Roomba HAT for Raspberry Pi

Primary power regulator

+5V
R2 232K
R1 44.2K
GND
+5V
R3 10k
C3 22u
GND
3300p C1
GND
IC1 LMZ21701SILT
SS
FB
PG
VOUT
GND
VOS
EN
VIN
PAD_1
PAD_2
+5V
VIN_Roomba
C2 22u
GND
PG
TP1
PG

USB<->UART TTL

USBVBUS
U3 FT230XS
3.3V_FTDI
3.3V_FTDI 10
USBDM 9
USBDP 8
3.3V_FTDI 11
C6 100n
GND
VCC
VCCIO
3V3OUT
USBDM
USBDP
RESET
TXD
RXD
RTS
CTS
CBUS0
CBUS1
CBUS2
CBUS3
GND
GND
GND
RX_TTL
TX_TTL
R5 56
R4 56
D1 LED_R
D2 LED_G
GND

Raspberry Pi connector

3.3V_RPi
+5V
J3
RX_TTL
TX_TTL
GND
GND

Mixing 3.3V sources

3.3V_FTDI
+3.3V
D4 BAT54C
3.3V_RPi

Input from Roomba connector

VIN_Roomba
TX_Roomba
RX_Roomba
J1 Roomba_conn
GND

Level shifter for UART lines

C4 100n
+5V
+3.3V
C5 100n
GND
GND
RX_Roomba
TX_Roomba
+5V
VCCA
VCCB
A1
A2
OE
B1
B2
GND
RX_TTL
TX_TTL
U2 TXS0102DCT
GND

USB Connector

J2 USB_B_Micro
VBUS
D+
D-
ID
Shield
GND
USBVBUS
USBDP
USBDM
U4 NUP2202
GND
GND

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