nRF53840 with Decoupling

U1
NRF52840-QIAA-R

SW1 — A8 — P0.31/AIN7
SW2 — A10 — P0.29/AIN5
SW3 — A12 — P0.02/AIN0
SW4 — A14 — P1.15
A16 — P1.13
A18 — DEC2
Buzzer — A20 — P1.10
A22 — VDD
XC2 — A23 — XC2
B1 — VDD
B3 — DCC
B5 — DEC4
B7 — VSS
B9 — P0.30/AIN6
B11 — P0.28/AIN4
B13 — P0.03/AIN1
B15 — P1.14
B17 — P1.12
B19 — P1.11
XC1 — B24 — XC1
C1 — DEC1
D2 — P0.00/XL1
D23 — DEC3
E24 — DEC6
F2 — P0.01/XL2
VSS_PA — F23 — VSS_PA
RGBData — G1 — P0.26
H2 — P0.27
ANT — H23 — ANT
J1 — P0.04/AIN2
J24 — P0.10/NFC2
K2 — P0.05/AIN3
LD1 — L1 — P0.06
L24 — P0.09/NFC1
M2 — P0.07/TRACECLK
N1 — P0.08
N24 — DEC5

EP — 0 — GND
VDD — AD23
P1.00/TRACEDATA0 — AD22
P0.24 — AD20 — SCL_qwIIC
P0.22 — AD18
P0.20 — AD16 — SDA_qwIIC
VDD — AD14
P0.17 — AD12
P0.15 — AD10
P0.13 — AD8
D+ — AD6 — USB_P
D- — AD4 — USB_N
VBUS — AD2 — VBUSnRF
SWDIO — AC24 — SWDIO
P0.25 — AC21
P0.23 — AC19
P0.21 — AC17
P0.19 — AC15
P0.18/nRESET — AC13
P0.16 — AC11
P0.14 — AC9
DECUSB — AC5
DCCH — AB2
SWDCLK — AA24 — SWDCLK
P1.01 — Y23
VDDH — Y2
P1.02 — W24 — LD4
VDD — W1
P1.03 — V23
P1.04 — U24 — LD3
P0.12/TRACEDATA1 — U1 — SW0
P1.05 — T23
P0.11 — T2
P1.06 — R24 — LD2
P1.09/TRACEDATA3 — R1
P1.07 — P23
P1.08 — P2

C17 100nF — +3V3 — 1 2 — GND
AD23 1 2 — GND
C16 100nF — +3V3 — 1 2 — GND
C26 100nF — +3V3 — 2 1 — GND
C18 1µF — +3V3 — 2 1 — GND / GND
C25 1µF — DEC4_6 — 2 1 — GND
C24 100nF — 2 1 — GND
C29 100pF — 2 1 — GND
C21 4.7µF — 1 2 — GND
C22 4.7µF — VBUSnRF — 1 2 — GND
C23 4.7µF — +3V3 — 1 2 — GND

0.04 TestPoint
0.06 TestPoint
0.08 TestPoint
1.09 TestPoint

Voltage Testpoints

3V3 TestPoint — +3V3
GND1 TestPoint — GND
5V1 TestPoint — VBUSnRF

SWD Debug

SWD1
HX JN1.27-2X5 TP H4.9

+3V3 — 1 — 2 — SWDIO
3 — 4 — SWDCLK
GND — 5 — 6
7 — 8
9 — 10

2,4 GHz Radio

U2
2450AT43A100E
ANT
L2 2.2nH
C2 1.2pF
L1 4.7nH
C1 1.0pF
GND — VSS_PA
ANT

32 MHz Crystal

GND
X2
Q22FA12800025
C4 12pF
C3 12pF
GND
XC2
XC1
GND

In-Output
Datei: in_output.kicad_sch

USB-Power
Datei: untitled.kicad_sch

USB-C Connector

USBC1
TYPE-C-31-M-12

GND

B1 GND
B4 VBUS
B5 CC2
B6 DP2
B7 DN2
B8 SBU2
B9 VBUS
B12 GND

SH SH
SH SH

A12 GND
A9 VBUS
A8 SBU1
A7 DN1
A6 DP1
A5 CC1
A4 VBUS
A1 GND

GND
VBUS
USB_P
USB_N
VBUS

VBUS
USB_N
USB_P
VBUS

GND

R2
5k1

R1
5k1

GND

VBUS Filtering

VBUS

L3
120R@100MHz

VBUSnRF

C5
10nF

C6
100nF

GND

GND

3V3 Regulator

GND

C27
22µF

U4
LM1117MPX-3.3/NOPB

VBUSnRF

3 IN
OUT 2
+3V3

+3V3
4 TAB
ADJ/GND 1

GND

R9
75

3V3
Power Good

LD5
0603White light_C2290

GND

C19
22µF

C20
22µF

C13
100nF

+3V3

ESD Protection

D0
PRTR5V0U2X,215

GND
1 GND
VCC 4
VBUS

C8
100nF
C7
10µF

USB_N
2 IO1
IO2 3
USB_P

GND

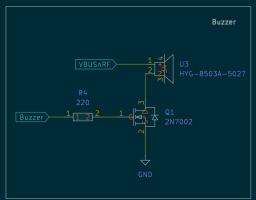**Title: CoffeeCaller nRF52840**

Size: A4   Date: 2025-05-03
KiCad E.D.A. 9.0.1

Rev:
Id: 2/3

WS2812 LED Strip

GND — C12 100nF — VBUSnRF — D4 WS2812E (VDD, DOUT, DIN, VSS)

GND — C11 100nF — VBUSnRF — D3 WS2812E (VDD, DOUT, DIN, VSS)

GND — C10 100nF — VBUSnRF — D2 WS2812E (VDD, DOUT, DIN, VSS)

GND — C9 100nF — VBUSnRF — D1 WS2812E (VDD, DOUT, DIN, VSS) — R3 220 — RGBData

GND, GND, GND, GND

User LEDs

+3V3 — R5 75 — LD1 0603White light_C2290 — LD1

R6 75 — LD2 0603White light_C2290 — LD2

R7 75 — LD3 0603White light_C2290 — LD3

R8 75 — LD4 0603White light_C2290 — LD4

Small User Buttons

SW1 — SW1 TS-1088R-02026

SW2 — SW2 TS-1088R-02026

SW3 — SW3 TS-1088R-02026

SW4 — SW4 TS-1088R-02026

GND

Big User Button

KEY1 DTSM-24N-V-S-T/R

GND — GND

SW0 — SW0

qwIIC Temperature Sensor

GND

CN1 SM04B-SRSS-TB (LF)(SN)
+3V3, SDA_qwIIC, SCL_qwIIC

U5 SHT40-CD1B-R3 (SDA, SCL, EP, VSS, VDD)

GND

C15 100nF — +3V3

Buzzer

VBUSnRF — U3 HYG-8503A-5027

Buzzer — R4 220 — Q1 2N7002

GND