Watering System Display instructions

Overview

The DIYmalls Nextion Intelligent 5 inch HMI Display 5V Capacitive Touch Screen TFT LCD 800x480 for Arduino Raspberry Pi (NX8048P050-011C) was used as the touch screen for the watering system project.

Arduino Integration

There are 4 wires that are connected to the display. Power (red), Ground (black), RX (yellow), and TX (blue). The arduino ground and the display ground must be connected together for this to work. The TX of the display goes to the RX of the arduino, and the RX of the display goes to the TX of the arduino. 5V is the rating of the display connector, and it sinks about an amp (estimation of current draw). Pins 0 and 1 are used as TX and RX respectively on the arduino. Use Serial1 to utilize the pins to send and receive data as per the code. The Serial monitor can be used to see what is sent and received.

Nextion Software

The Nextion display has their own software GUI that is used to create UI's and output information. The download is here: https://nextion.tech/nextion-editor/

To send information to the arduino, write code in the touch events section. This section can be found in the bottom right corner of the element you are choosing to change. Elements include sliders, buttons, progress bars, etc.

To upload the GUI, first hit compile, then click file and see TFT output. The TFT file is what is used to put on an SD card (8 GB or less to format in FAT32) to upload to the display. The MicroSD should be inserted to the display with the power turned off initially. As a side note, only one file (the TFT) should be on the microSD card. Next, turn on the display by connecting it to power. After the upload sequence is done, remove the power and take out the SD card. Turn back on the display, and you should see the new UI.

Documentation for the display: https://nextion.tech/instruction-set/

Helpful video: https://www.youtube.com/watch?v=fiAqh9P8of0

Important Note: Do not use the Nextion Library for this project. It does not work with Arduino Nano.