nRF52840
with Decoupling

U1
NRF52840-QIAA-R

Left pins:
- A8 — P0.31/AIN7 — SW1
- A10 — P0.29/AIN5 — SW2
- A12 — P0.02/AIN0 — SW3
- A14 — P1.15 — SW4
- A16 — P1.13 — Servo3
- A18 — DEC2
- A20 — P1.10 — Buzzer
- A22 — VDD
- A23 — XC2 — 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
- B24 — XC1 — XC1
- C1 — DEC1
- D2 — P0.00/XL1 — Servo2
- D23 — DEC3
- E24 — DEC6
- F2 — P0.01/XL2 — Servo1
- F23 — VSS_PA — VSS_PA
- G1 — P0.26 — RGBData
- H2 — P0.27
- H23 — ANT — ANT
- J1 — P0.04/AIN2 — SW0
- J24 — P0.10/NFC2 — NFC2
- K2 — P0.05/AIN3
- L1 — P0.06 — P0.06
- L24 — P0.09/NFC1 — NFC1
- M2 — P0.07/TRACECLK
- N1 — P0.08 — P0.08
- N24 — DEC5

Right pins:
- EP — 0 — GND
- D23 — VDD
- D22 — P1.00/TRACEDATA0 — P1.00
- D20 — P0.24 — SCL_qwIIC
- D18 — P0.22 — P0.22
- D16 — P0.20 — SDA_qwIIC
- D14 — VDD
- D12 — P0.17 — P0.17
- D10 — P0.15 — P0.15
- D8 — P0.13 — P0.13
- D6 — D+ — USB_P
- D4 — D- — USB_N
- D2 — VBUS — VBUSnRF
- C24 — SWDIO — SWDIO
- C21 — P0.25
- C19 — P0.23
- C17 — P0.21
- C15 — P0.19
- C13 — P0.18/nRESET — nRESET
- C11 — P0.16
- C9 — P0.14
- C5 — DECUSB
- B2 — DCCH
- A24 — SWDCLK — SWDCLK
- Y23 — P1.01
- Y2 — VDDH
- W24 — P1.02 — LD3
- W1 — VDD
- V23 — P1.03
- U24 — P1.04 — LD4
- U1 — P0.12/TRACEDATA1 — P0.12
- T23 — P1.05
- T2 — P0.11
- R24 — P1.06 — LD1
- R1 — P1.09/TRACEDATA3 — P1.09
- P23 — P1.07 — LD2
- P2 — P1.08

Decoupling:
- C26 100nF +3V3 GND
- C18 1µF +3V3 GND
- C25 1µF GND
- C24 100nF GND
- C29 100pF GND
- C27 820pF GND
- DEC4_6
- C17 100nF +3V3 GND
- C16 100nF +3V3 GND
- R11 5k1 +3V3
- RST1 TS-1088R-02026
- C20 100nF GND
- C21 4.7µF GND
- C22 4.7µF VBUSnRF GND
- C23 4.7µF +3V3 GND

Free Pin Header
X1
PM254-2-08-S-8.5
- 1 P0.06 / 2 VBUSnRF
- 3 P0.08 / 4 +3V3
- 5 P1.09 / 6 P1.00
- 7 P0.12 / 8 SDA_qwIIC
- 9 P0.13 / 10 SCL_qwIIC
- 11 P0.15 / 12 SWDIO
- 13 P0.22 / 14 SWDCLK
- 15 P0.17 / 16 GND

SWD Debug
SWD1
HX JN1.27-2X5 TP H4.9
- +3V3
- 2 SWDIO
- 4 SWDCLK
- GND
- 10 nRESET

NFC Connector
- NFC1
- NFC2
RF1
IPEX-01

2,4 GHz Radio
U6
ANT3216LL00R2400A
- GND
- VSS_PA
- L2 2.2nH
- C2 1.2pF
- L1 4.7nH
- C1 1.0pF
- ANT

32 MHz Crystal
X2
Q22FA12800025
GND
- XC2
- C4 12pF
- GND
- XC1
- C3 12pF
GND

WS2812 LED Strip

Level Shifting from 3V3 to VBUSnRF

GND — C12 100nF — VBUSnRF — D4 WS2812E-V5 (VDD, DO, DIN, GND) — GND

GND — C11 100nF — VBUSnRF — D3 WS2812E-V5 (VDD, DO, DIN, GND) — GND

GND — C10 100nF — VBUSnRF — D2 WS2812E-V5 (VDD, DO, DIN, GND) — GND

GND — C9 100nF — VBUSnRF — D1 WS2812E-V5 (VDD, DO, DIN, GND) — GND

RGBData — R3 220R — R14 5k1 — +3V3

Q2 2N7002 — R15 5k1 — VBUSnRF

User LEDs

+3V3 — R7 5k1 — LD1 0603White light_C2290 — LD1
R8 5k1 — LD2 0603White light_C2290 — LD2
R5 5k1 — LD3 0603White light_C2290 — LD3
R6 5k1 — 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 TS-1003S-07026
GND — GND
SW0 — SW0

Servo Connector

HDR1 PZ254-2-03-S
Servo2 / VBUSnRF / GND — Servo1 / VBUSnRF / GND

HDR2 PZ254-2-03-S
Servo4 / VBUSnRF / GND — Servo3 / VBUSnRF / GND

qwIIC Temperature Sensor

GND
+3V3 / SDA_qwIIC / SCL_qwIIC

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

CN1 SM04B-SRSS-TB (LF)(SN)
R12 5k1 — R13 5k1
C15 100nF — +3V3

Buzzer

VBUSnRF
D5 SS210
U3 HYG-8503A-5027
Buzzer — R4 220R — Q1 2N7002
R10 5k1
GND

USB-C Connector

USBC1
TYPE-C-31-M-12

- 1 GND
- 2 VBUS
- 3 SBU2
- 4 CC1
- 5 DN2
- 6 DP2
- 7 DN1
- 8 DP2
- 9 SBU1
- 10 CC2
- 11 VBUS
- 12 GND
- SHELL 14
- SHELL 13

R1 5k1
R2 5k1

VBUS
USB_N
USB_P
USB_N
USB_P
VBUS
USB_GND

VBUS Filtering

L3 100R@100MHz

VBUS — VBUSnRF

C5 10nF
C6 100nF
GND GND

L4 100R@100MHz

USB_GND
GND

3V3 Regulator

GND

U4
XC6206P332MR

- 1 GND
- Vout 2
- 3 Vin

C19 1µF
VBUSnRF

+3V3

C14 1µF
C13 100nF
GND

R9 5k1

LD5 0603White light_C2290

GND

3V3 Power Good

ESD Protection

D0
PRTR5V0U2X,215

- 1 GND
- VCC 4
- 2 IO1
- IO2 3

GND
VBUS
USB_N
USB_P
GND

C8 100nF
C7 4.7µF

GND

Title: CoffeeCaller nRF52840

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