BUTTON&SENSOR

File: button_sensor.kicad_sch

MCU
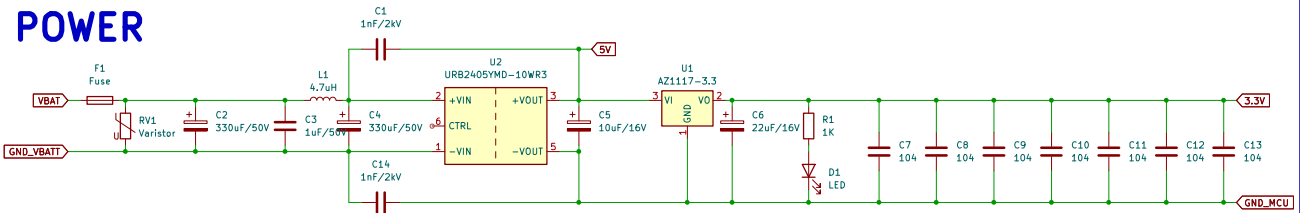
File: decon_mcu.kicad_sch

RELAY
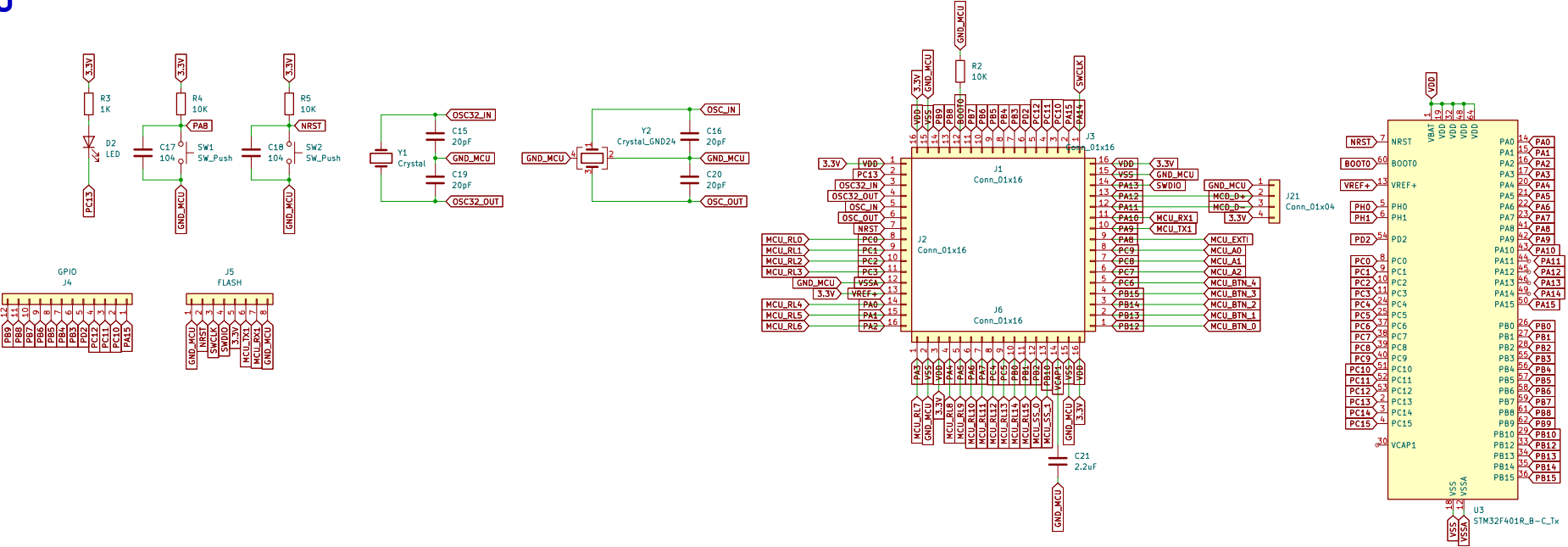
File: relay.kicad_sch

POWER

F1 Fuse
VBAT
GND_VBATT
RV1 Varistor
C2 330uF/50V
C3 1uF/50V
L1 4.7uH
C1 1nF/2kV
C14 1nF/2kV
C4 330uF/50V
U2 URB2405YMD-10WR3
+VIN +VOUT
CTRL
-VIN -VOUT
5V
C5 10uF/16V
U1 AZ1117-3.3
VI GND VO
C6 22uF/16V
R1 1K
D1 LED
C7 104 C8 104 C9 104 C10 104 C11 104 C12 104 C13 104
3.3V
GND_MCU

MCU

3.3V
R3 1K
D2 LED
PC13
3.3V
R4 10K
PAB
C17 104
SW1 SW_Push
GND_MCU
3.3V
R5 10K
NRST
C18 104
SW2 SW_Push
GND_MCU
Y1 Crystal
OSC32_IN
C15 20pF
GND_MCU
C19 20pF
OSC32_OUT
Y2 Crystal_GND24
GND_MCU
OSC_IN
C16 20pF
GND_MCU
C20 20pF
OSC_OUT

GPIO J4
PB9 PB8 PB7 PB6 PB5 PB4 PB3 PD2 PC12 PC11 PA15

FLASH J5
GND_MCU NRST SWCLK SWDIO 3.3V MCU_TX1 MCU_RX1 GND_MCU

GND_MCU
3.3V
R2 10K
SWCLK

J1 Conn_01x16
J2 Conn_01x16
J3 Conn_01x16
J6 Conn_01x16

VDD
PC13
OSC32_IN
OSC32_OUT
OSC_IN
OSC_OUT
NRST
PC0
PC1
PC2
PC3
VSSA
VREF+
PA0
PA1
PA2

MCU_RL0 PC0
MCU_RL1 PC1
MCU_RL2 PC2
MCU_RL3 PC3
GND_MCU VSSA
3.3V VREF+
MCU_RL4 PA0
MCU_RL5 PA1
MCU_RL6 PA2

VDD
VSS
PA13
PA12
PA11
PA10
PA9
PA8
PC9
PC8
PC7
PC6
PB15
PB14
PB13
PB12

3.3V
GND_MCU
SWDIO
MCU_RX1
MCU_TX1
MCU_EXTI
MCU_A0
MCU_A1
MCU_A2
MCU_BTN_4
MCU_BTN_3
MCU_BTN_2
MCU_BTN_1
MCU_BTN_0

GND_MCU
MCD_D+
MCD_D-
3.3V
J21 Conn_01x04

MCU_RL7 MCU_RL8 MCU_RL9 MCU_RL10 MCU_RL11 MCU_RL13 MCU_RL14 MCU_SS_0 MCU_SS_1
GND_MCU 3.3V
C21 2.2uF
GND_MCU

NRST
BOOT0
VREF+
PH0
PH1
PD2
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7
PC8
PC9
PC10
PC11
PC12
PC13
PC14
PC15
VCAP1
VSS VSSA
U3 STM32F401R_B-C_Tx

VDD
VBAT VDD VDD VDD VDD
PA0 PA0
PA1 PA1
PA2 PA2
PA3 PA3
PA4 PA4
PA5 PA5
PA6 PA6
PA7 PA7
PA8 PA8
PA9 PA9
PA10 PA10
PA11 PA11
PA12 PA12
PA13 PA13
PA14 PA14
PA15 PA15
PB0 PB0
PB1 PB1
PB2 PB2
PB3 PB3
PB4 PB4
PB5 PB5
PB6 PB6
PB7 PB7
PB8 PB8
PB9 PB9
PB10 PB10
PB12 PB12
PB13 PB13
PB14 PB14
PB15 PB15

CONNECTOR

J13 Conn_01x02
VBAT GND_VBAT

J14 Conn_01x06
VBAT GND_VBAT RELAY_0 RELAY_1 RELAY_2 RELAY_3

J15 Conn_01x06
RELAY_4 RELAY_5 RELAY_6 RELAY_7 RELAY_8 RELAY_9

J16 Conn_01x06
RELAY_10 RELAY_11 RELAY_12 RELAY_13 RELAY_14 RELAY_15

J20 Conn_01x05
VBAT GND_VBAT SENSOR_0 SENSOR_1 EXT_INPUT

J7 Conn_01x06
VBAT GND_VBAT BUTTON_EN BUTTON_0 BUTTON_1 BUTTON_2 BUTTON_3

J8 Conn_01x06
LED_POWER LED_0 LED_1 LED_2 LED_3 LED_4

J9 Conn_01x04
LED_5 LED_6 EXT_OUTPUT

J11 Conn_01x06
VBAT GND_VBAT BUTTON_EN BUTTON_0 BUTTON_1 BUTTON_2 BUTTON_3

J12 Conn_01x06
LED_POWER LED_0 LED_1 LED_2 LED_3 LED_4

J10 Conn_01x04
LED_5 LED_6 EXT_OUTPUT

U21
74HC138

MCU_A0 — 1 A0
MCU_A1 — 2 A1
MCU_A2 — 3 A2
GND_MCU — 4 E0
3.3V — 5 E1
6 E2

VCC — 16
GND — 8
GND_MCU

15 Y0 — 74138_Y0
14 Y1 — 74138_Y1
13 Y2 — 74138_Y2
12 Y3 — 74138_Y3
11 Y4 — 74138_Y4
10 Y5 — 74138_Y5
9 Y6 — 74138_Y6
7 Y7 — 74138_Y7

3.3V

R104 1K   U24 LTV-817S   R105 1K
74138_Y0 — 2   3 — LED_0   4 — VBAT

R107 1K   U25 LTV-817S   R108 1K
74138_Y1 — 2   3 — LED_1

R110 1K   U27 LTV-817S   R111 1K
74138_Y2 — 2   3 — LED_2

R114 1K   U29 LTV-817S   R115 1K
74138_Y3 — 2   3 — LED_3

R118 1K   U31 LTV-817S   R119 1K
74138_Y4 — 2   3 — LED_4

R121 1K   U32 LTV-817S   R122 1K
74138_Y5 — 2   3 — LED_5

R124 1K   U34 LTV-817S   R125 1K
74138_Y6 — 2   3 — LED_6

R126 1K   U35 LTV-817S   R127 1K
74138_Y7 — 2   3 — EXT_OUTPUT

R128 1K   U36 LTV-817S   R129 1K
GND_MCU — 2   3 — LED_POWER

R99 1K   U20 LTV-817S   R98 10K   3.3V
VBAT — 1   4 — MCU_SS_0
SENSOR_0 — 2   3 — GND_MCU

R101 1K   U22 LTV-817S   R100 10K
1   4 — MCU_SS_1
SENSOR_1 — 2   3 — GND_MCU

R103 1K   U23 LTV-817S   R102 10K
1   4 — MCU_BTN_0
BUTTON_0 — 2   3 — GND_MCU

R109 1K   U26 LTV-817S   R106 10K
1   4 — MCU_BTN_1
BUTTON_1 — 2   3 — GND_MCU

R113 1K   U28 LTV-817S   R112 10K
1   4 — MCU_BTN_2
BUTTON_2 — 2   3 — GND_MCU

R117 1K   U30 LTV-817S   R116 10K
1   4 — MCU_BTN_3
BUTTON_3 — 2   3 — GND_MCU

R123 1K   U33 LTV-817S   R120 10K
1   4 — MCU_EXTI
EXT_INPUT — 2   3 — GND_MCU