CTD Test Tool

What to Test:

This test tool is aiming to test on whether the test CTD could give the reasonable output as the standard CTD when sample at the same time.

Executable File:

TestCTD.exe(application), this file could be open in any windows computer without install the required library(libraries contained in the exe file)

TestCTD.py(python file), if you would like to run this file, you need to install all the libraries in your current computer and run it by an IDE or in Command Prompt.

Before Use:

1. Make Sure your computer is connected to the mtc-vpn, which is for connecting to the serial server purpose. (If not, the program will pop up an error message)
2. Make sure you have the information of *Host IP Address*, *Standard CTD Port Number*, *Test Port Number*, *Test CTD Model Name*(currently support: SBE-19, SBE-37 and AML Metrex-X).
3. The default Host IP Address is 10.136.20.111(changeable in GUI) , and the default standard CTD port number is 4001(changeable in GUI) with the SBE-37 model(unchangeable in GUI).
4. The [ENTER] button will prompt up after you select the CTD model.
5. The default sample time is 20(unchangeable in GUI).

Note: It may take a while for running the code and generate the report, and it takes time for the progress bar starts to progress initially.

During Program Running:

1. After you hit [ENTER]. The cursor will turn to a circle indicating it is running, then the progress bar will be start changing, which indicating it is start sampling.
2. If the progress bar stuck in some point, then it encounters some errors, refer to **Exception Handle 3.**
3. When the dotted line and result pop out, it indicates the program is finish running. The result will briefly tell you whether corresponding test is passed or failed and whether is successfully generate the report.

Report Related:

1. The test report can be found under the same folder of the program. The name of the report is like: yyyy-mm -dd_SBE##_SNxxxx_PASS where ## = model and xxxx = serial number
2. The report contains three part: Test Data, Test Figure and Test Result.
3. The standard current to determine whether the CTD is pass or not is checking the difference of test CTD's data and standard CTD's data.
   a. For Temperature and Conductivity, if the difference is within 1%, then the test is passed.
   b. For the pressure, if the pressure is within 0~3(1% of the full range), then the test is passed.
   c. If all the Temperature, Conductivity and Pressure (if exists) Tests passed, then result will be passed.

Exception Handle:

1. If the power is off when running this program, the program will show: ConnectionResetError: [WinError 10054] An existing connection was forcibly closed by the remote host. Simply reboot and run the program when get power back.
2. After typing in the corresponding input, before the program really do the sampling, it will check the validity of user input. If the user input is invalid, the program will prompt a window showing an Error Message.
3. If there is any error(excepting the invalid input) prompt out, reboot the program and run again.