

3.3V Power Supply

J1 USB_B_Micro

FB1 Ferrite_Bead

U1 3.3V 1A

C1 47pF

C3 4.7uF

C2 4.7uF

LED Driver

U2 74HC595

R10 10k

ESP8266 MCU

U3 ESP-WROOM-02D

J2 Conn_01x04

R13 10k External pull down on GPIO15 for boot options

LEDs

R2 75R R3 75R R4 75R R5 75R R6 75R R7 75R R8 75R R9 75R

D1 LED D2 LED D3 LED D4 LED D5 LED D6 LED D7 LED D8 LED

User Switch

R1 10k

SW1 SW_Push_Dual

Programming

R12 10k

SW3 SW_SPST

R11 10k

SW2 SW_SPST

C6 0.1uF

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Chandler McCowan
ESP8266 Network Traffic Visualizer

Sheet: /
File: PacketVis.sch

Title: PacketVis

Size: A4 Date: 2019-11-21
KiCad E.D.A. kicad (5.1.6)-1

Rev: A01
Id: 1/1

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The power supply section shows a USB Micro-B connector (J1) connected to a 3.3V 1A voltage regulator (U1). The regulator's input (VI) is connected to the +5V line from the USB, which also passes through a ferrite bead (FB1) and a 4.7uF capacitor (C3). The regulator's output (VO) is connected to the +3.3V line, which also has a 4.7uF capacitor (C2). A 47pF capacitor (C1) is connected to the USB D+ and D- lines.

LED Driver

The LED driver section shows a 74HC595 (U2) connected to the +5V and +3.3V lines. The driver's VCC is connected to +5V, and its GND is connected to GND. The driver's output pins (QA-QH) are connected to the LEDs (LED_1 to LED_8). The driver's control pins (SER, SRCLK, SRCLR, RCLK, OE) are connected to the ESP8266 MCU.

ESP8266 MCU

The ESP8266 MCU (U3) is connected to the +3.3V and +5V lines. The MCU's 3V3 pin is connected to +3.3V, and its EN pin is connected to +5V. The MCU's TXD and RXD pins are connected to the USB D+ and D- lines. The MCU's GPIO pins are connected to the LEDs and the LED driver. An external pull-down resistor (R13) is connected to GPIO15 for boot options.

LEDs

The LEDs section shows eight LEDs (LED_1 to LED_8) connected to the +3.3V line. Each LED is connected to the +3.3V line through a 75R resistor (R2 to R9). The LEDs are connected to the LED driver's output pins.

User Switch

The user switch section shows a push button switch (SW1) connected to the +3.3V line. The switch is connected to the +3.3V line through a 10k resistor (R1). The switch's other terminal is connected to GND.

Programming

The programming section shows a push button switch (SW2) connected to the +3.3V line. The switch is connected to the +3.3V line through a 10k resistor (R11). The switch's other terminal is connected to the ESP8266 MCU's EN pin. A 0.1uF capacitor (C6) is connected to the EN pin to GND.

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LED Driver

The LED driver section shows a 74HC595 (U2) connected to the +5V and +3.3V lines. The VCC pin (16) is connected to +5V, and the GND pin (9) is connected to ground. The driver's output pins (QA-QH) are connected to the LEDs. The driver's control pins (SER, SRCLK, SRCLR, RCLK, OE) are connected to the ESP8266 MCU.

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The ESP8266 MCU (U3) is connected to the +3.3V and +5V lines. The 3V3 pin (1) is connected to +3.3V, and the EN pin (2) is connected to +5V. The RST pin (15) is connected to ground. The RXD pin (11) is connected to the ESP_TX pin of the USB connector (J2), and the TXD pin (12) is connected to the ESP_RX pin of the USB connector (J2). The GPIO pins (GPIO0-GPIO16) are connected to the LED driver's output pins. The TOUT pin (16) is connected to ground. An external pull-down resistor (R13) is connected to GPIO15 for boot options.

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