# Welcome Screen

None

# Connect Screen

Click the “Scan” button.

Select the COM port from the “Communication Port” dropdown menu.

Click the “Connect” button.

UART from GUI to ESP: “Penny is a freeloader.”

UART form ESP to GUI: “No Spaces”

If the device was successfully connected, then the “Disconnect” button will be enabled.

Press the “Save + Exit” button to go back to the welcome screen.

# Calibrate Screen

On the “Sensor” dropdown menu, select the sensor that needs to be calibrated.

Once selected, the GUI will retrieve the coefficients and calibration formula.

UART from GUI to ESP: “R#SensorIndex”. SensorIndex is 0 for temperature and 1 for turbidity.

UART form ESP to GUI: “RR#Coef1#Coef2#Coef3#Coef4#” for example “RR#100#-200.1#0#0#”

Make changes to the coefficients and when ready to save, press the “Save” button.

UART from GUI to ESP: “C#SensorIndex#Coef1#Coef2#Coef3#Coef4#”

To read the value from the sensor, press the “Read Value” button.

UART from GUI to ESP: “S#SensorIndex”.

UART form ESP to GUI: “SR#Raw#Processed#” for example “SR#100#-200.1#”

Press the “Exit” button to return to the welcome screen.

# Monitor Screen

Upon opening the monitor screen, the current status of the device is retrieved.

UART from GUI to ESP: “MR#”.

UART form ESP to GUI: “MW#DateAndTime#Battery#SDStatus#SDCapacity#SDUsed#SDUsed%#” for example “MW#2023/08/22 16:42#100%#Mounted#16GB#1GB#1%#8#1#”

The monitor screen will update every 10 seconds.

Press the “Exit” button to return to the welcome screen.

# Data Screen

Upon opening the data screen, the current data files from the device are retrieved.

To refresh the data files list, press the “scan” button.

UART from GUI to ESP: “FR#”.

UART form ESP to GUI:

“FW#File1#File2#...........#” for example “FW#Test.txt#Hello.txt#SamplingData.txt#”

Select the appropriate file name from the drop-down menu.

Press the “Read File” button.

UART from GUI to ESP: “DR#textFileName#” for example “DR#Test.txt#”.

UART form ESP to GUI: “DW#Line1#Line2#......#” for example “DW#This is line 1.#This is line 2.#”

Press the “Download” button to save the data to your laptop.

# Configure Screen

Upon opening the configure screen, the configuration settings are retrieved.

UART from GUI to ESP: “CR#”.

UART form ESP to GUI: “CW#FileName#Date#Location#SampleCount#Interval#” for example “CW#Test.txt#28/08/2023#Stellenbosch#4#360#”

Press the “Pull Config” button to retrieve the current configuration from the ESP.

UART from GUI to ESP: “CR#”.

UART form ESP to GUI: “CW#FileName#Date#Location#SampleCount#Interval#” for example “CW#Test.txt#28/08/2023#Stellenbosch#4#360#”

To restore the default configurations, press the “Restore button”.

To save the current configurations, press the "Save” button.

UART from GUI to ESP: “CS#FileName#Date#Location#SampleCount#Interval#

Press the “Exit” button to return to the welcome screen.