

ESP32 Microcontroller

The brains of the system. Handles wireless communications, computations and input/output duties. Uses WiFi to fetch data but can be connected to over Bluetooth to configure it.

LED Display

The only way to relay information to the user. Uses a 5V shift register to drive segments, MOSFETs are used to select the digit. Each digit is a prediction time, decimals indicate "add 10" so "2." is 12 minutes.

Power Supply

Use a standard mini-USB power supply to power the system.

User Buttons

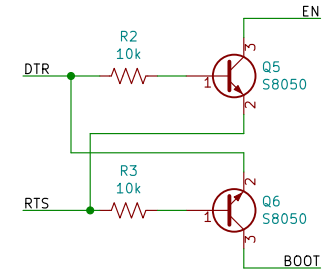
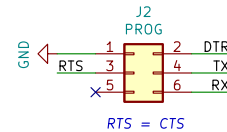
User input buttons, one for each stop/route group. For development/debugging buttons 3 and 4 can be rerouted to hasten programming.

Alternate ("DEBUG") modes for switches 3 and 4:
 3 - BOOT (Hold when restarting to program over serial)
 4 - EN (Restart ESP32 when pressed)

Programming

Programming interfaces and hardware to enable UART programming

DO NOT CONNECT TO PROG BEFORE SUPPLYING POWER!



Mounting Holes

H1 and H3 are 5.5mm from sides
 H2 is centered. All are 7mm from the top edge.



Board to display the next four predictions for TTC stops in minutes
 Users interact using a button to select a group of interest
 Users should be able to configure it over bluetooth with a phone
 System is programmed using UART

Title: TTC Prediction Sign

Savo Bajic	Date: 2021-05-31	Rev: 1.1
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