Nordic Semiconductor ASA

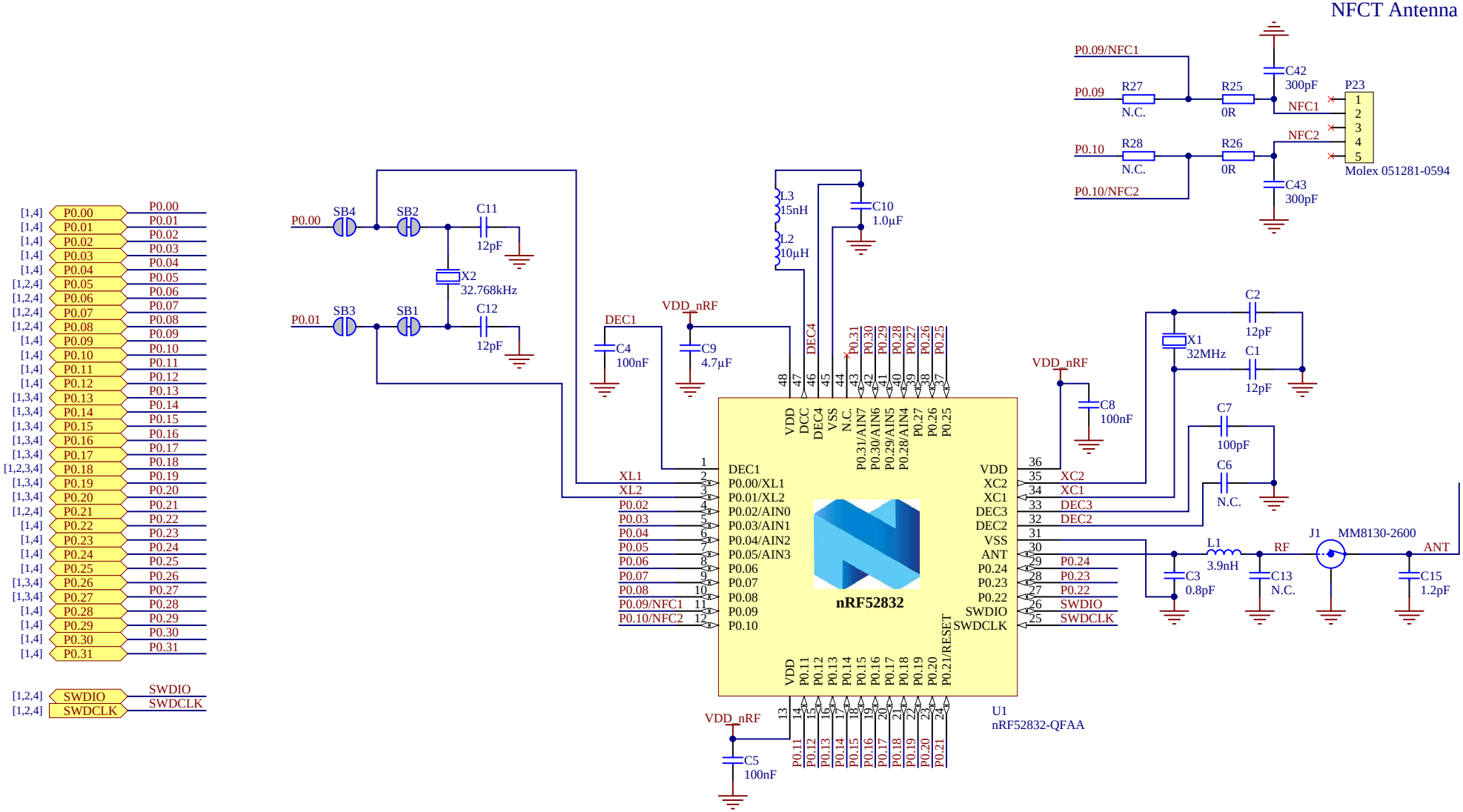
nRF52832 Bluetooth Smart/ANT/2.4GHz RF Development Board (PCA10040)

Sheet 1: nRF Radio
Sheet 2: Interface MCU
Sheet 3: Buttons and LEDs
Sheet 4: Connectors
Sheet 5: Power Supply

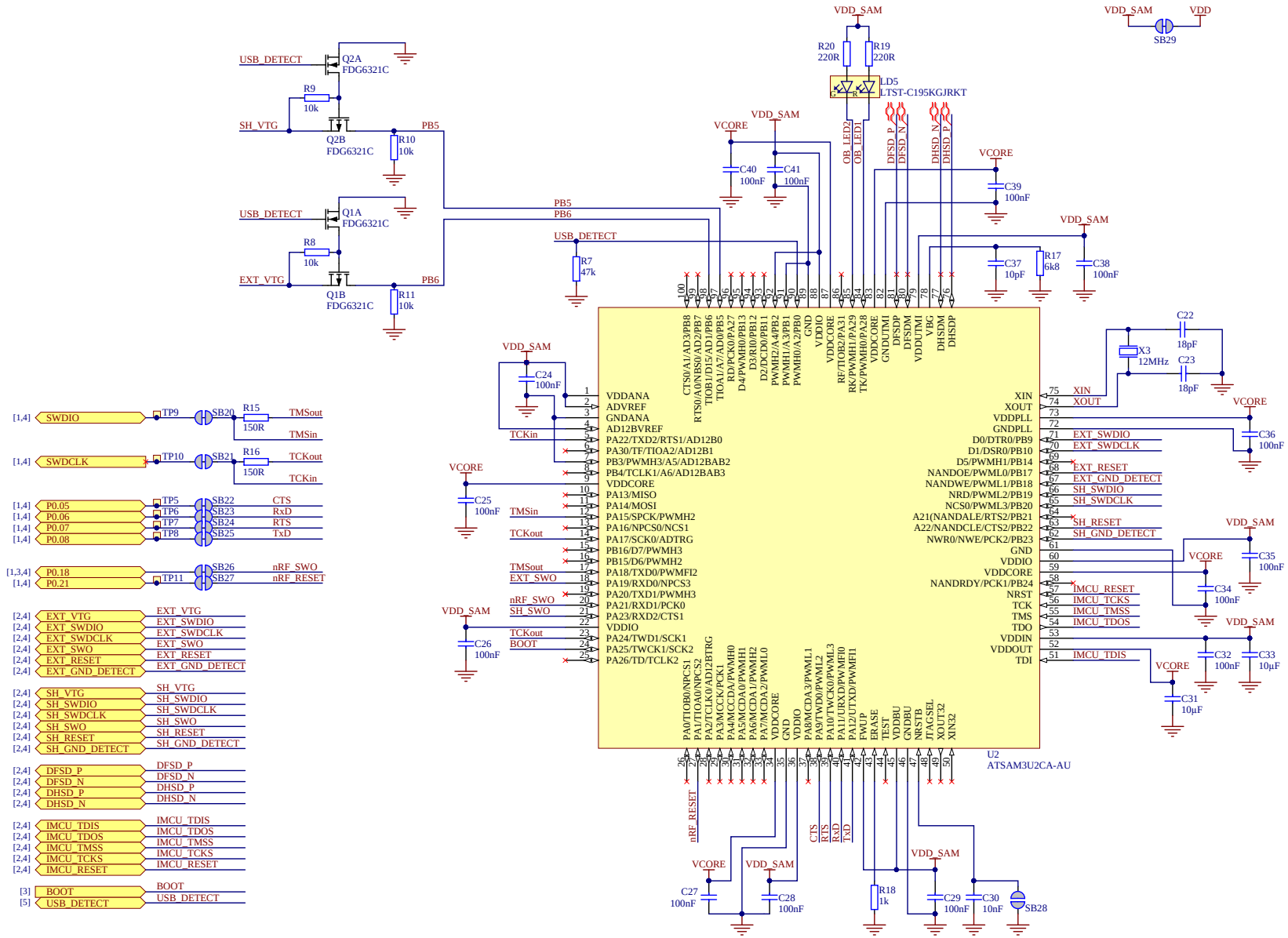
The No ERC object is a design directive.
This directive is placed on a node in the circuit to suppress reported warnings and/or error violation conditions that are detected when the schematic project is compiled.

Nordic Logo M

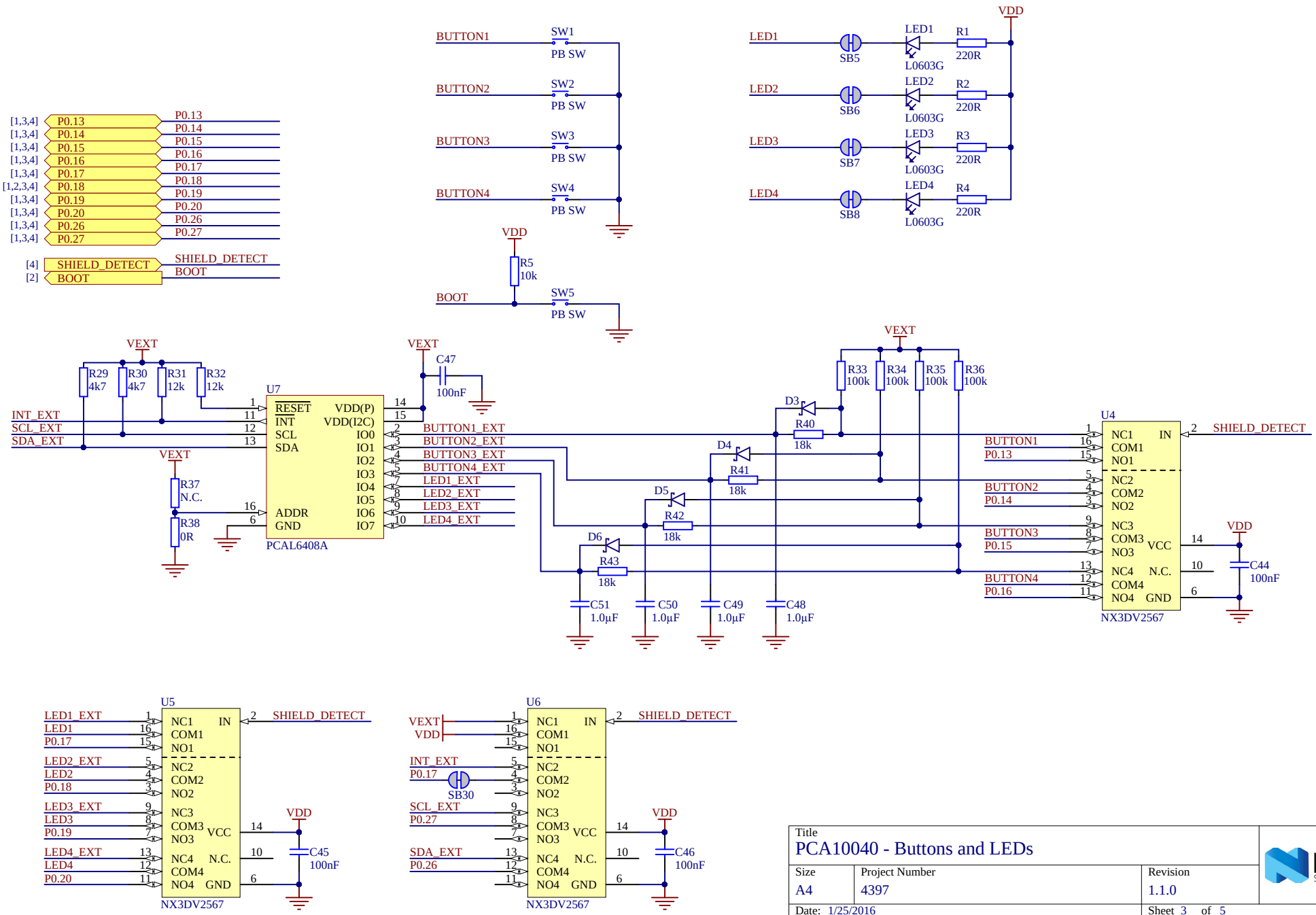
PCA10040 - Cover			NORDIC SEMICONDUCTOR
Size: A3	Project Number: 4397	Revision: 1.1.0	
Date: 1/25/2016		Sheet 0 of 5	
File: pca10040_sheet0_cover.SchDoc		Drawn By: KJP	



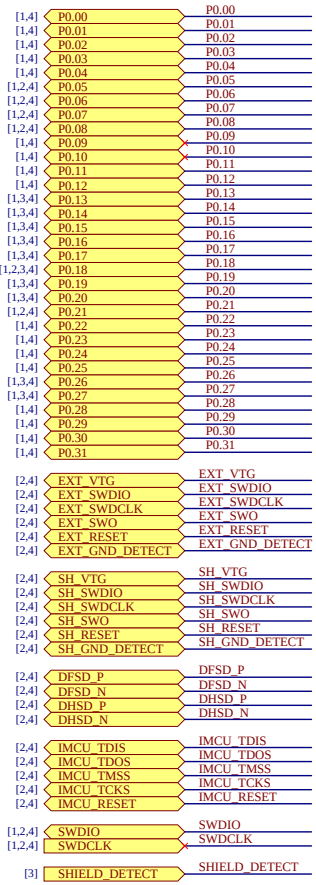
Title: PCA10040 - nRF Radio		
Size: A4	Project Number: 4397	Revision: 1.1.0
Date: 1/25/2016		Sheet 1 of 5
File: pca10040_sheet1_radio.SchDoc		Drawn By: KJP



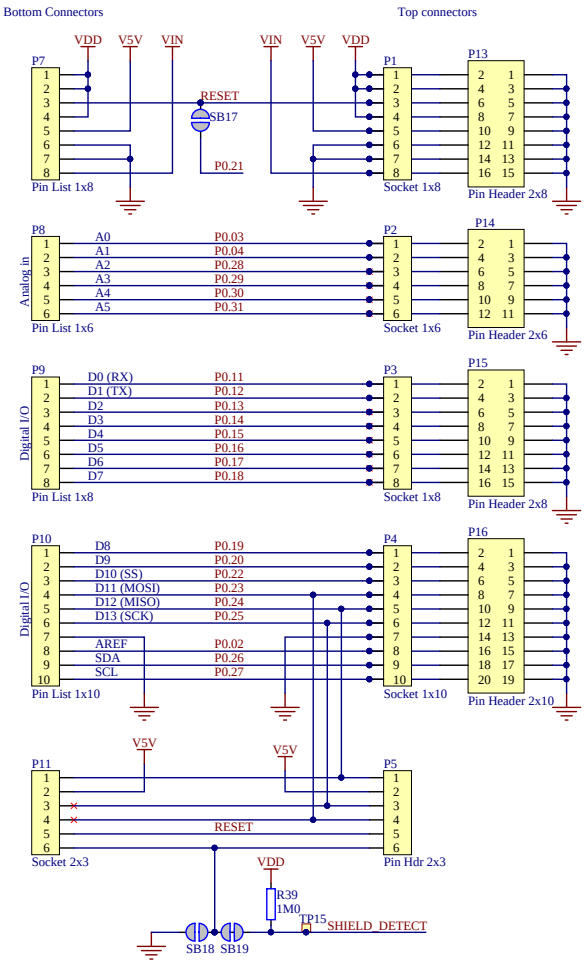
PCA10040 - Interface MCU		
Size: A3	Project Number: 4397	Revision: 1.1.0
Date: 1/25/2016		Sheet 2 of 5
File: pca10040_sheet2_interface_mcu.SchDoc		Drawn By: KJP



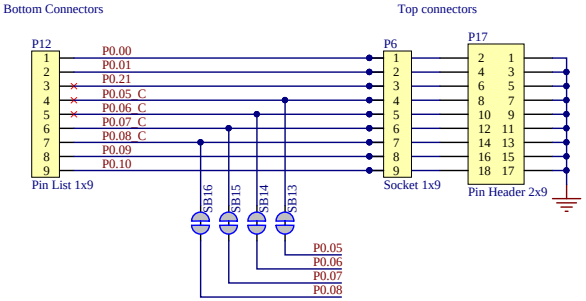
Title: PCA10040 - Buttons and LEDs		
Size: A4	Project Number: 4397	Revision: 1.1.0
Date: 1/25/2016		Sheet 3 of 5
File: pca10040_sheet3_buttons_and_leds.SchDoc		Drawn By: KJP



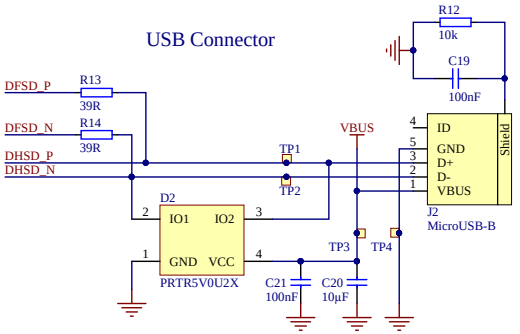
Arduino Interface Connectors



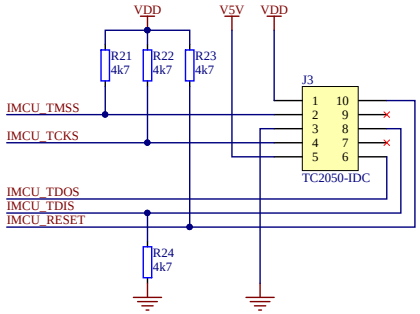
Auxiliary Connectors



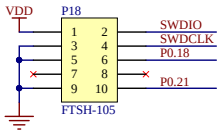
USB Connector



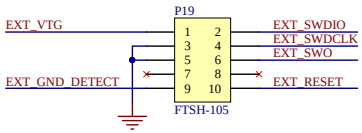
J-Link Prog Connector



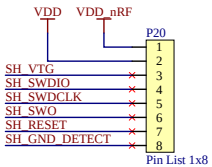
Debug IN Connector



Debug OUT Connector



Shield Debug and Current measurement Connector



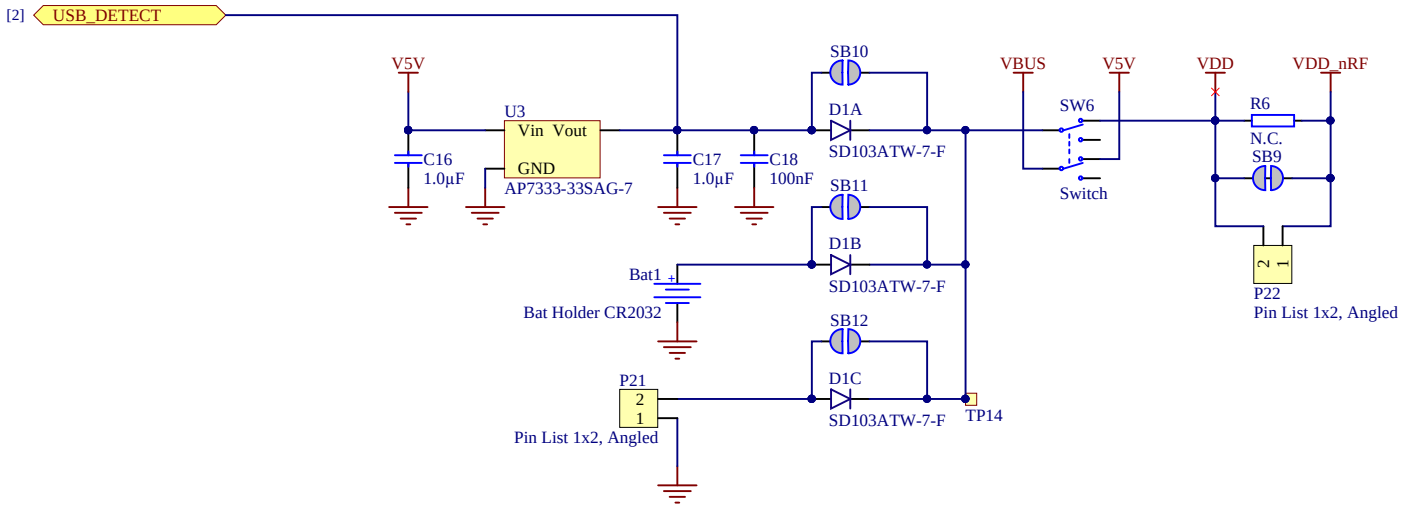
PCA10040 - Connectors		
Size: A3	Project Number: 4397	Revision: 1.1.0
Date: 1/25/2016		Sheet 4 of 5
File: pca10040_sheet4_connectors.SchDoc		Drawn By: KJP

USB power voltage regulator

Reverse voltage protection

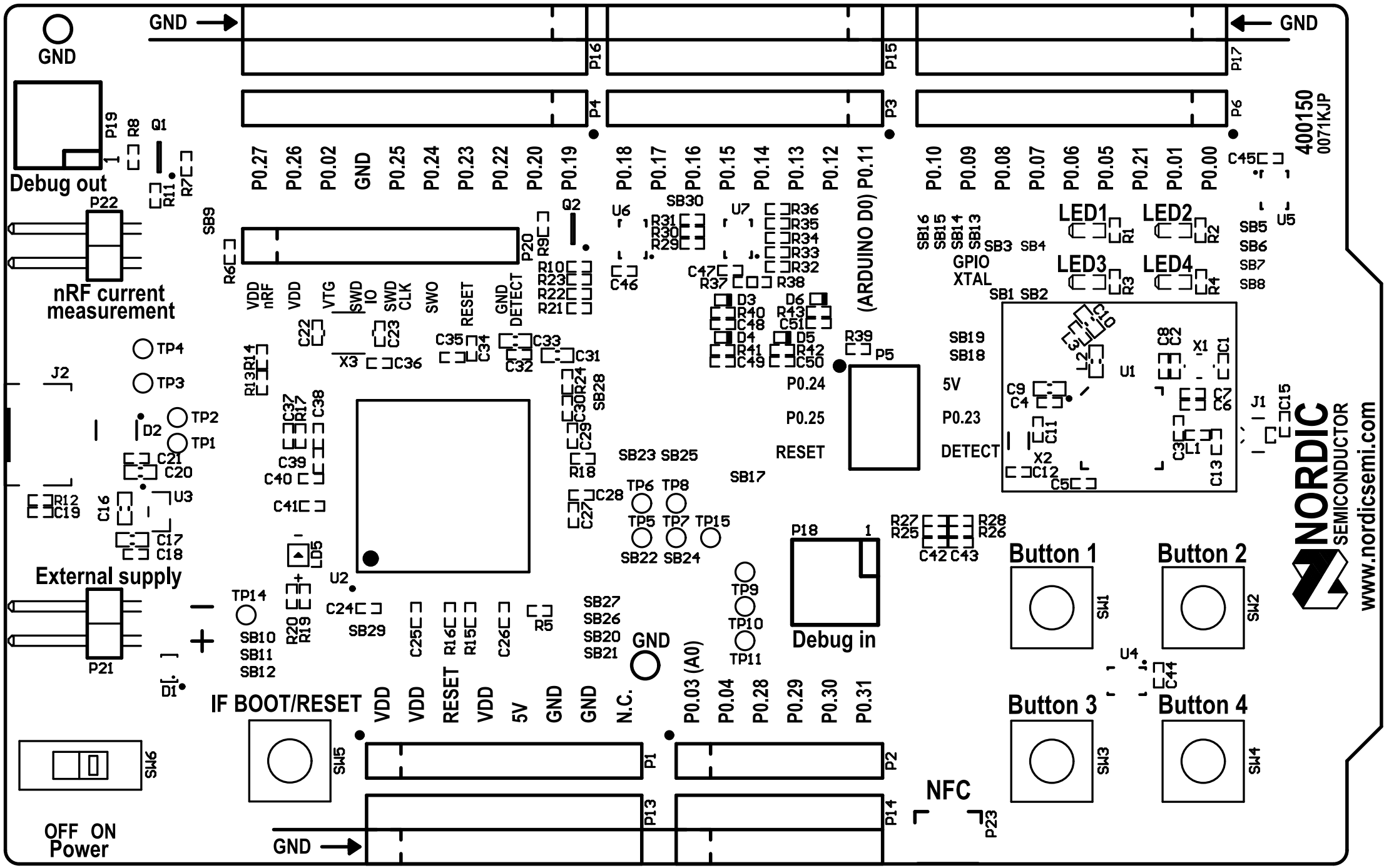
Power switch

nRF current measurement



Instrument ground

Title: PCA10040 - Power Supply		
Size: A4	Project Number: 4397	Revision: 1.1.0
Date: 1/25/2016		Sheet 5 of 5
File: pca10040_sheet5_power_supply.SchDoc		Drawn By: KJP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GND
GND
P16
P15
P17
P4
P3
P6
P19
R8
Q1
R11
R7
Debug out
P22
nRF current measurement
P0.27
P0.26
P0.02
GND
P0.25
P0.24
P0.23
P0.22
P0.20
P0.19
P0.18
P0.17
P0.16
P0.15
P0.14
P0.13
P0.12
P0.11 (ARDUINO D0)
P0.10
P0.09
P0.08
P0.07
P0.06
P0.05
P0.21
P0.01
P0.00
C45
400150
0071KJP
SB9
R6
P20
R9
Q2
U6
SB30
U7
R36
R35
R34
R33
R32
R31
R30
R29
C47
R37
R38
C46
R10
R23
R22
R21
VDD nRF
VDD
VTG
SWD IO
SWD CLK
SWO
RESET
GND DETECT
D3
D6
R40
R43
C48
C51
D4
D5
R41
R42
C49
C50
R39
P5
SB16
SB15
SB14
SB13
SB3
SB4
GPIO
XTAL
LED1
LED2
LED3
LED4
R1
R2
R3
R4
SB5
SB6
SB7
SB8
U5
SB1
SB2
C10
L2
L3
U1
X1
C8
C2
C1
C9
C4
C11
X2
C12
C5
C3
L1
C13
C7
C6
J1
C15
SB19
SB18
5V
P0.24
P0.25
RESET
P0.23
DETECT
TP4
TP3
TP2
TP1
J2
D2
C21
C20
U3
R12
C19
C16
C17
C18
C22
C23
X3
C36
C35
C34
C33
C32
C31
R13
R14
C37
R17
C38
C39
C40
C41
R24
C30
SB28
C29
C27
R18
C28
SB23
SB25
SB17
TP6
TP8
TP5
TP7
TP15
SB22
SB24
P18
1
R27
R25
R28
R26
C42
C43
Button 1
Button 2
SW1
SW2
U4
C44
Button 3
Button 4
SW3
SW4
External supply
P21
D1
LD5
U2
TP14
R20
R19
SB10
SB11
SB12
C24
SB29
C25
R16
R15
C26
R5
SB27
SB26
SB20
SB21
GND
TP9
TP10
TP11
Debug in
IF BOOT/RESET
SW5
VDD
VDD
RESET
VDD
5V
GND
GND
N.C.
P0.03 (A0)
P0.04
P0.28
P0.29
P0.30
P0.31
P1
P2
P13
P14
P23
NFC
SW6
OFF ON
Power
GND
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SEMICONDUCTOR
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P0.00
P0.01
P0.02
P0.03
P0.04
P0.05
P0.06
P0.07
P0.08
P0.09
P0.10
P0.11 (ARDUINO D0)
P0.12 (D1)
P0.13 (D2)
P0.14 (D3)
P0.15 (D4)
P0.16 (D5)
P0.17 (D6)
P0.18 (D7)
P0.19 (D8)
P0.20 (D9)
P0.21 (D10)
P0.22 (D11)
P0.23 (D12)
P0.24 (D13)
GND
P0.25 (AREF)
P0.26 (SDA)
P0.27 (SCL)
P0.28 (A0)
P0.29 (A1)
P0.30 (A2)
P0.31 (A3)
N.C.
GND
5V
VDD
RESET
VDD
VDD
P0.00
P0.01
P0.02
P0.03
P0.04
P0.05
P0.06
P0.07
P0.08
P0.09
P0.10
P0.11
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P0.21
P0.22
P0.23
P0.24
P0.25
P0.26
P0.27
P0.28
P0.29
P0.30
P0.31
RESET
LED 4
LED 3
LED 2
LED 1
Button 4
Button 3
Button 2
Button 1
NFC2
NFC1
RXD
CTS
TXD
RTS
XL2
XL1
SB17
SB8
SB7
SB6
SB5
SB16
SB15/SB9
SB14/SB13
SB12
SB11
SB10
SB4
SB3
SB2
SB1
GPIO
Function
Short
HW
GPIO
PIN
VDD
PIN
NFC
GPIO
PIN
SBx
IF MCU
GPIO
PIN
I2C
EXP
INT
DETECT
IO EXPANDER
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12
Bat1
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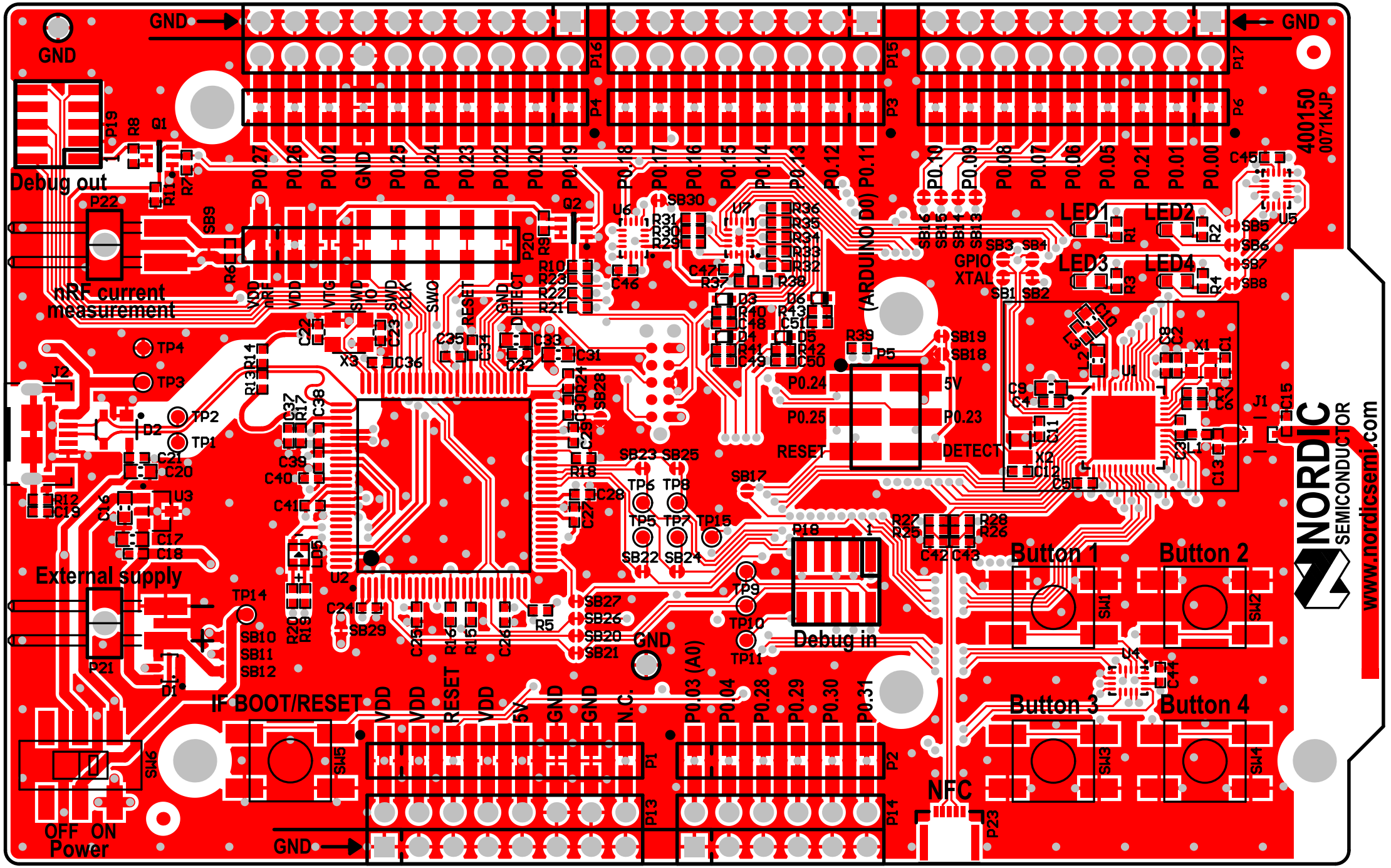
GND
Debug out
nRF current measurement
External supply
IF BOOT/RESET
OFF ON
Power
Debug in
NFC
Button 1
Button 2
Button 3
Button 4
LED1
LED2
LED3
LED4
GPIO
XTAL
(ARDUINO D0) P0.11
P0.24
P0.25
RESET
5V
P0.23
DETECT
P0.03 (A0)
P0.04
P0.28
P0.29
P0.30
P0.31
N.C.
VDD
SWDIO
SWDCLK
SWO
400150
0071KJP
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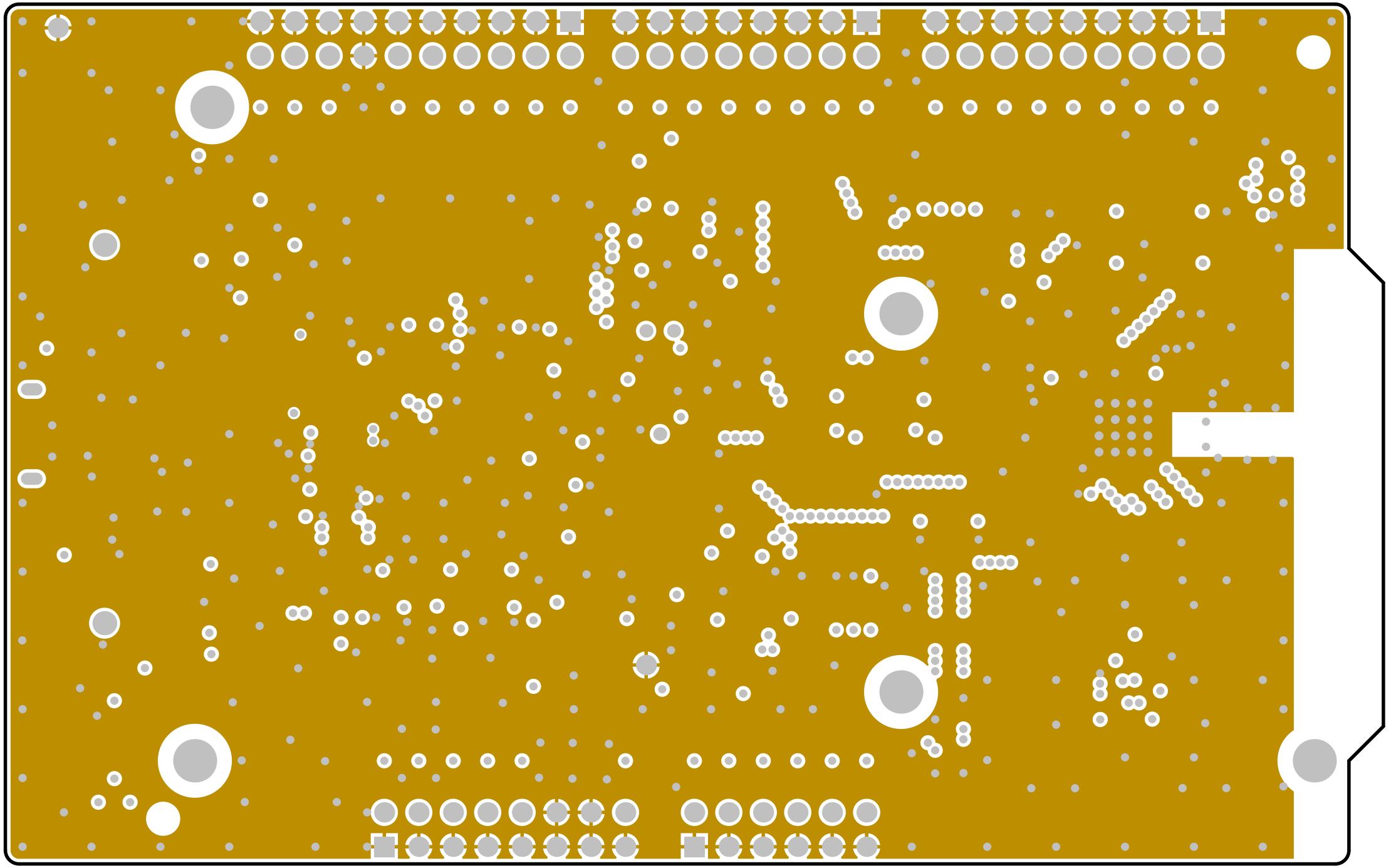

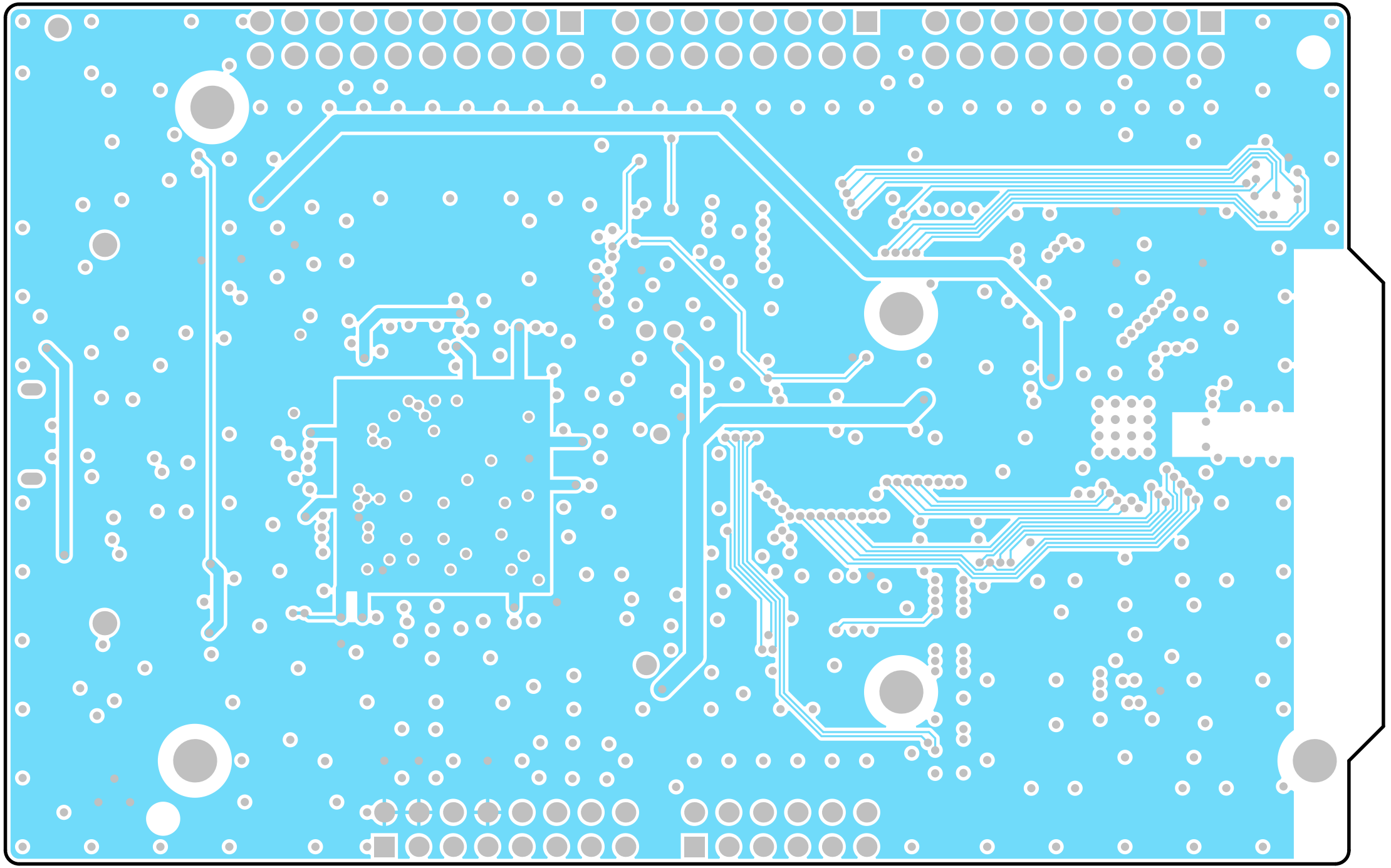

ARM
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prototyping
board
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GPIO
Function
Short
HW
I/O EXPANDER
P0.27
P0.28
P0.29
P0.30
P0.31
P0.26
P0.25
P0.24
P0.23
P0.22
P0.21
P0.20
P0.19
P0.18
P0.17
P0.16
P0.15
P0.14
P0.13
P0.12
P0.11
P0.10
P0.9
P0.8
P0.7
P0.6
P0.5
P0.4
P0.3
P0.2
P0.1
P0.0
RESET
SB17
SB8
SB16
SB7
SB15
SB6
SB14
SB5
SB13
SB4
SB12
SB3
SB11
SB2
SB10
SB1
SB9
SB0
LED 4
LED 3
LED 2
LED 1
Button 4
Button 3
Button 2
Button 1
P0.0
P0.1
P0.2
P0.3
P0.4
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GPIO
PWM
MCI
MCO
RXD
TXD
CTS
RTS
SCK
MISO
MOSI
SSEL
SCL
SDA
ADC
DAC
AIN
AOUT
VREF
VBAT
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VCC
3V3
5V
NC
DETECT
USB
EXP
LPC1768
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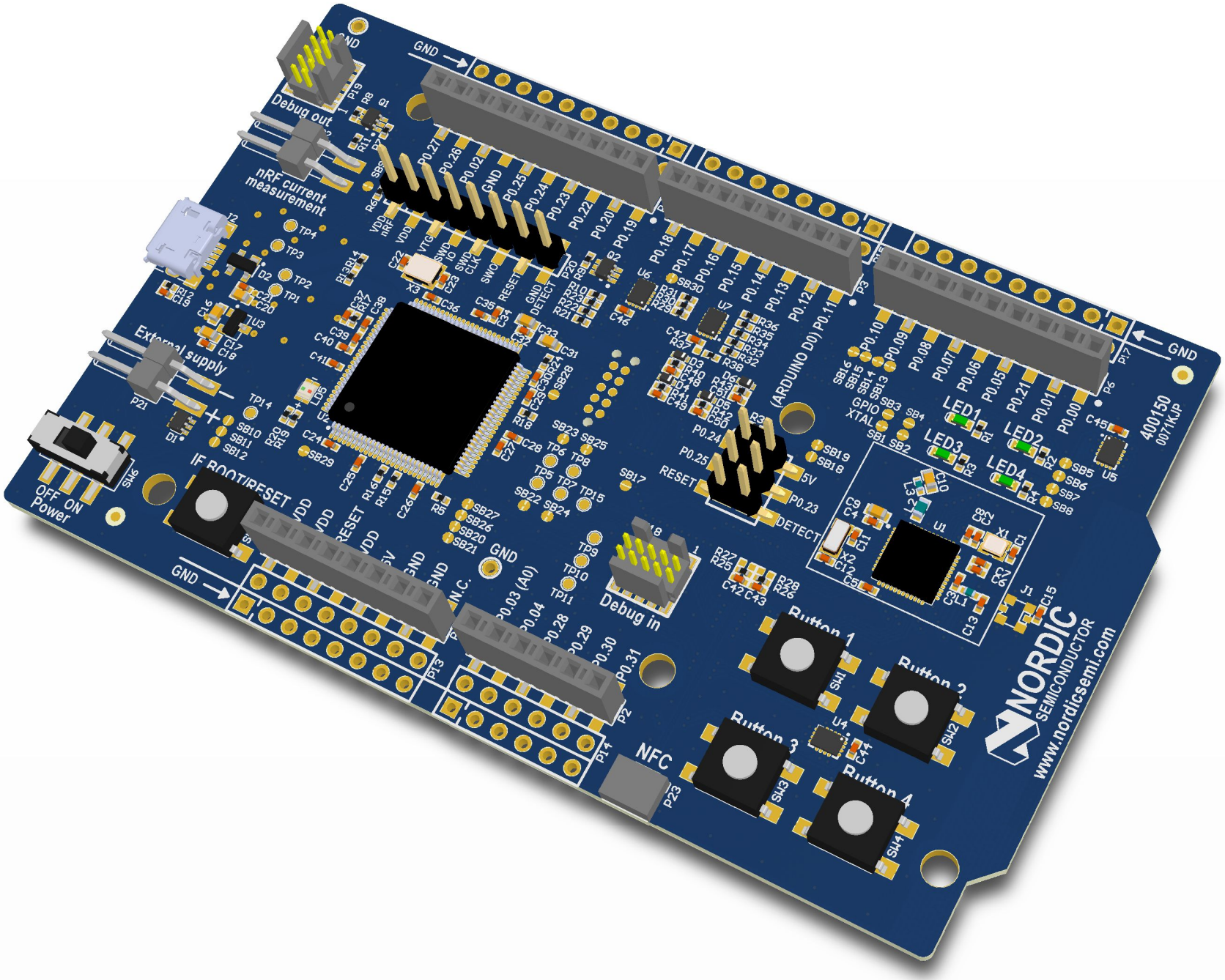
prototyping
board


Debug out
nRF current measurement
External supply
OFF ON
Power
IF BOOT/RESET
Debug in
NFC
Button 1
Button 2
Button 3
Button 4
LED1
LED2
LED3
LED4
GPIO
XTAL
(ARDUINO D0) P0.11
RESET
DETECT
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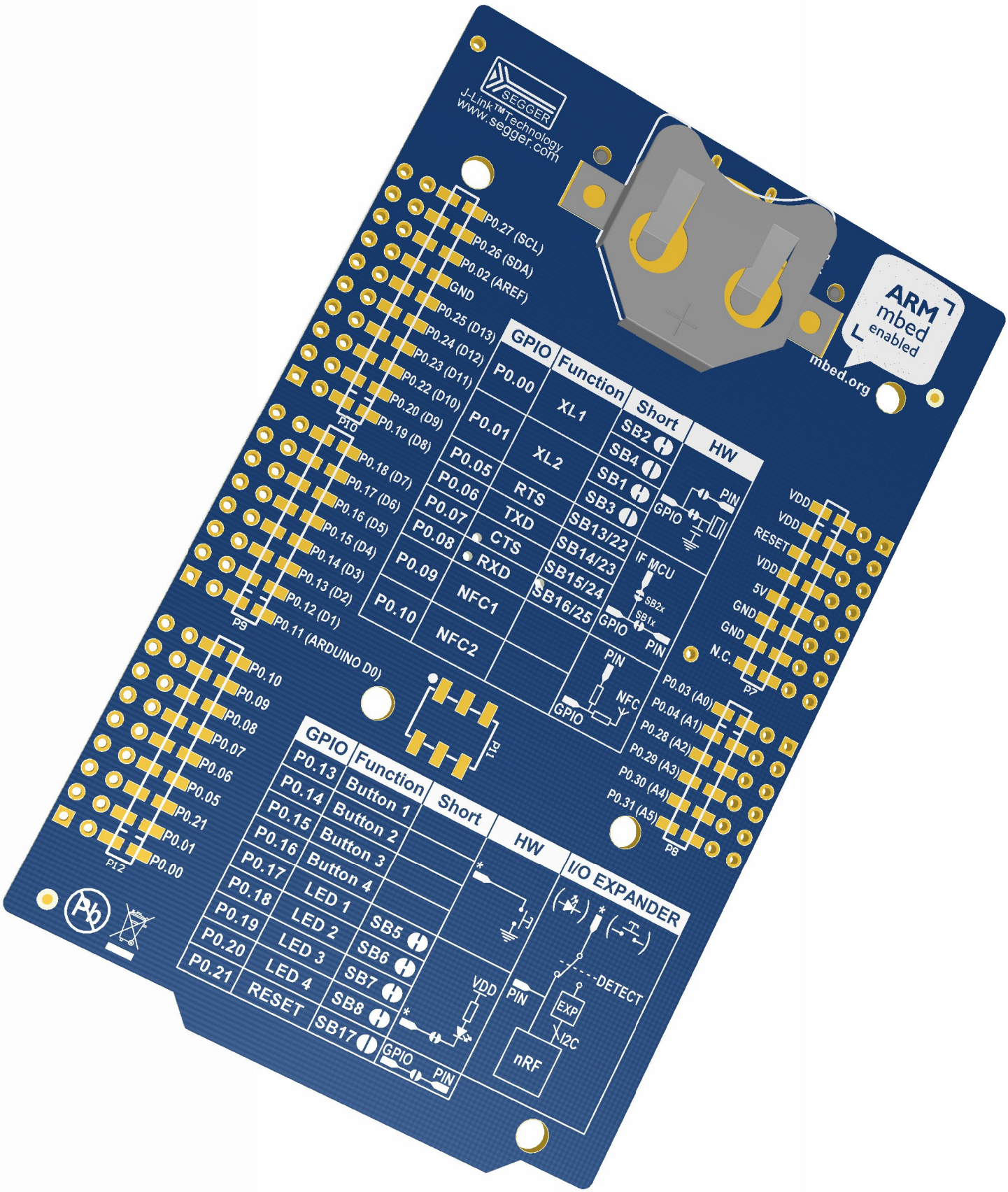
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P0.26 (SDA)
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GND
P0.25 (D13)
P0.24 (D12)
P0.23 (D11)
P0.22 (D10)
P0.20 (D9)
P0.19 (D8)
P10
P0.18 (D7)
P0.17 (D6)
P0.16 (D5)
P0.15 (D4)
P0.14 (D3)
P0.13 (D2)
P0.12 (D1)
P0.11 (ARDUINO D0)
P9
P0.10
P0.09
P0.08
P0.07
P0.06
P0.05
P0.21
P0.01
P0.00
P12
P1
VDD
VDD
RESET
VDD
5V
GND
GND
N.C.
P7
P0.03 (A0)
P0.04 (A1)
P0.28 (A2)
P0.29 (A3)
P0.30 (A4)
P0.31 (A5)
P8
GPIO
Function
Short
HW
P0.00
XL1
SB2
P0.01
XL2
SB4
P0.05
RTS
SB1
P0.06
TXD
SB3
P0.07
CTS
SB13/22
P0.08
RXD
SB14/23
P0.09
NFC1
SB15/24
P0.10
NFC2
SB16/25
PIN
GPIO
IF MCU
SB2x
SB1x
NFC
GPIO
Function
Short
HW
P0.13
Button 1
P0.14
Button 2
P0.15
Button 3
P0.16
Button 4
P0.17
LED 1
SB5
P0.18
LED 2
SB6
P0.19
LED 3
SB7
P0.20
LED 4
SB8
P0.21
RESET
SB17
VDD
GPIO
PIN
I/O EXPANDER
DETECT
EXP
I2C
nRF