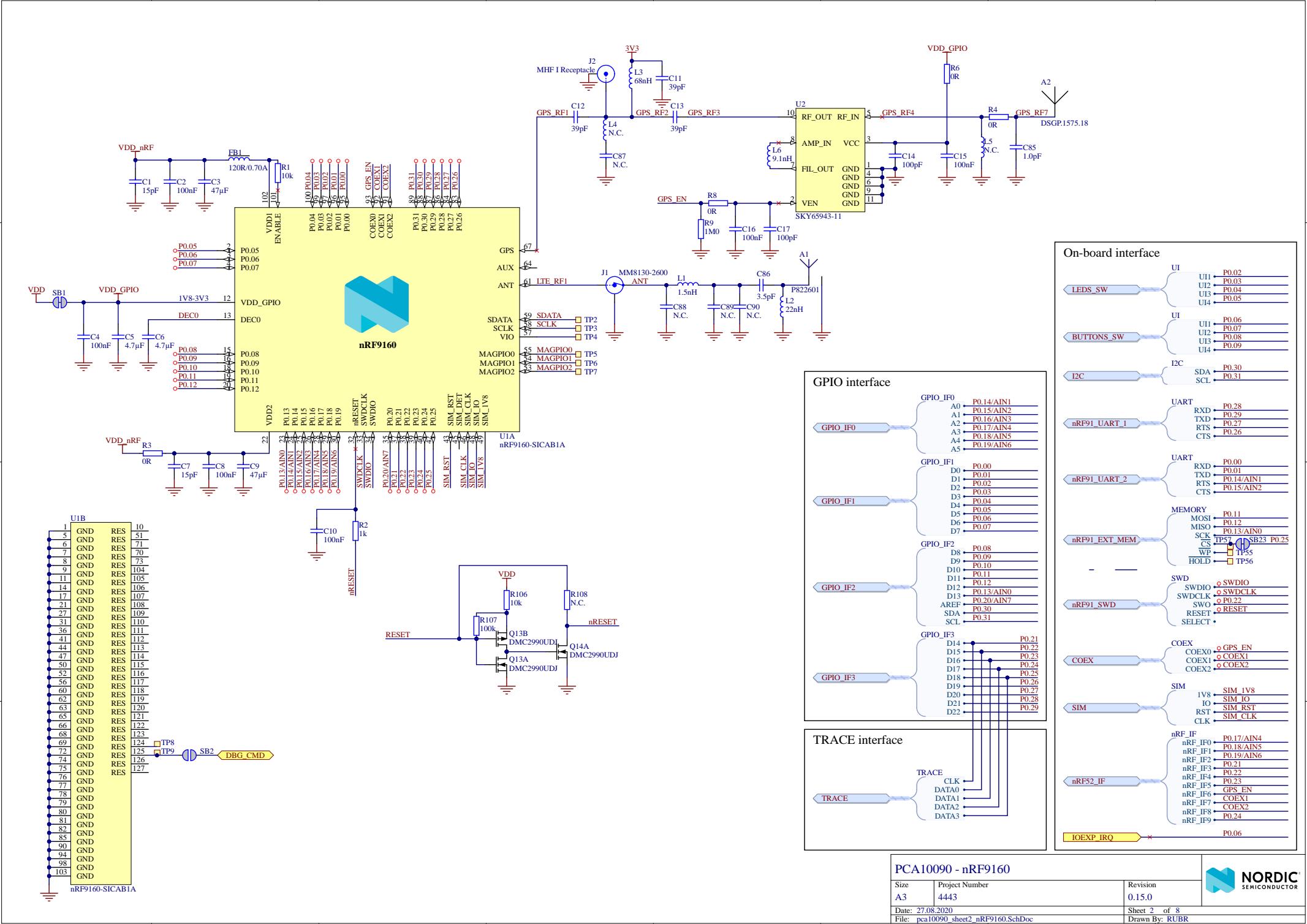


The No ERC object is a design directive.
This directive is placed on a node in the circuit to suppress harmless warnings and/or error violation conditions that are detected when the schematic project is compiled.

PCA10090 - Connections

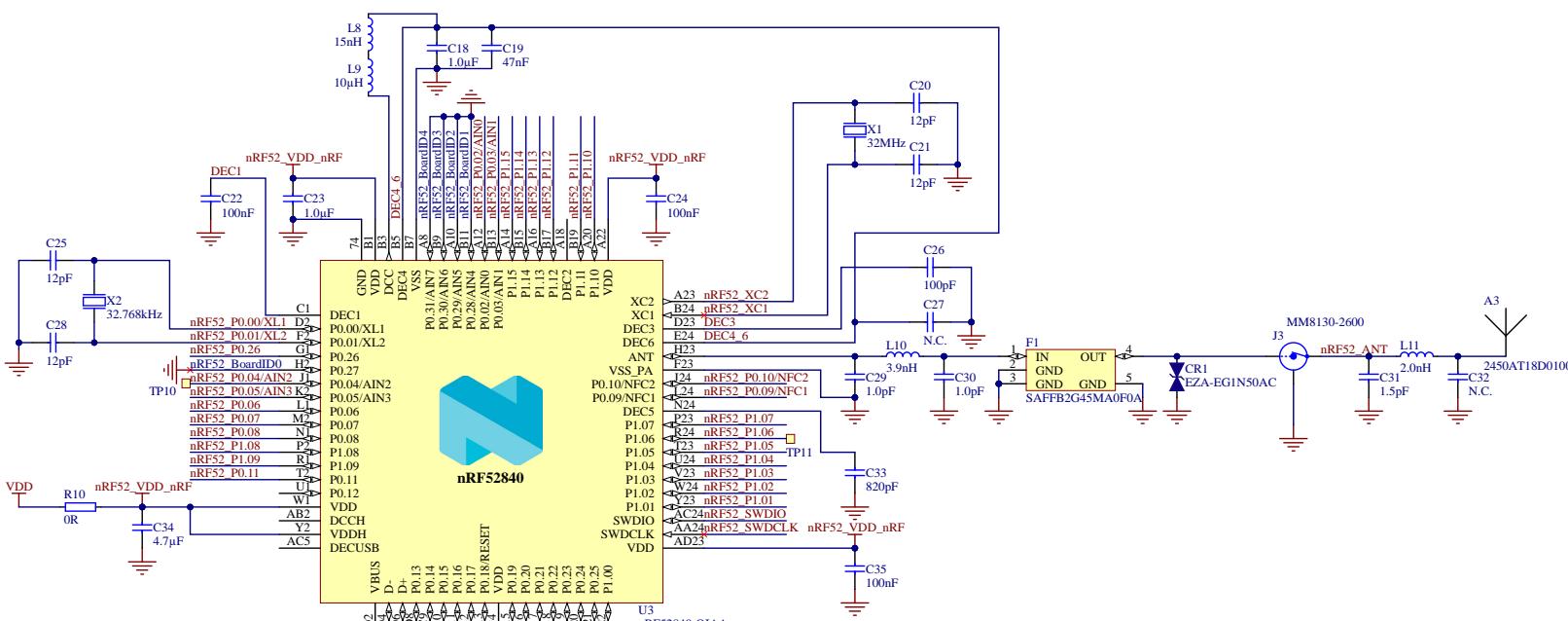
Size	Project Number	Revision
A3	4443	0.15.0
Date:	27.03.2020	Sheet 1 of 8
File:	pca10090_sheet1_connections.SchDoc	Drawn By: RUBR





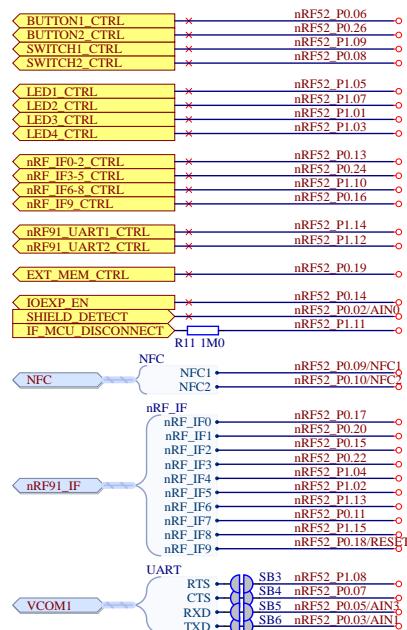
A

A

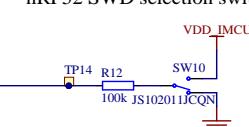


B

B



nRF52 SWD selection switch



PCA10090 - nRF52840

Size Project Number

A3 4443

Revision

0.15.0

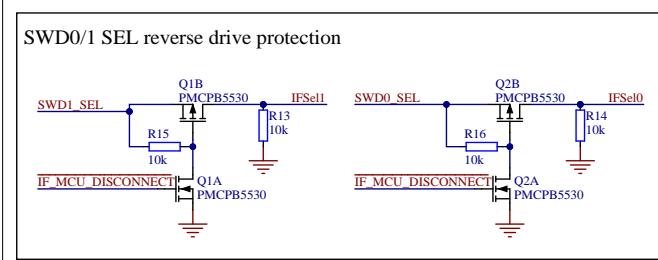
Date: 16.06.2020

Sheet 3 of 8

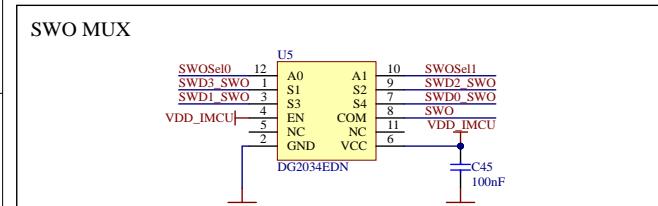
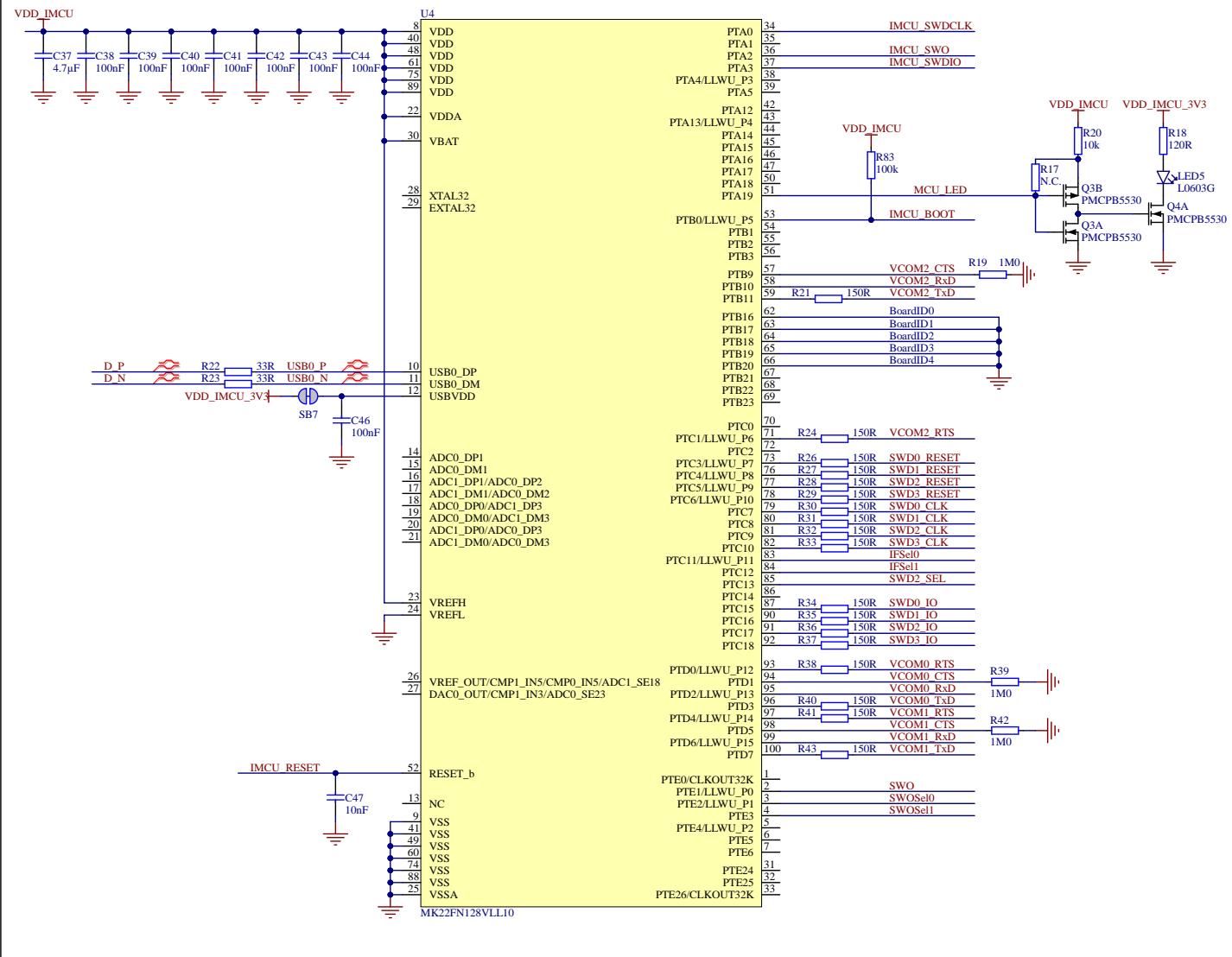
File: pca10090_sheet3_nrf52840.SchDoc



Drawn By: RUBR

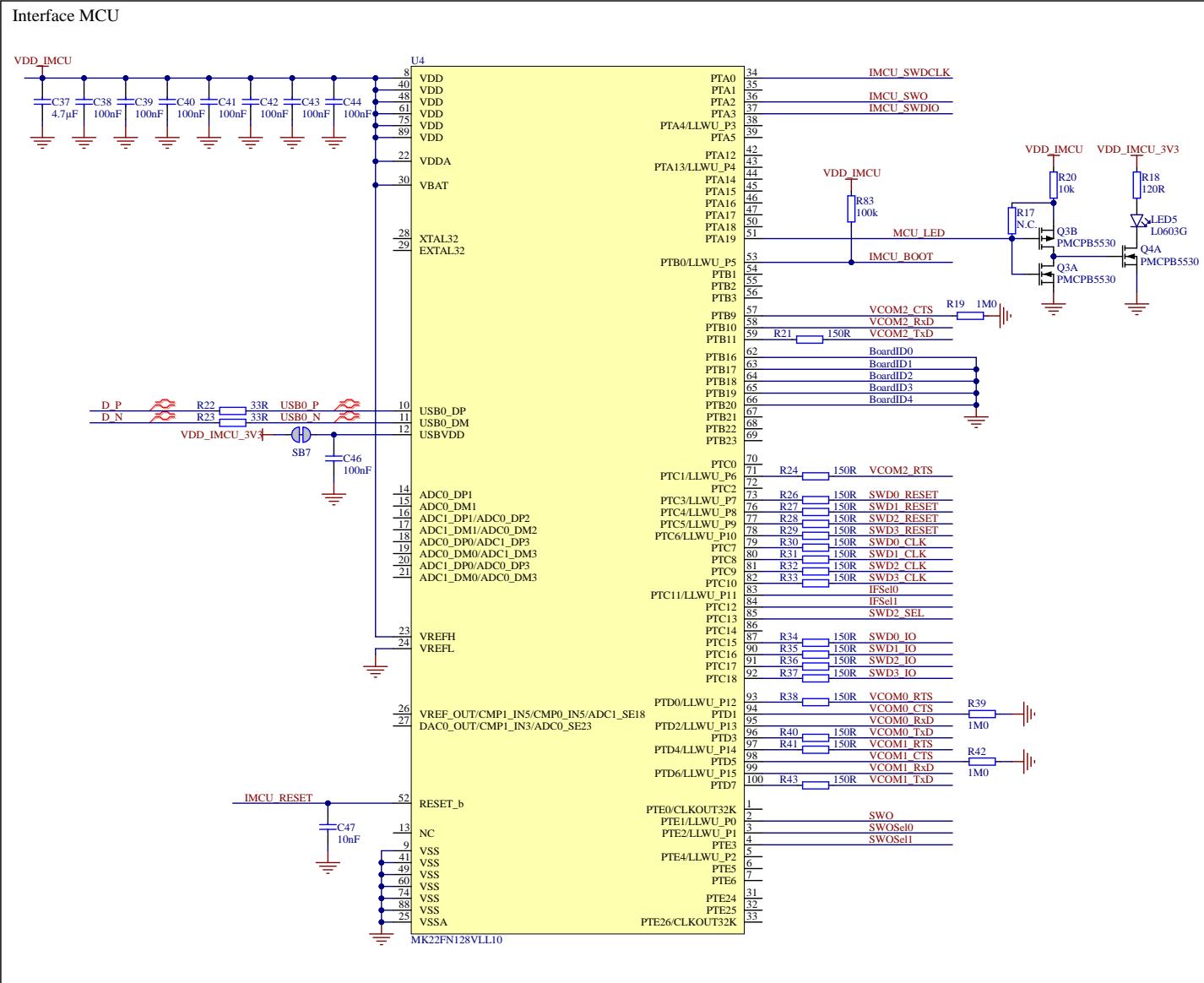
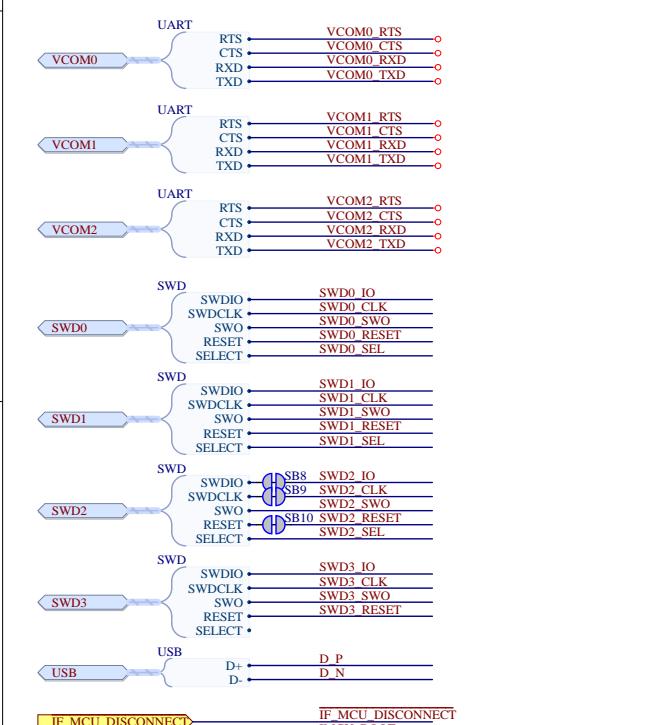
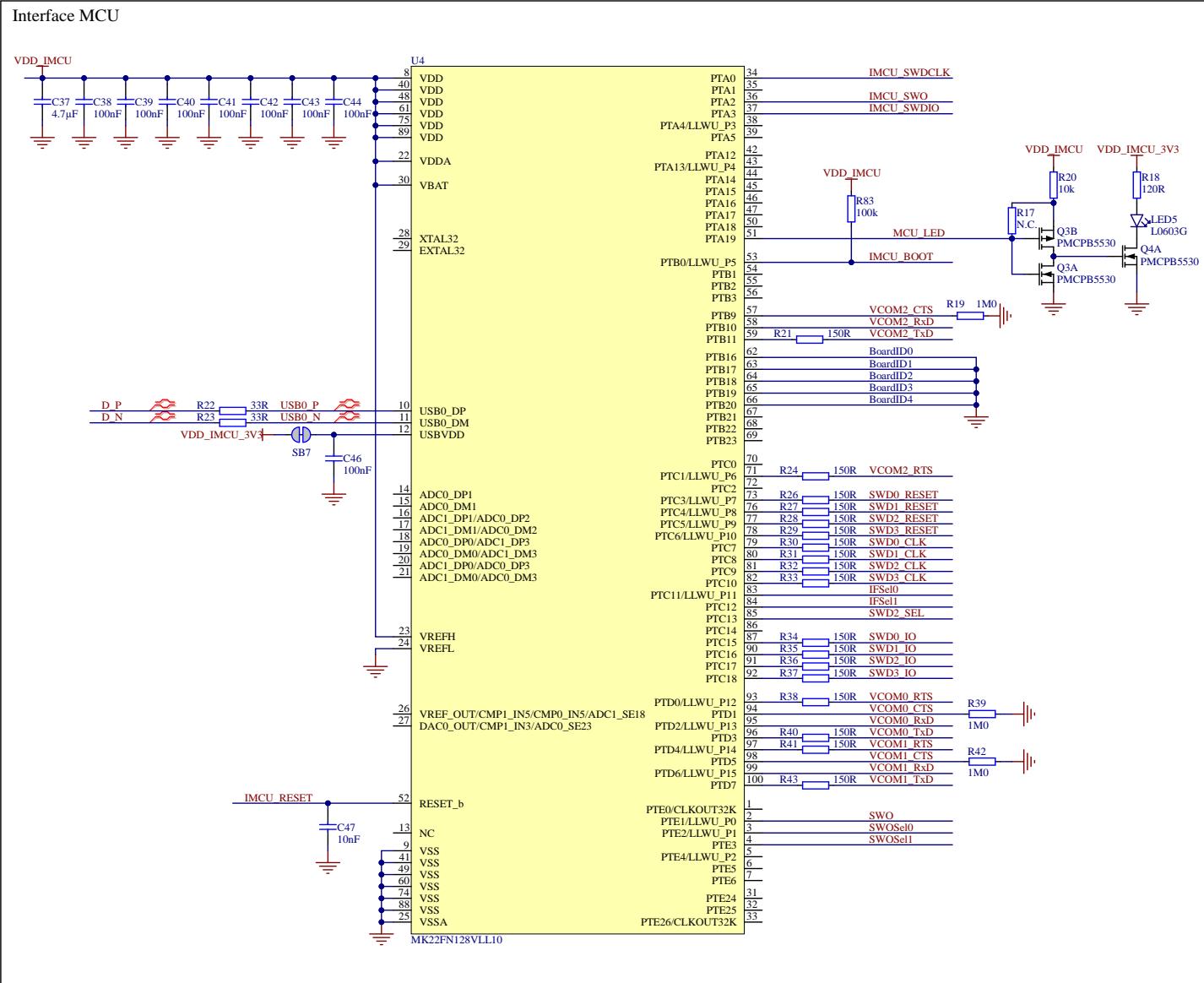
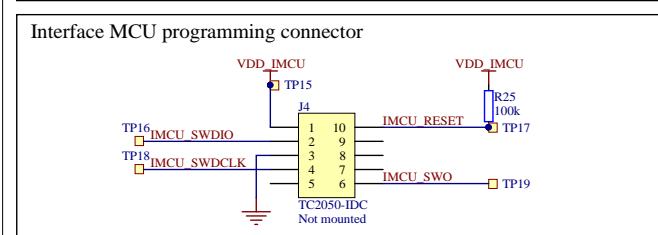


Interface MCU



This detailed schematic diagram illustrates the connection of the MK22FN128VLL10 chip to the Interface MCU. It shows the mapping of various pins to internal logic blocks (U4, U5, U6) and external components. Key connections include:

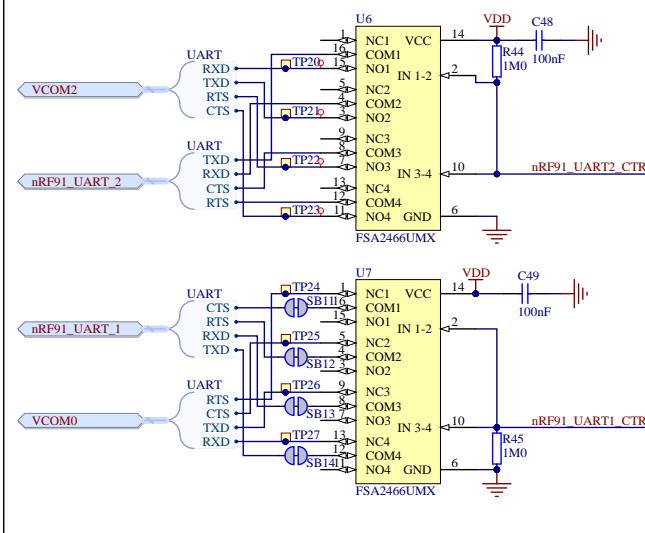
- VDD_IMCU**: Power supply connection.
- VDDA**: Analog power supply connection.
- VBAT**: Backup battery connection.
- XTAL32** and **EXTAL32**:晶振连接.
- USB0_DP**, **USB0_DM**: USB port connections.
- VREFH** and **VREFL**: Reference voltage connections.
- IMCU_RESET**: Reset signal connection.
- IMCU_SWCLK**: Software clock output.
- IMCU_SWO** and **IMCU_SWDIO**: Software output and software input connections.
- MCU_LED**: Microcontroller LED connection.
- IMCU_BOOT**: Microcontroller boot connection.
- VCOM2_CTS**, **VCOM2_RxD**, **VCOM2_TxR**: Serial communication connections.
- BoardID0** through **BoardID4**: Board identification signals.
- VCOM0_RTS**, **VCOM0_CTS**, **VCOM0_RxD**, **VCOM0_TxR**: Serial communication connections.
- VCOM1_RTS**, **VCOM1_CTS**, **VCOM1_RxD**, **VCOM1_TxR**: Serial communication connections.
- IFSel0** through **IFSel4**: Interface selection signals.
- SWD0_RESET**, **SWD1_RESET**, **SWD2_RESET**, **SWD3_RESET**: Software reset signals.
- SWD0_CLK**, **SWD1_CLK**, **SWD2_CLK**, **SWD3_CLK**: Software clock signals.
- SWD0_IO**, **SWD1_IO**, **SWD2_IO**, **SWD3_IO**: Software I/O signals.



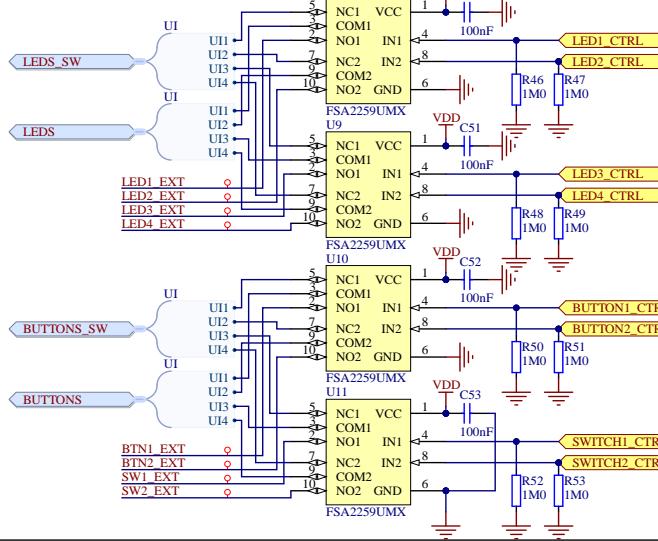
PCA10090 - Interface MCU		
Size	Project Number	Revision
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Date:	16.06.2020	Sheet 4 of 8
File:	pca10090_sheet4_interface.mcu.SchDoc	Drawn By: RUBR



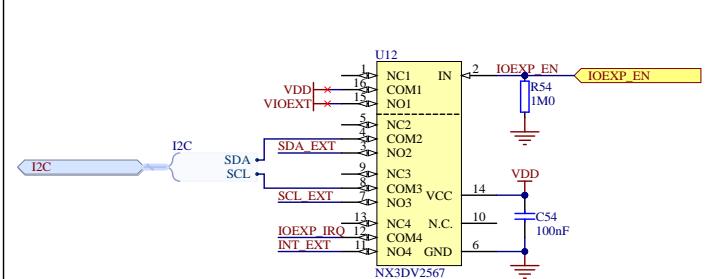
UART control



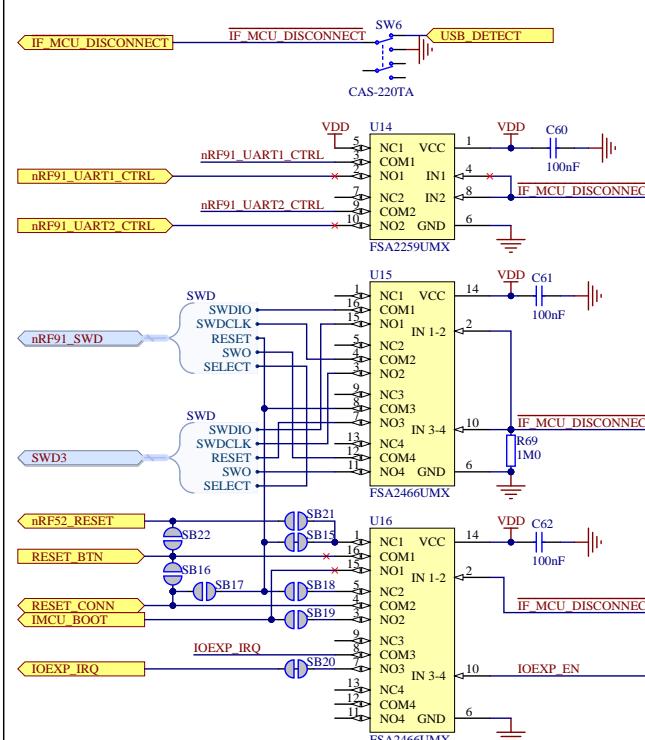
LED, button and switch control



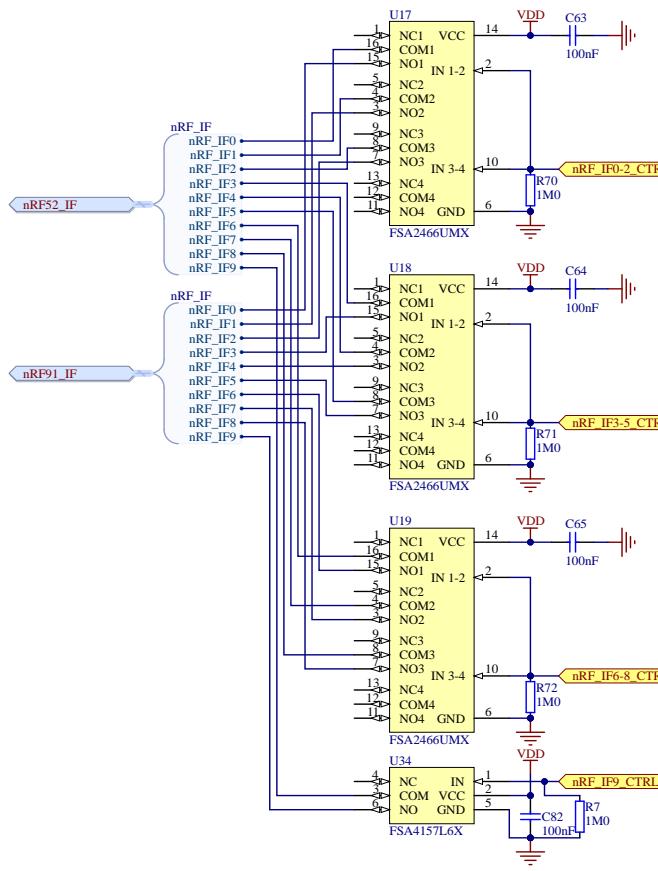
IO expander for LEDs, buttons and switchrs



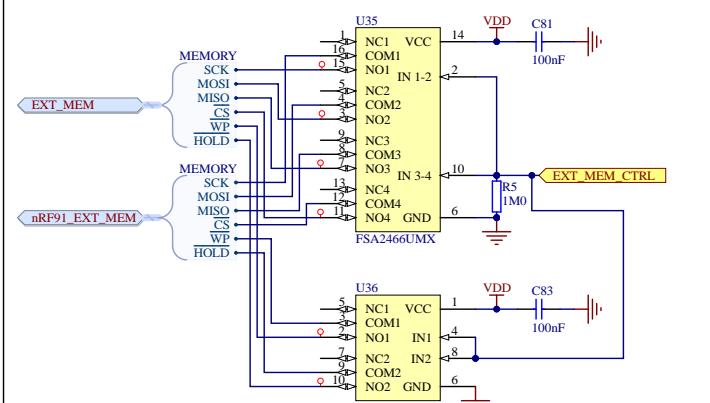
Interface MCU disconnect switches



nRF interface and COEX control



SPI memory control

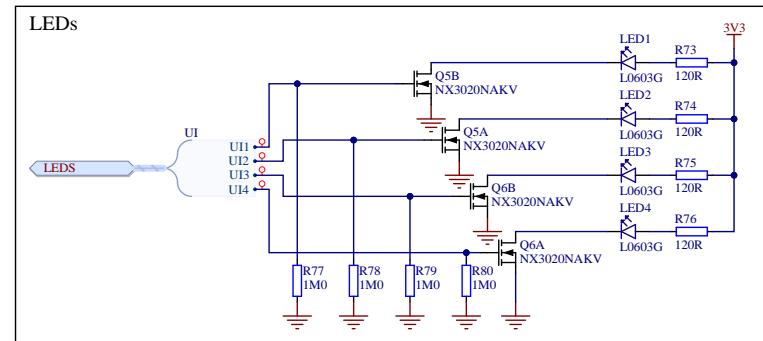


PCA10090 - Signal switches

Size A3	Project Number 4443	Revision 0.15.0
Date: 27.08.2020		Sheet 5 of 8
File: pca10090_sheet5_signal_switches.SchDoc		Drawn By: RUBR

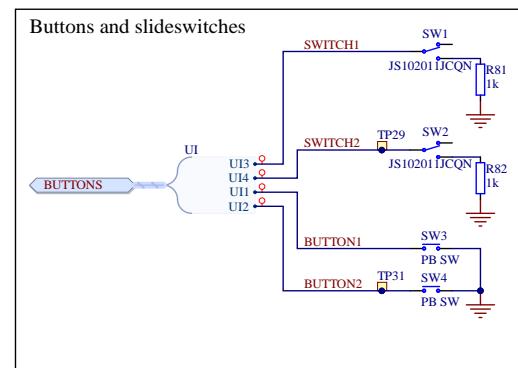
A

A



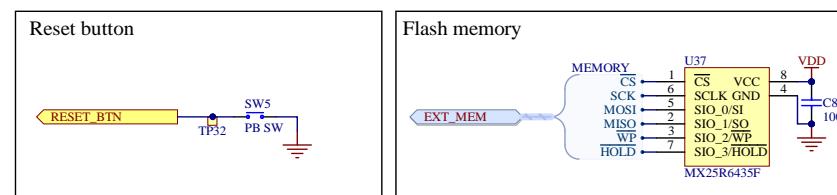
B

B



C

C



D

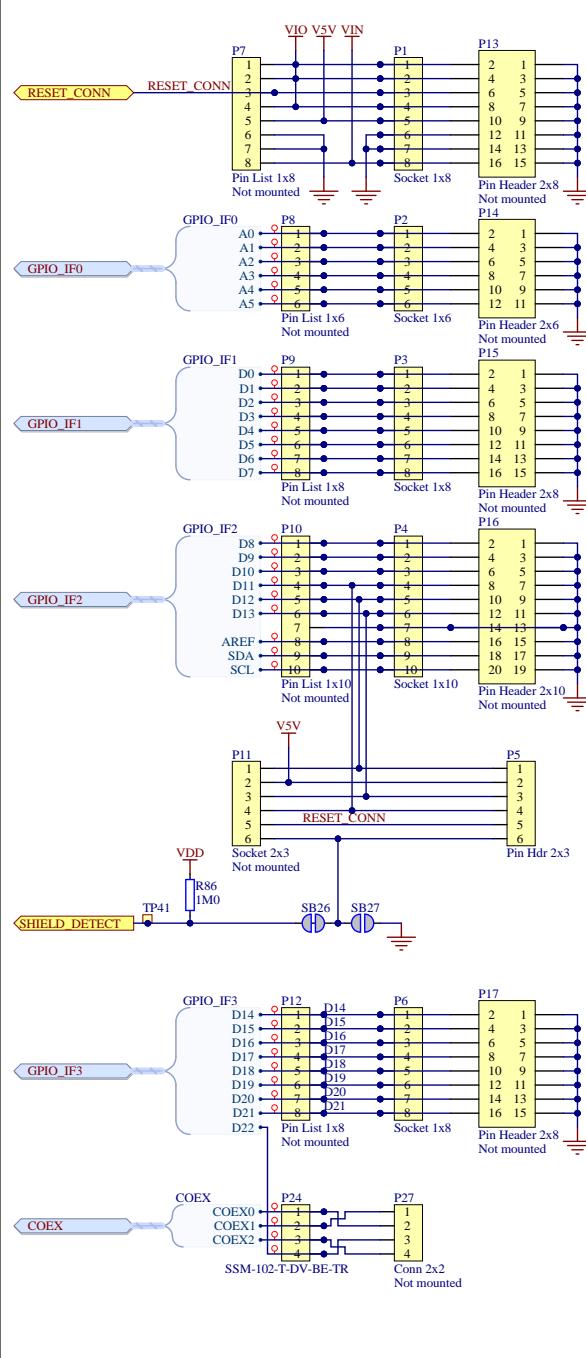
D

PCA10090 - Misc

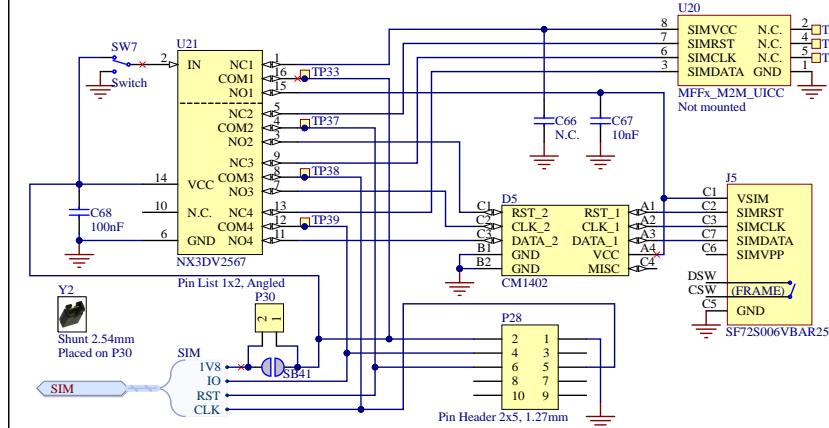
Size	Project Number	Revision
A3	4443	0.15.0
Date: 27.08.2020		Sheet 6 of 8
File: pca10090_sheet6_misc.SchDoc		Drawn By: RUBR



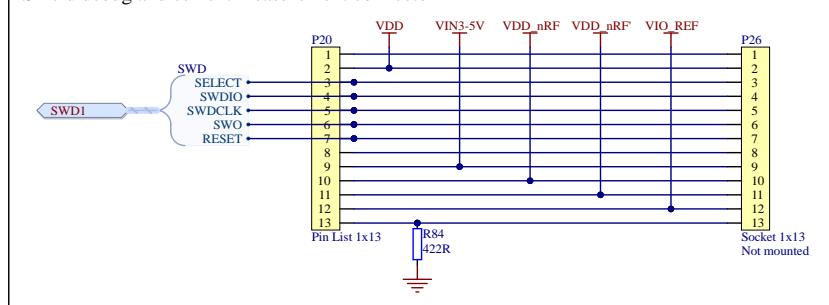
Interface connectors



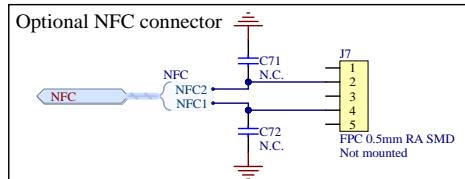
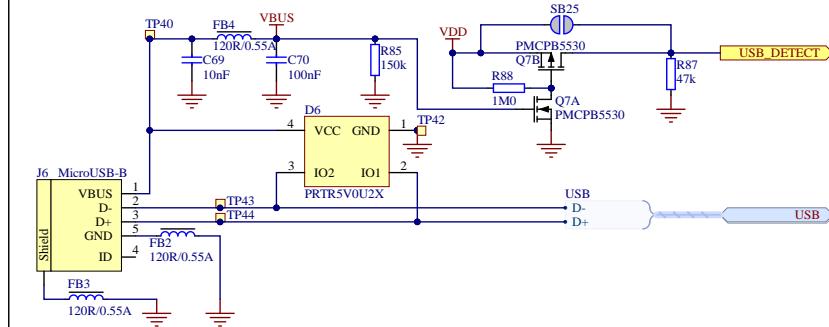
SIM card connector, eSIM and selection switch



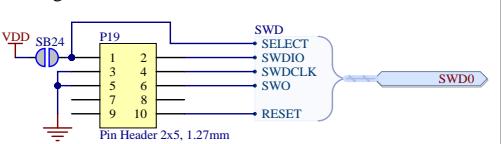
Shield debug and current measurement connector



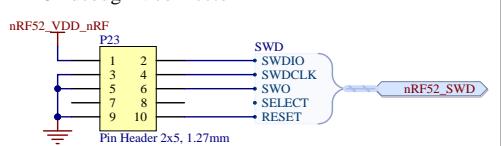
USB connector and USB detect



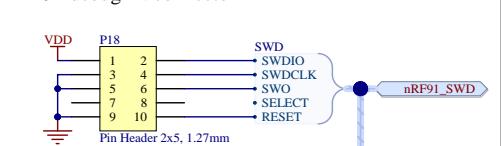
Debug OUT connector



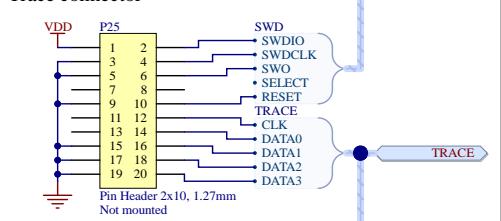
nRF52 debug IN connector



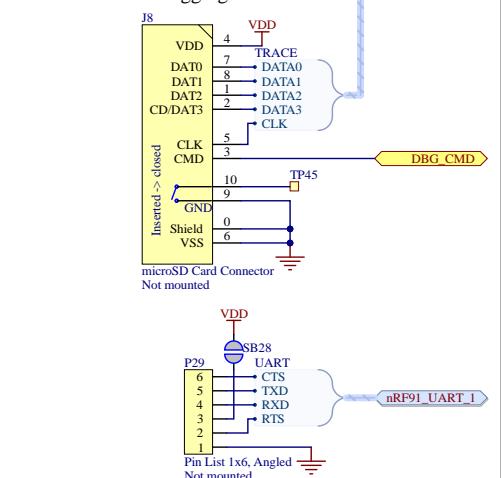
nRF91 debug IN connector



Trace connector

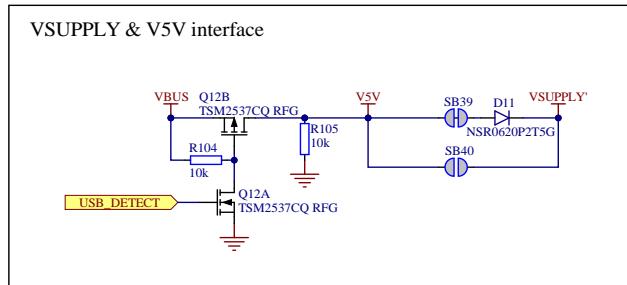
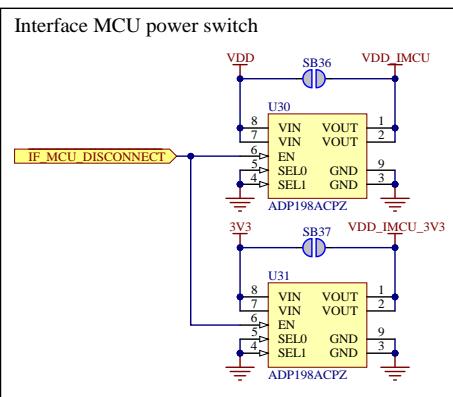
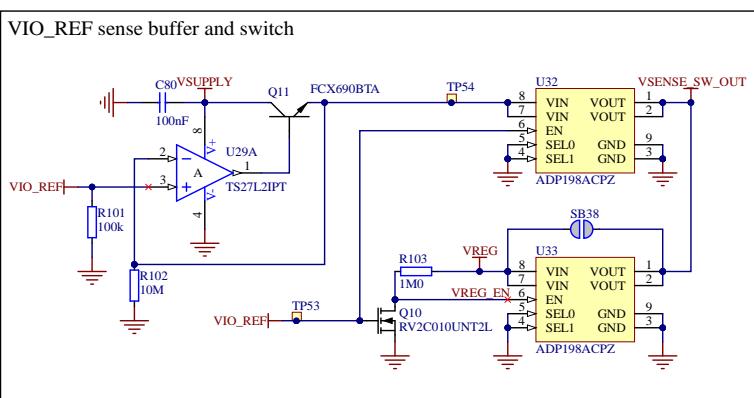
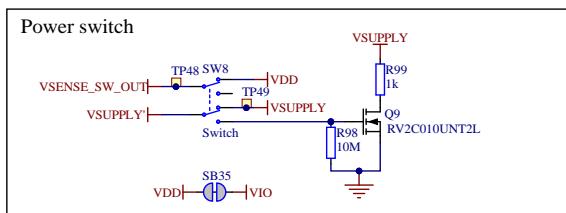
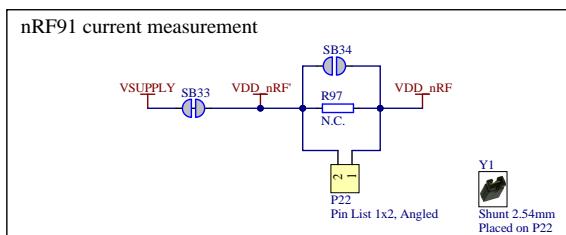
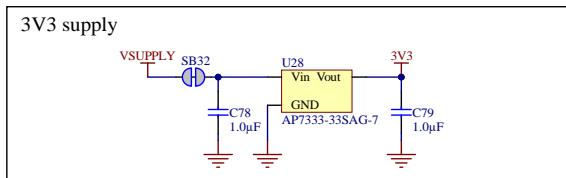
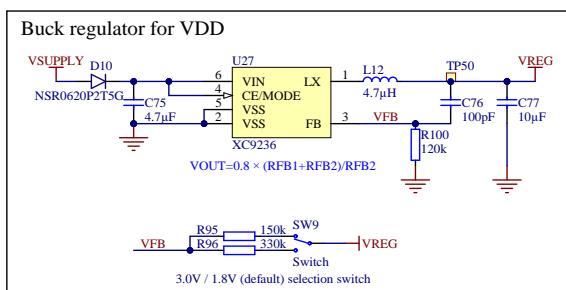
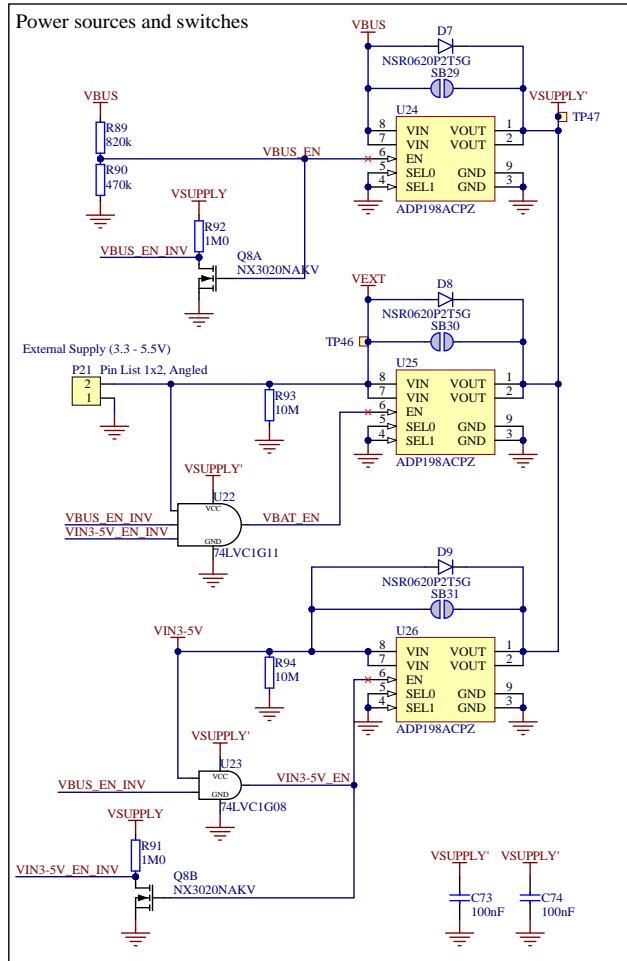


Nordic internal debugging interface



PCA10090 - SIM & Connectors

Size	Project Number	Revision
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Date:	27.08.2020	Sheet 7 of 8
File:	pca10090_sheet7_sim_connectors.SchDoc	Drawn By: RUBR



Instrument ground

PCA10090 - Power Supply		
Size	Project Number	Revision
A3	4443	0.15.0
Date: 16.06.2020	Sheet 8	of 8
File: pca10090_sheet8_power_supplySchDoc	Drawn By:	PUBB

