### What Protocontrol Includes

### Accessing the Website

### Setting up Arduino

### Setup out of the Box

### Starting

### From Website to Upload

### What exactly is the string from the database/server

### Sending Data To Protocontrol

You can use protocontrol’s touch screen to display data from your system. This feature is particularly useful for analog sensors.

### Receiving Data

Analog

digital

### UART Basics

### I2C Basics

### Common Issues

UART decoding guide

Overview and diagram explaining the ID+VALUE encoding system

Map of digital and physical components that shows their ID

User system example code with images that show the device profile (whats on the screen and whats connected) and decoding functions that assign functionality based on ID

Overall mapping guide for figuring out how to connect up components

Quick guide for experienced users

Component ID map

Very simple decoding examples

1. Out of the Box Setup
   1. List of included items + Photo
   2. Diagram pointing to ports and connections on screen
      1. UART port details for connections - link to more in depth section on decoding UART signals
      2. I2c port details - define each attachable component with its UART ID
   3. Power supply details
2. Initial Boot Up/Upload code for the first time
3. Configuring the Touchscreen
4. Configuring and Debugging I2C Peripherals
   1. Scan function and print statements
   2. I2C Port Layout
5. UART Crash Course
6. How to Actually Edit the Code on the User Side (Arduino and C)
   1. Components that send multiple pieces of data
   2. Initializing Protocontrol
   3. What happens on this side when we edit protocontrol (swap hardware peripherals, change touch screen layout)
7. Breaking down the receive Function
8. Breaking down the send Function
9. 1 Complete User Example (using touchscreen as display and controller)
10. Supplemental Information (items 12-14 will be updated later)
    1. Arduino (which IDE version)
    2. How does I2C work (they don’t NEED to know how this works)
11. Debugging
12. FAQs
13. Maintenance?

User Manual V2 will include:

Additions to UART section

\*\* show examples of other serial communication for other microcontrollers \*\*

\*\* Explain how to set up the display and string \*\*

\*\* what are the default start, parity and stop bits from the library we are using \*\*

I2C Basics

Insert Photographs of touchscreen

I'm debating adding a proper example for this, maybe we add a screenshot of the database and show how things are differentiated by Device ID and Profile

Check that the user system works (fritzing diagram)