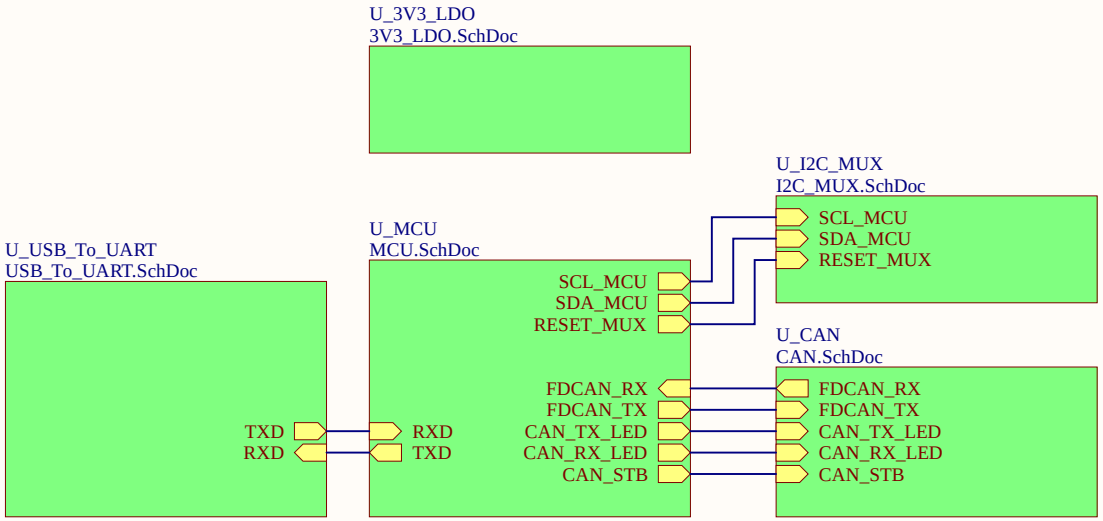
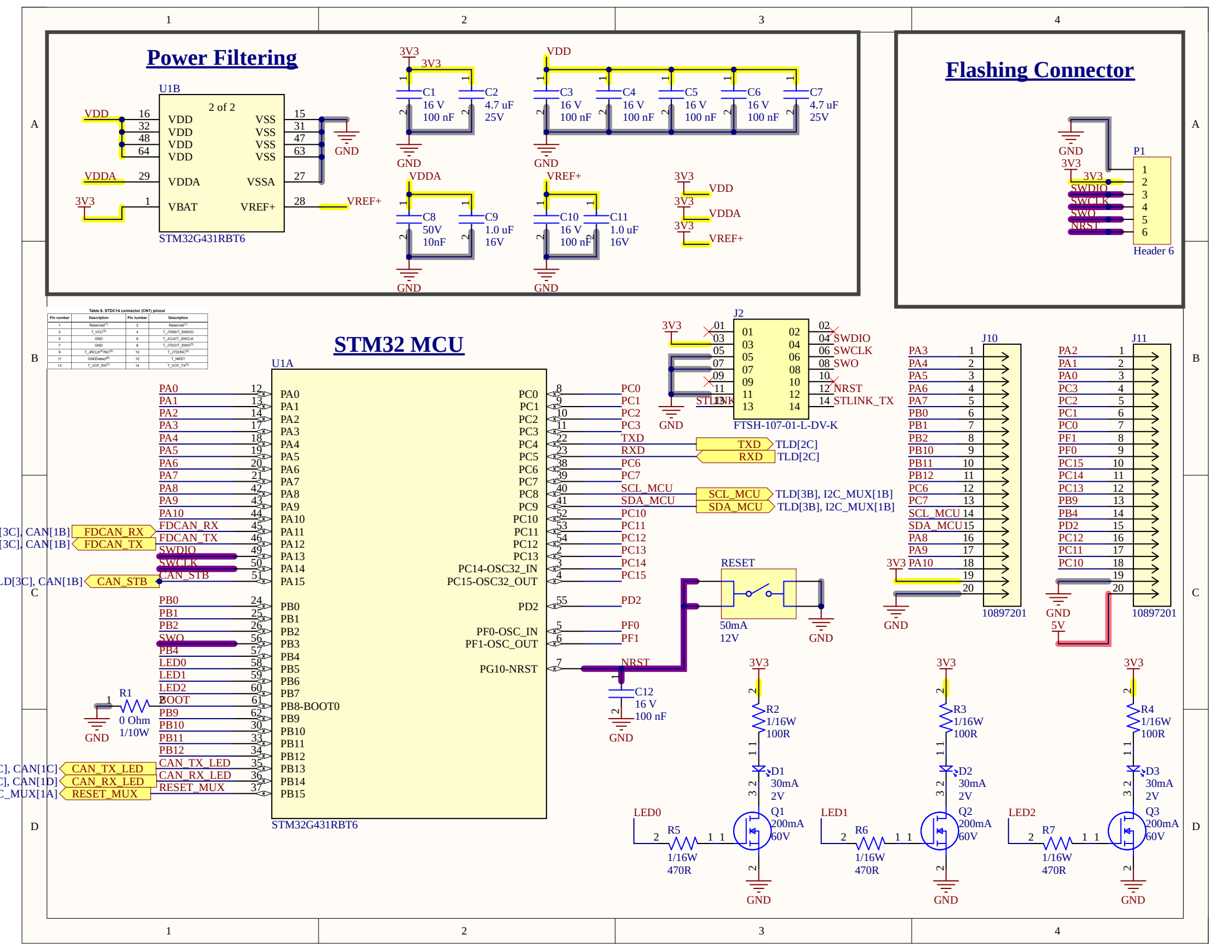
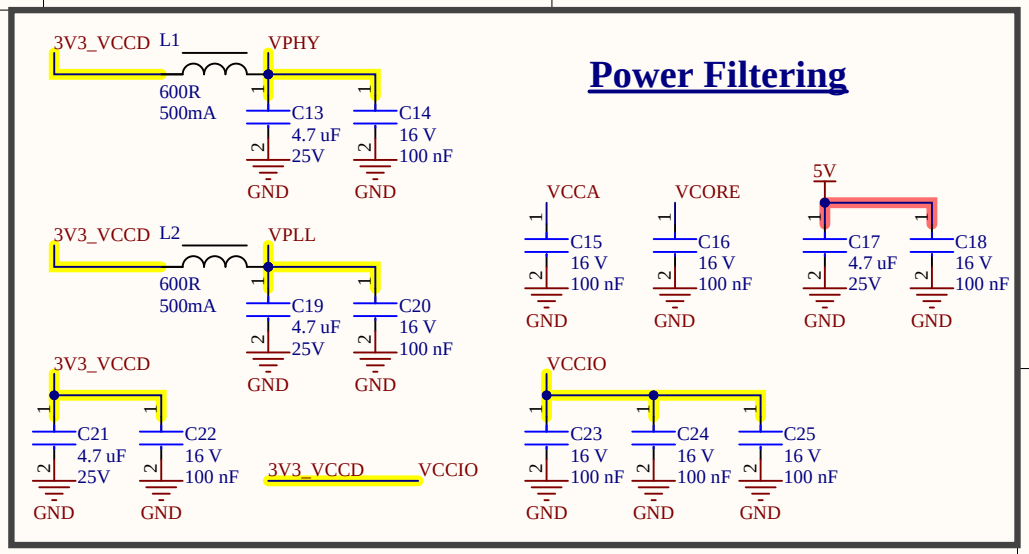
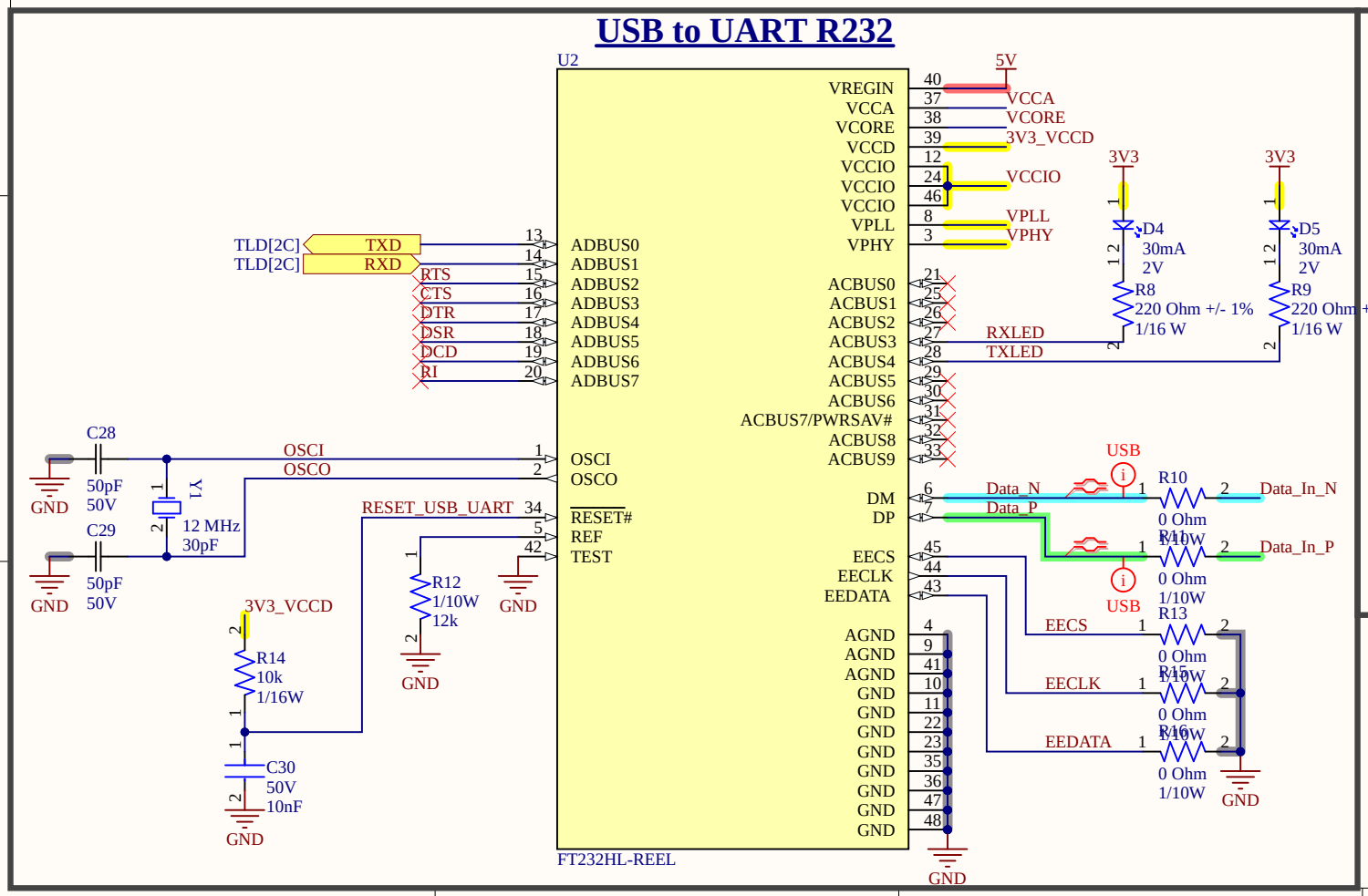

U_3V3_LDO
3V3_LDO.SchDoc
U_I2C_MUX
I2C_MUX.SchDoc
SCL_MCU
SDA_MCU
RESET_MUX
U_MCU
MCU.SchDoc
U_USB_To_UART
USB_To_UART.SchDoc
SCL_MCU
SDA_MCU
RESET_MUX
U_CAN
CAN.SchDoc
FDCAN_RX
FDCAN_TX
CAN_TX_LED
CAN_RX_LED
CAN_STB
TXD
RXD
RXD
TXD
FDCAN_RX
FDCAN_TX
CAN_TX_LED
CAN_RX_LED
CAN_STB

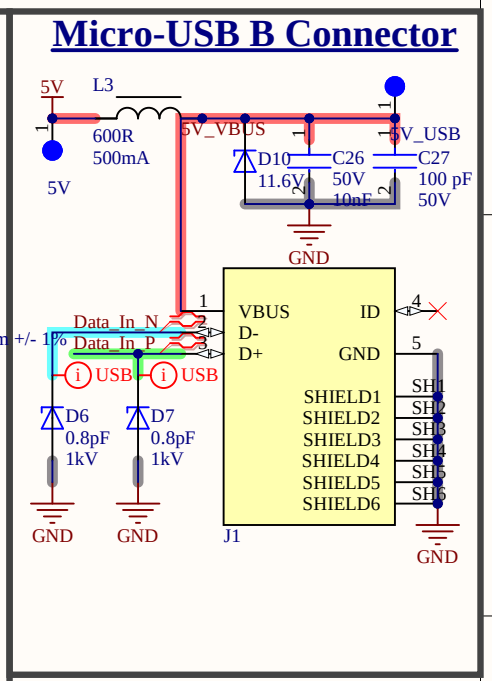

Power Filtering
U1B
2 of 2
VDD
VDDA
3V3
VSS
VSSA
VBAT
VREF+
STM32G431RBT6
GND
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
16 V
100 nF
4.7 uF
25V
50V
10nF
1.0 uF
16V
Flashing Connector
P1
SWDIO
SWCLK
SWO
NRST
Header 6
STM32 MCU
U1A
STM32G431RBT6
J2
FTSH-107-01-L-DV-K
SWDIO
SWCLK
SWO
NRST
STLINK_TX
TXD
RXD
SCL_MCU
SDA_MCU
FDCAN_RX
FDCAN_TX
CAN_STB
CAN_TX_LED
CAN_RX_LED
RESET_MUX
LED0
LED1
LED2
RESET
50mA
12V
R1
0 Ohm
1/10W
R2
R3
R4
1/16W
100R
D1
D2
D3
30mA
2V
Q1
Q2
Q3
200mA
60V
R5
R6
R7
470R
C12
J10
J11
10897201
5V

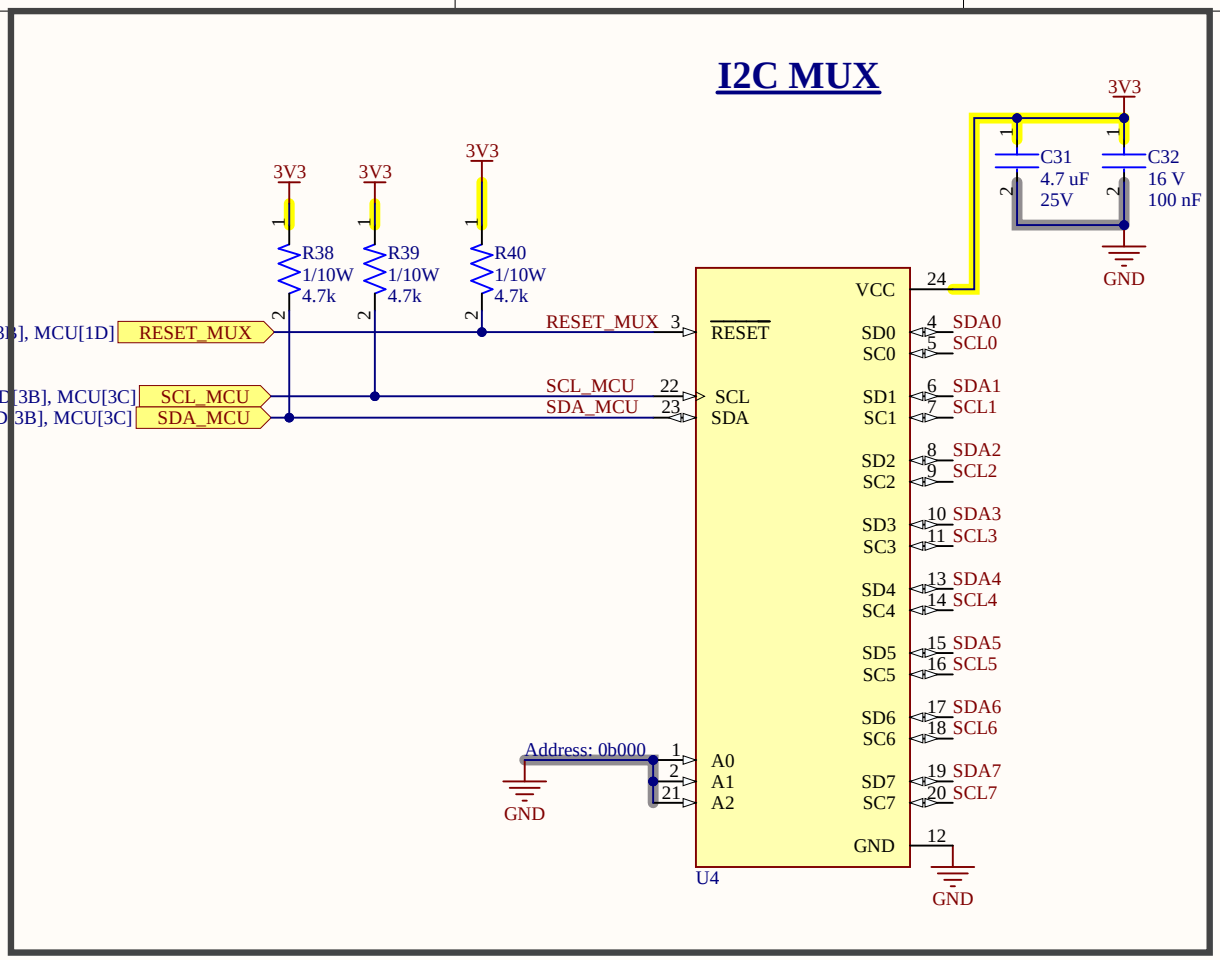
| Pin No. | Name | Type | UART Configuration Description |
|---|---|---|---|
| 13 | TXD | OUTPUT | TXD = transmitter output |
| 14 | RXD | INPUT | RXD = receiver input |
| 15 | RTS# | OUTPUT | RTS# = Ready To send handshake output |
| 16 | CTS# | INPUT | CTS# = Clear To Send handshake input |
| 17 | DTR# | OUTPUT | DTR# = Data Transmit Ready modem signalling line |
| 18 | DSR# | INPUT | DSR# = Data Set Ready modem signalling line |
| 19 | DCD# | INPUT | DCD# = Data Carrier Detect modem signalling line |
| 20 | RI# | INPUT | RI# = Ring Indicator Control Input. When the Remote Wake up option is enabled in the EEPROM, taking RI# low can be used to resume the PC USB Host controller from suspend. |
| 21 | ** TXDEN | OUTPUT | TXDEN = (TTL level). Use to enable RS485 level converter |
| 27 | ** RXLED | OUTPUT | RXLED = Receive signalling output. Pulses low when receiving data (RXD) from the external device (UART Interface). This should be connected to an LED. |
| 28 | ** TXLED | OUTPUT | TXLED = Transmit signalling output. Pulses low when transmitting data (TXD) to the external device (UART Interface). This should be connected to an LED. |

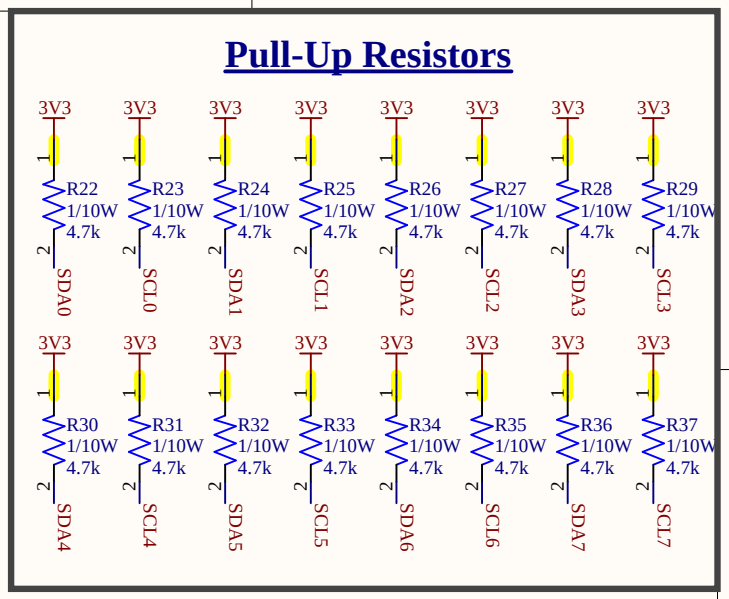
**Table 3.6 UART Configured Pin Descriptions**

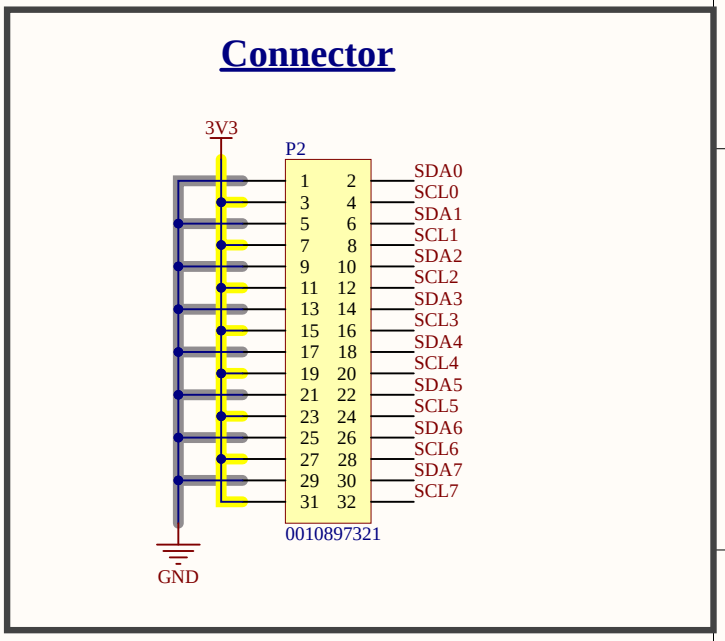


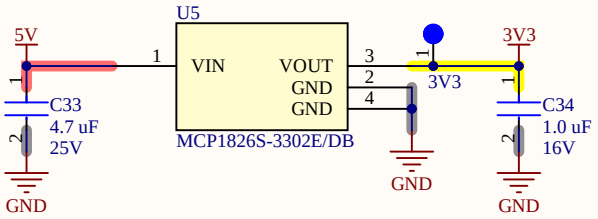




I2C MUX
3V3
R38
1/10W
4.7k
R39
1/10W
4.7k
R40
1/10W
4.7k
C31
4.7 uF
25V
C32
16 V
100 nF
GND
TLD[3B], MCU[1D]
RESET_MUX
TLD[3B], MCU[3C]
SCL_MCU
SDA_MCU
RESET_MUX 3
SCL_MCU 22
SDA_MCU 23
RESET
SCL
SDA
VCC 24
SD0 4 SDA0
SC0 5 SCL0
SD1 6 SDA1
SC1 7 SCL1
SD2 8 SDA2
SC2 9 SCL2
SD3 10 SDA3
SC3 11 SCL3
SD4 13 SDA4
SC4 14 SCL4
SD5 15 SDA5
SC5 16 SCL5
SD6 17 SDA6
SC6 18 SCL6
SD7 19 SDA7
SC7 20 SCL7
GND 12
Address: 0b000
A0 1
A1 2
A2 21
U4


Pull-Up Resistors
R22 1/10W 4.7k SDA0
R23 1/10W 4.7k SCL0
R24 1/10W 4.7k SDA1
R25 1/10W 4.7k SCL1
R26 1/10W 4.7k SDA2
R27 1/10W 4.7k SCL2
R28 1/10W 4.7k SDA3
R29 1/10W 4.7k SCL3
R30 1/10W 4.7k SDA4
R31 1/10W 4.7k SCL4
R32 1/10W 4.7k SDA5
R33 1/10W 4.7k SCL5
R34 1/10W 4.7k SDA6
R35 1/10W 4.7k SCL6
R36 1/10W 4.7k SDA7
R37 1/10W 4.7k SCL7

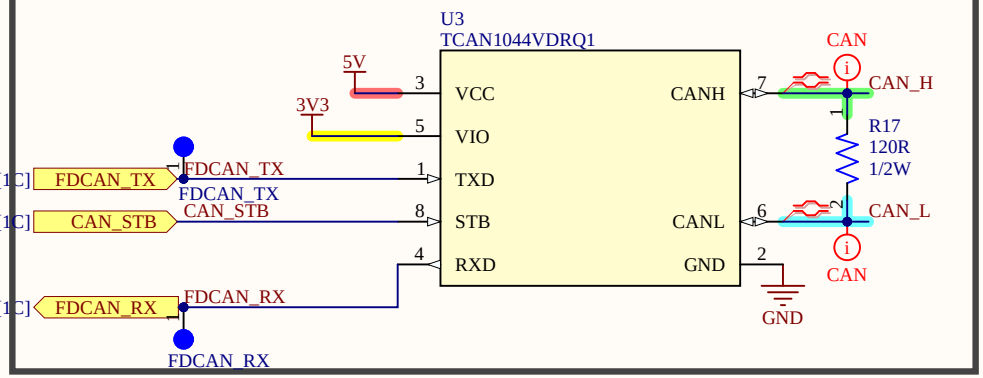

Connector
3V3
P2
1 2 SDA0
3 4 SCL0
5 6 SDA1
7 8 SCL1
9 10 SDA2
11 12 SCL2
13 14 SDA3
15 16 SCL3
17 18 SDA4
19 20 SCL4
21 22 SDA5
23 24 SCL5
25 26 SDA6
27 28 SCL6
29 30 SDA7
31 32 SCL7
0010897321
GND

## LDO 3V3



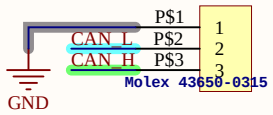

## Backup Power Headers

## CAN TRANSCEIVER



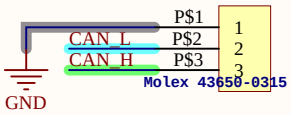

## CAN 1

X1

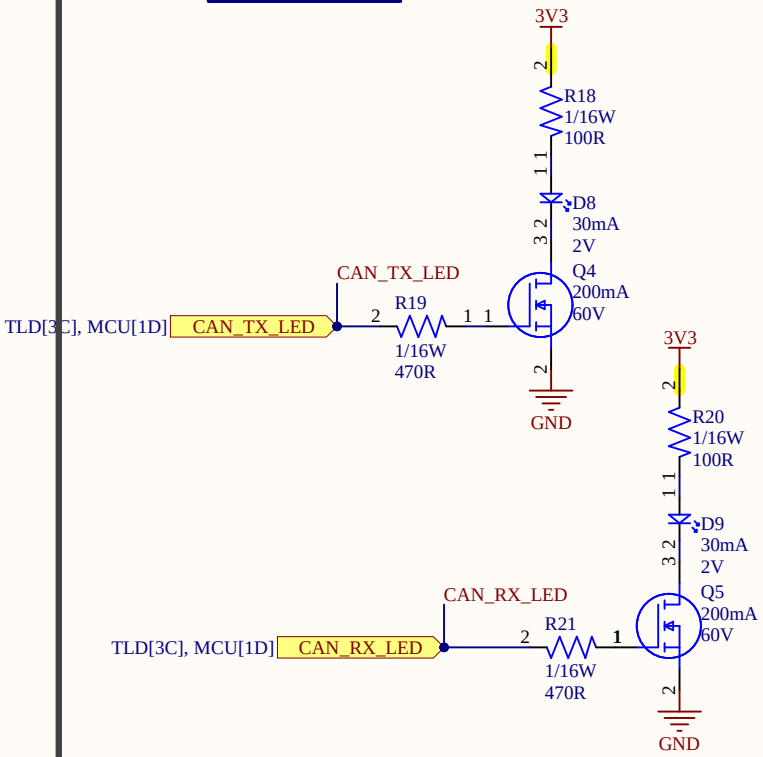



## CAN 2

X2




## CAN LEDS




| Pins | | Type | Description |
|---|---|---|---|
| Name | No. | | |
| TXD | 1 | Digital Input | CAN transmit data input |
| GND | 2 | GND | Ground connection |
| $V_{CC}$ | 3 | Supply | 5V supply voltage |
| RXD | 4 | Digital Output | CAN receive data output, tri-state when powered off |
| NC | 5 | — | No Connect (not internally connected); Devices without $V_{IO}$ |
| $V_{IO}$ | | Supply | I/O supply voltage |
| CANL | 6 | Bus IO | Low-level CAN bus input/output line |
| CANH | 7 | Bus IO | High-level CAN bus input/output line |
| STB | 8 | Digital Input | Standby input for mode control, integrated pull up |

| Line # | Name | Description | Designator | Quantity | Manufacturer 1 | Manufacturer Part Number 1 | Manufacturer Lifecycle 1 | Supplier 1 | Supplier Part Number 1 | Supplier Unit Price 1 | Supplier Subtotal 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 5003 | Oranange PC Test Point, Miniature Phosphor Bronze Silver Plating Through Hole Mounting Type | 3V3, 5V, 5V_USB, FDCAN_RX, FDCAN_TX | 5 | | | | | | | |
| | CC0402KRX7R7BB104 | CAP CER 0.1UF 16V X7R 0402 | C1, C3, C4, C5, C6, C10, C12, C14, C15, C16, C18, C20, C22, C23, C24, C25, C32 | 17 | | | | | | | |
| | CC0603KRX5R8BB475 | CAP CER 4.7UF 25V X5R 0603 | C2, C7, C13, C17, C19, C21, C31, C33 | 8 | | | | | | | |
| | GRM2195C1H103JA01D | CAP CER 10000PF 50V C0G/NP0 0805 | C8, C26, C30 | 3 | | | | | | | |
| | CC0603KRX7R7BB105 | CAP CER 1UF 16V X7R 0603 | C9, C11, C34 | 3 | | | | | | | |
| | CC0402JRNPO9BN101 | CAP CER 100PF 50V C0G/NPO 0402 | C27 | 1 | | | | | | | |
| | CC0402JRNPO9BN500 | 50 pF ±5% 50V Ceramic Capacitor C0G, NP0 0402 (1005 Metric) | C28, C29 | 2 | | | | | | | |
| | BL-HXC36G-AV-TRB | LED YELLOW CLEAR 0603 SMD | D1, D2, D3, D4, D5, D8, D9 | 7 | | | | | | | |
| | ESD321DPYR | 0.8-pF 3.3-V Â±30-kV ESD protection diode with 6.8-V 16-A TLP clamping in 0402 package for USB 2.0 | D6, D7 | 2 | | | | | | | |
| | ESDA7P60-1U1M | TVS DIODE 5 VWM 11.6 VC 1610 | D10 | 1 | | | | | | | |
| | 1050170001 | USB - micro B USB 2.0 Receptacle Connector 5 Position Surface Mount, Right Angle; Through Hole | J1 | 1 | | | | | | | |
| | FTSH-107-01-L-DV-K | Connector Header Surface Mount 14 position 0.050" (1.27mm) | J2 | 1 | | | | | | | |
| | 10897201 | 2.54mm Pitch C-Grid Breakaway Header, Dual Row, Vertical, High Temperature, 20 Circuits, Tin (Sn) Plating, 2.72mm PC Tail Length | J10, J11 | 2 | | | | | | | |
| | BLM18AG601SN1D | 600 Ohms @ 100 MHz 1 Ferrite Bead 0603 (1608 Metric) 500mA 380mOhm | L1, L2, L3 | 3 | | | | | | | |
| | Header 6 | Header, 6-Pin | P1 | 1 | | | | | | | |
| | 0010897321 | Header, 16-Pin, Dual row | P2 | 1 | | | | | | | |
| | Header 2 | Header, 2-Pin | P3, P4 | 2 | | | | | | | |
| | T2N7002AKLM | MOSFET N-CH 60V 200MA SOT23 | Q1, Q2, Q3, Q4, Q5 | 5 | | | | | | | |
| | RESC1607X60N | 0 Ohms Jumper Chip Resistor 0603 (1608 Metric) Moisture Resistant Thick Film | R1, R10, R11, R13, R15, R16 | 6 | | | | | | | |
| | RC0402FR-07100RL | RES 100 OHM 1% 1/16W 0402 | R2, R3, R4, R18, R20 | 5 | | | | | | | |
| | RC0402FR-07470RL | RES 470 OHM 1% 1/16W 0402 | R5, R6, R7, R19, R21 | 5 | | | | | | | |
| | RM04FTN2200 | 62.5mW Thick Film Resistors 50V ±100ppm/°C ±1% -55°C ~ +155°C 2200 0402 Chip Resistor - Surface Mount ROHS | R8, R9 | 2 | | | | | | | |
| | RC0603FR-0712KL | RES 12K OHM 1% 1/10W 0603 | R12 | 1 | | | | | | | |
| | RC0402FR-0710KL | RES 10K OHM 1% 1/16W 0402 | R14 | 1 | | | | | | | |
| | RC1210FR-07120RL | RES 120 OHM 1% 1/2W 1210 | R17 | 1 | | | | | | | |
| | RC0603FR-074K7L | RES 4.7K OHM 1% 1/10W 0603 | R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40 | 19 | | | | | | | |
| | 430182095816 | WS-TASV SMT Tact Switch, 6mm x 6mm, 160gf, SPST-NO, 12V, 50mA | RESET | 1 | | | | | | | |
| | STM32G431RBT6 | Mainstream Arm Cortex-M4 MCU 170 MHz with 128 Kbytes of Flash memory, Math Accelerator, Medium Analog level integration | U1 | 1 | | | | | | | |
| | FT232HL-REEL | IC, Interface; USB Hi-Speed To Uart/Fifo/Spi/Jtag, I2c; 1.8v-5.25v, 25ma; Lqfp-48 | U2 | 1 | | | | | | | |
| | TCAN1044VDRQ1 | IC TRANSCEIVER 1/1 8SOIC | U3 | 1 | | | | | | | |
| | TCA9548APWR | 8-channel 1.65- to 5.5-V I2C/SMBus switch with reset & voltage translation | U4 | 1 | | | | | | | |
| | MCP1826S-3302E/DB | Linear Voltage Regulator IC Positive Fixed 1 Output 1A SOT-223-3 | U5 | 1 | | | | | | | |
| | Molex 43650-0315 | Molex 43650-0315 | X1, X2 | 2 | | | | | | | |
| | 830010043 | WE-XTAL Quartz Crystal, SMT, HC49/4H-SMX, 12 MHz, ±30ppm | Y1 | 1 | | | | | | | |