# RaspberryPi Pico W

Conn_ARM_SWD_TagConnect_TC2030

J1
RESET
VCC
SWCLK — D1 — SWCLK
SWDIO — D3 — SWDIO
SWO
GND

U2 SC0918 (PicoW)
RaspberryPi PicoW

3V3 — VCC (36)
VSYS (39)
VBUS (40)

GPIO0 (1)
GPIO1 (2)
BUZZER — GPIO2 (4)
BUTTON4 — GPIO3 (5)
BUTTON5 — GPIO4 (6)
MPRLS_DRDY_RES — GPIO5 (7)
GPIO6 (9)
3V3_ADC_ENABLE — GPIO7 (10)
BUTTON1 — GPIO8 (11)
BUTTON2 — GPIO9 (12)
NEOPIXEL — GPIO10 (14)
BUTTON3 — GPIO11 (15)
SDA_INT — GPIO12 (16)
SCL_INT — GPIO13 (17)
IR_LED — GPIO14 (19)
GPIO15 (20)

GPIO16 — IR_TSOP (21)
GPIO17 (22)
GPIO18 (24)
GPIO19 (25)
GPIO20 (26)
GPIO21 (27)
GPIO22 — EXT2 (29)

ADC_VREF (35)

GPIO26_ADC0 — SDA (31)
GPIO27_ADC1 — SCL (32)
GPIO28_ADC2 — EXT1 (34)

AGND — GND (33)
NT1 NetTie_2

RESET — RUN (30)
3V3_EN (37)
BOOTSEL
SMPS_PS — TP4
PWR_FLAG
TP2 TestPoint
TestPoint_Flag
TP6
GND (13)

U1 D5V0F4U6SO
LED_OUT — TP5
USB_DP — TP3
USB_DM — TP2
USB_GND — TP1
C1 100n
VBUS

# IR (infrared) TX

VCC
R1 DNP, JP1
R2 DNP, JP2
D1  D2
D3  D4
C2 100uF/6.3V
IR_LED
R5 4k7
Q1 BSS806
GND

SFH4045: Vftyp=1.5V@70mA; max. 1.75V

In this setup, all 4 LEDs are around 100-200mA pulsed, so the maximum duty cycle for IR sending should be around 0.3. In total we need ~200-400mA for sending, therefor we have an additional capacitor for the DCDC power supply. Should we need to add a resistor at some point, cut the jumper and place the resistor.

# Buzzer

BZ2
BUZZER 2
1
GND
PKMCS0909E4000
SMD FM3 variant

# IR (infrared) RX

U3 TSOP4838
VCC
Vs
DEMOD
OUT — IR_TSOP
GND
GND

# OLED Display + I2C internal pullups

J2 display_connector_91601-304LF
GND (1)
VCC (3)
R7 4k7
SCL_INT (5)
SDA_INT (7)
R9 4k7

# external Sensor

J3 RJ25
+3.3VADC
D1213A-04SO-7
6 EXT2 — 4 EXT2
5 EXT1 — SCL 1
4 — EXT1 3 — 6 SDA
3 — SDA
2 SDA — 3.3VADC
1 SCL
C3 100n
U4
GNDA

# Buttons

J4, J5, J6
6SR / 2R / 3T
BUTTON1, BUTTON2, BUTTON3
1S
GND

J8, J9
6SR / 2R / 3T
BUTTON4, BUTTON5
1S
GND

FC68125 or 54-00174

U6 D1213A-04SO-7
BUTTON2
BUTTON3
VCC
C8 100n
BUTTON1
GND

U7 D1213A-04SO-7
BUTTON5
VCC
C9 100n
BUTTON4
GND

# Neopixel

Conn_01x03_Male
J7
GND (3)
NEOPIXEL (2)
VBUS (1)

SMD Pads:
GND — J11_GND1
NEOPIXEL — J11_data1
VBUS — J11_VDD1

# Addon PowerSupply

U5 MIC5504-3.3YM5
VBUS
VIN — VOUT — +3.3VADC
3V3_ADC_ENABLE — EN
GND
C4 1uF / >6.3V / X7R
C5 100n
PWR_FLAG
GNDA
NT2 NetTie_2
C6 100n
C7 1uF / >6.3V / X7R
GND

# Extension

J10 Conn_01x04_Male
1 GND
2 VCC
3 SCL_INT
4 SDA_INT

# MPRLS sensorboard

J11 009159000551906
5 GNDA
4 +3.3VADC
3 MPRLS_DRDY_RES
2 SDA
1 SCL

# Mechanical

LOGO1 Logo_FABI
LOGO2 Logo_KiCAD
LOGO3 Logo_CE
LOGO4 Logo_WEEE

FID1 Fiducial
FID2 Fiducial
FID3 Fiducial
FID4 Fiducial
FID5 Fiducial
FID6 Fiducial

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