Instructions to Setup Ruby-ASTM Library as well as Ubuntu

Installing Ubuntu:

Follow the instructions on the following page to install Ubuntu 18.04 first on a pendrive and then use that to install Ubuntu onto the target PC.

https://www.linuxtechi.com/ubuntu-18-04-lts-desktop-installation-guide-screenshots/

Installng Basic Software Packages, and Ruby:

Visit the following link(https://github.com/wordjelly/Setup-Ubuntu-18.04):
Download the contents as a zip file, by clicking on the download code button.
The package will contain 3 sh scripts. These can be run via the Ubuntu Terminal.

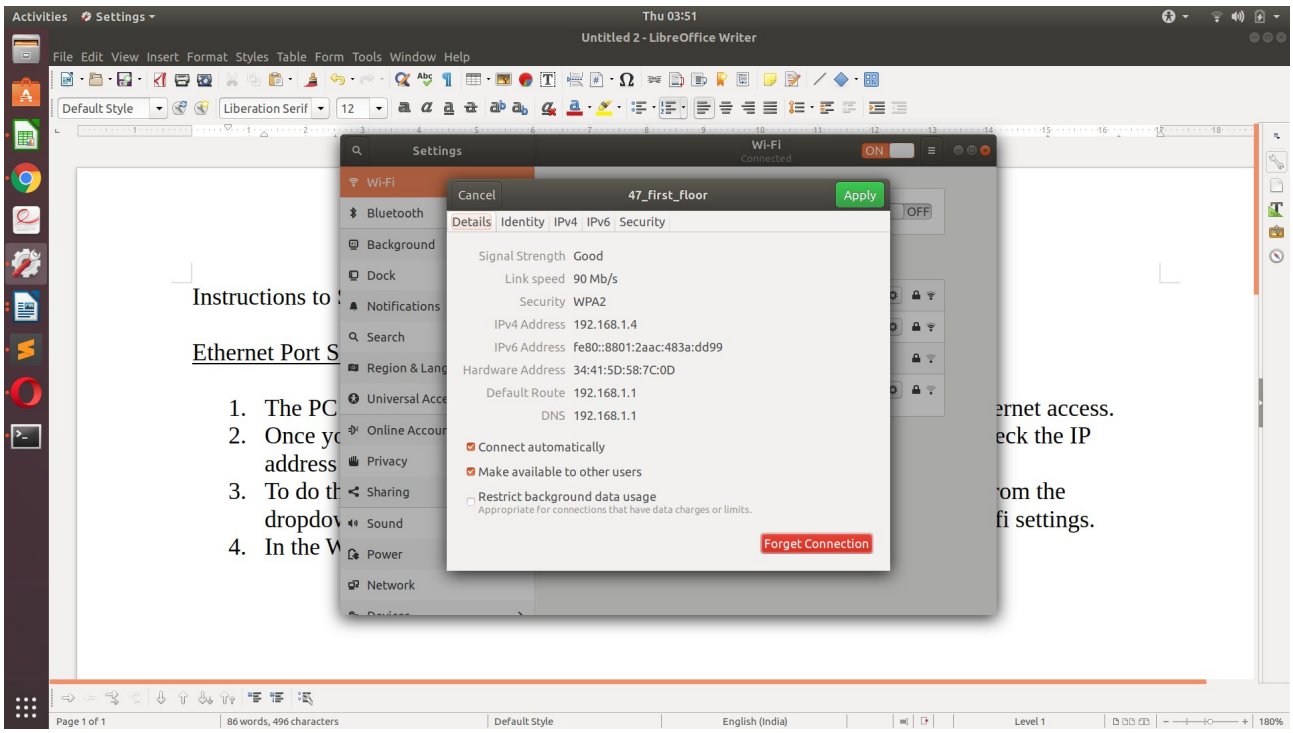
Follow the instructions on the page, to run the first two scripts only.

Please note that the first script must be run as a "root" user, and the second as a "non-root" user.

The instructions are clear on the page.

Ethernet Port Settings:

1. The PC should be connected to a local ethernet connection, that also has internet access.
2. Once you are connected to the internet, through this ethernet connection, check the IP address of your machine.
3. To do this, on Ubuntu Desktop, click on the top right corner of the screen, from the dropdown select the name of your internet connection -> then choose -> Wifi settings.
4. In the Wifi settings menu, you will see a list of wifi/ethernet connections, with a tick mark next to the one you have connected to.
5. Click on the settings wheel icon, and a window will open similar to the one below



Please note the IPV4 address in this window. For eg, here it is : 192.168.1.4

Write down this IPV4 address somewhere you can remember.

Configuring the XN-L to send data via an Ethernet Connection

The Sysmex manual for LIS connectivity, has detailed step-by-step instructions on how to setup the machine to send data to a LIS.
Please follow those instructions exactly.
When you reach the screen to enter the IP address, enter the IP address we obtained previously.
Make sure that the XNL is connected on the backside, to an ethernet cable, and that that ethernet cable plugs into the same ethernet router to which the PC is connected.

Installing the Ruby-ASTM gem

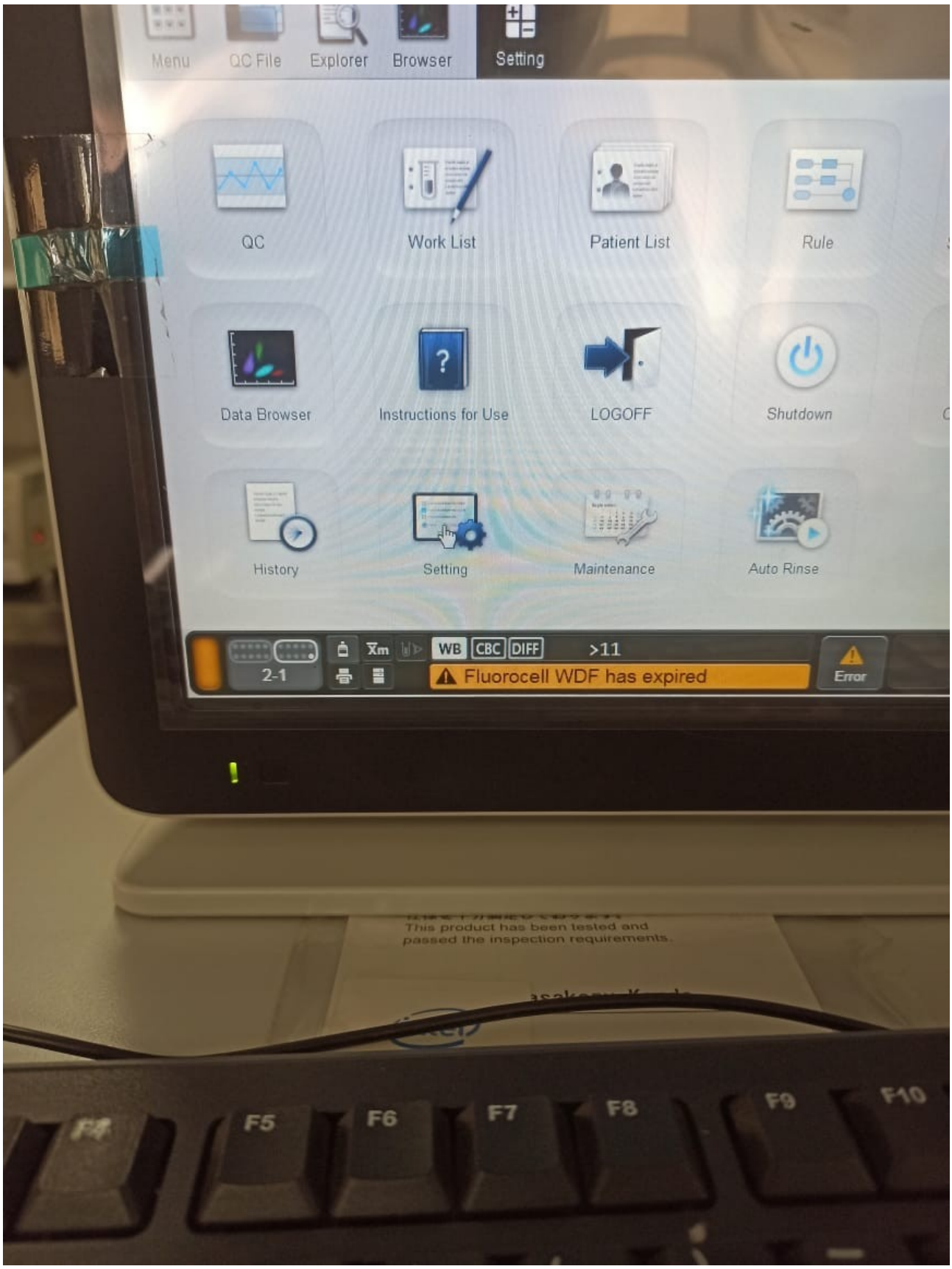
1. Open a terminal window
2. Enter the following commands:
   ruby -v

3. Press Enter
4. This should return the current version of ruby currently installed.
5. If the command returns an error, it means that instructions to install Ubuntu as mentioned above were not correctly followed, and you need to troublshoot.
6. If the command returns something like :
   ruby 2.4.6p354 (2019-04-01 revision 67394) [x86_64-linux]
   , then it means that ruby is correctly installed.

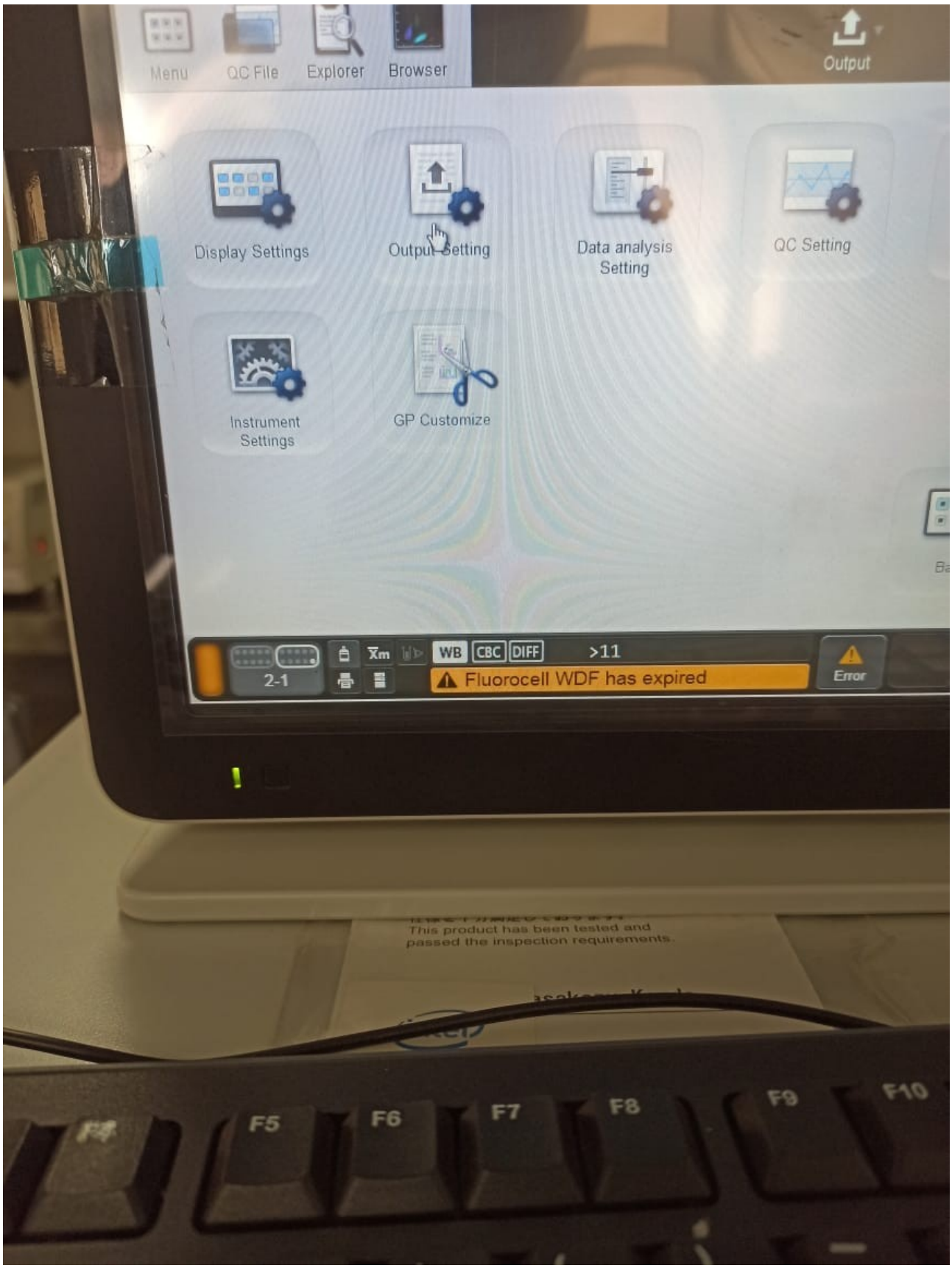
7.
   First uninstall any previous version of the gem that you may be carrying:
   From the terminal type:
   gem uninstall ruby_astm
   Press Enter
   Now navigate to the directory where you have downloaded the entire repository from bitbucket:
   cd *path/to/gemfile/directory/RUBY-ASTM*
   In the repository, at the top level you will see a file like "ruby_astm-1.6.4.gem". Fire the following command.
   gem install [NAME].gem
   Press Enter
8. The ruby_astm gem should get installed and this will take some time, if it is successfull you will see something like the following:
   ... Successfully installed.
9. This completes the installation of the ruby-astm gem, as well as the setup for the Ipv4 address and the machine integration.

Appendix 1(Screegrabs of Setting Up a Sysmex XN analyzer with an LIS over ethernet)

1. Click on Settings:

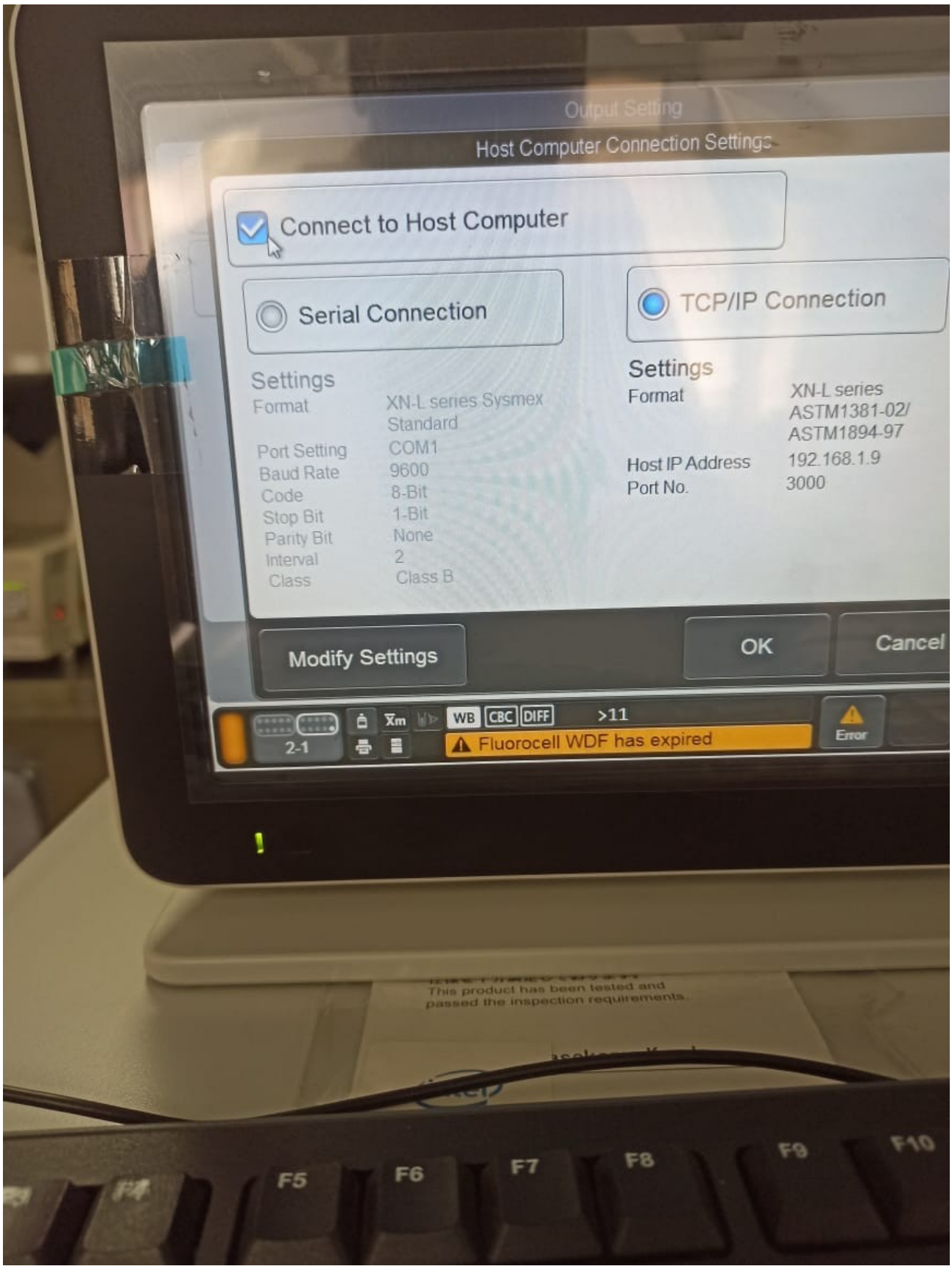


2. Click on Output Settings

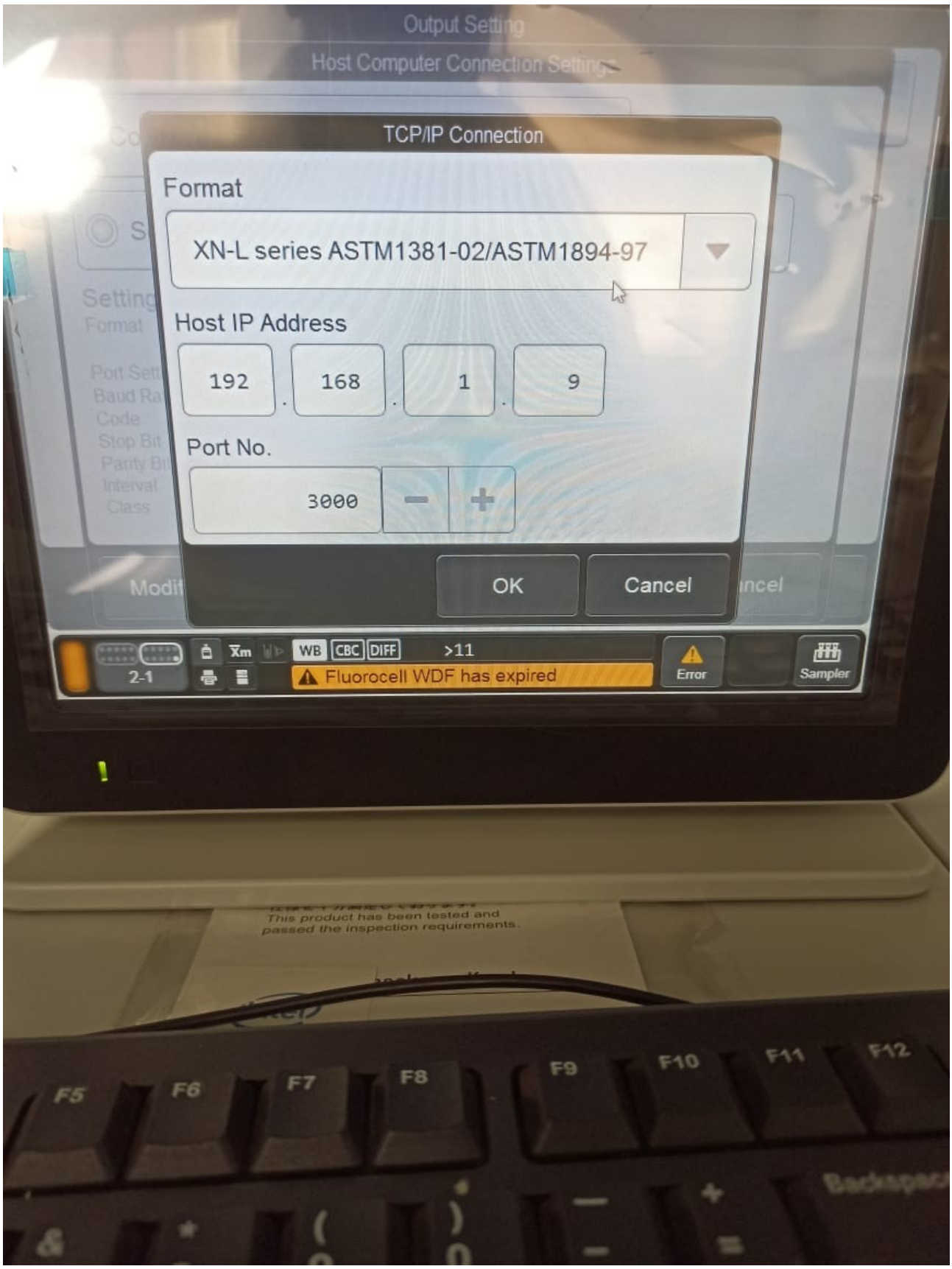


3. Click on Host Computer(No image is available for this step)

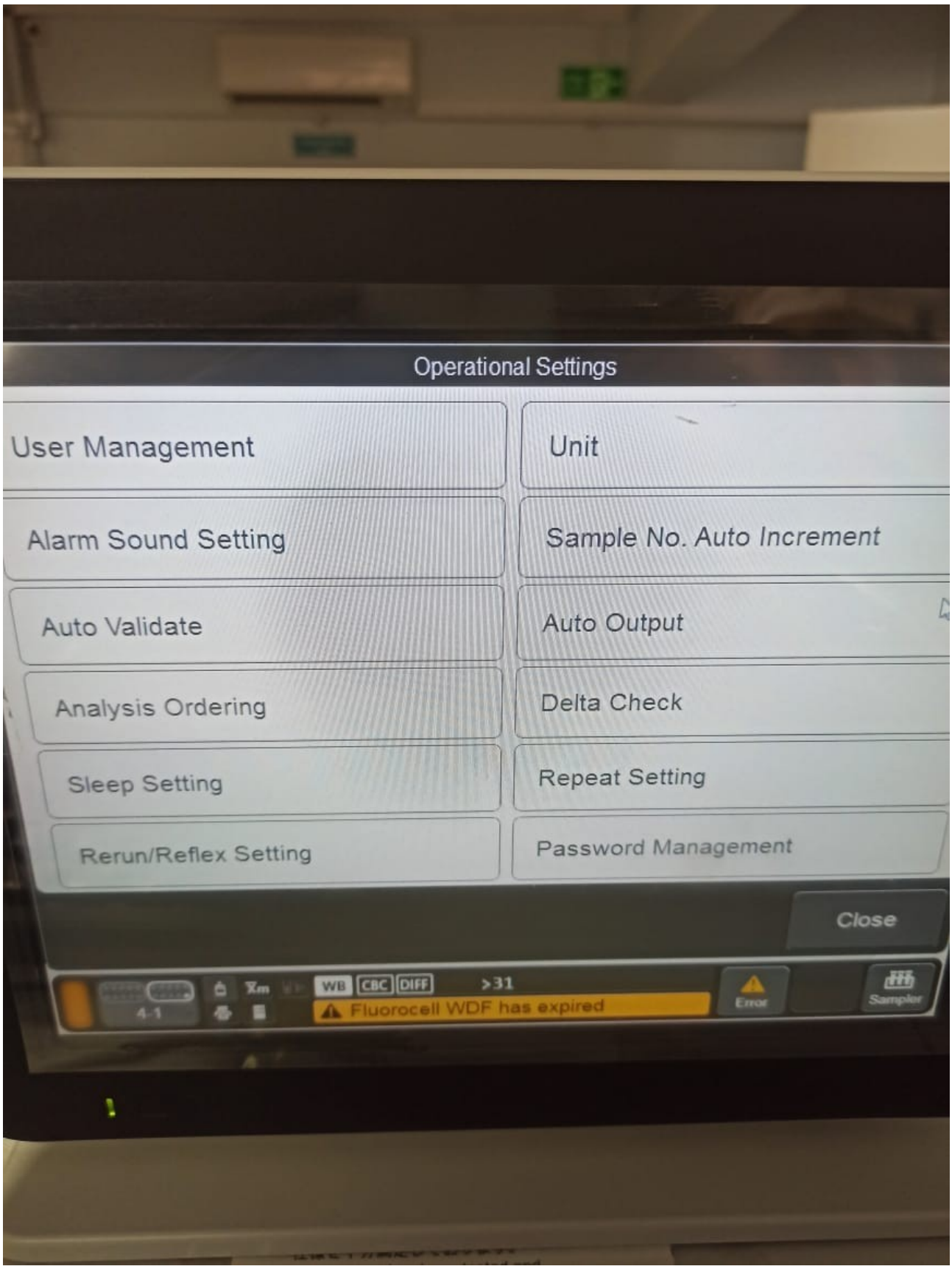
4. Check the boxes as show

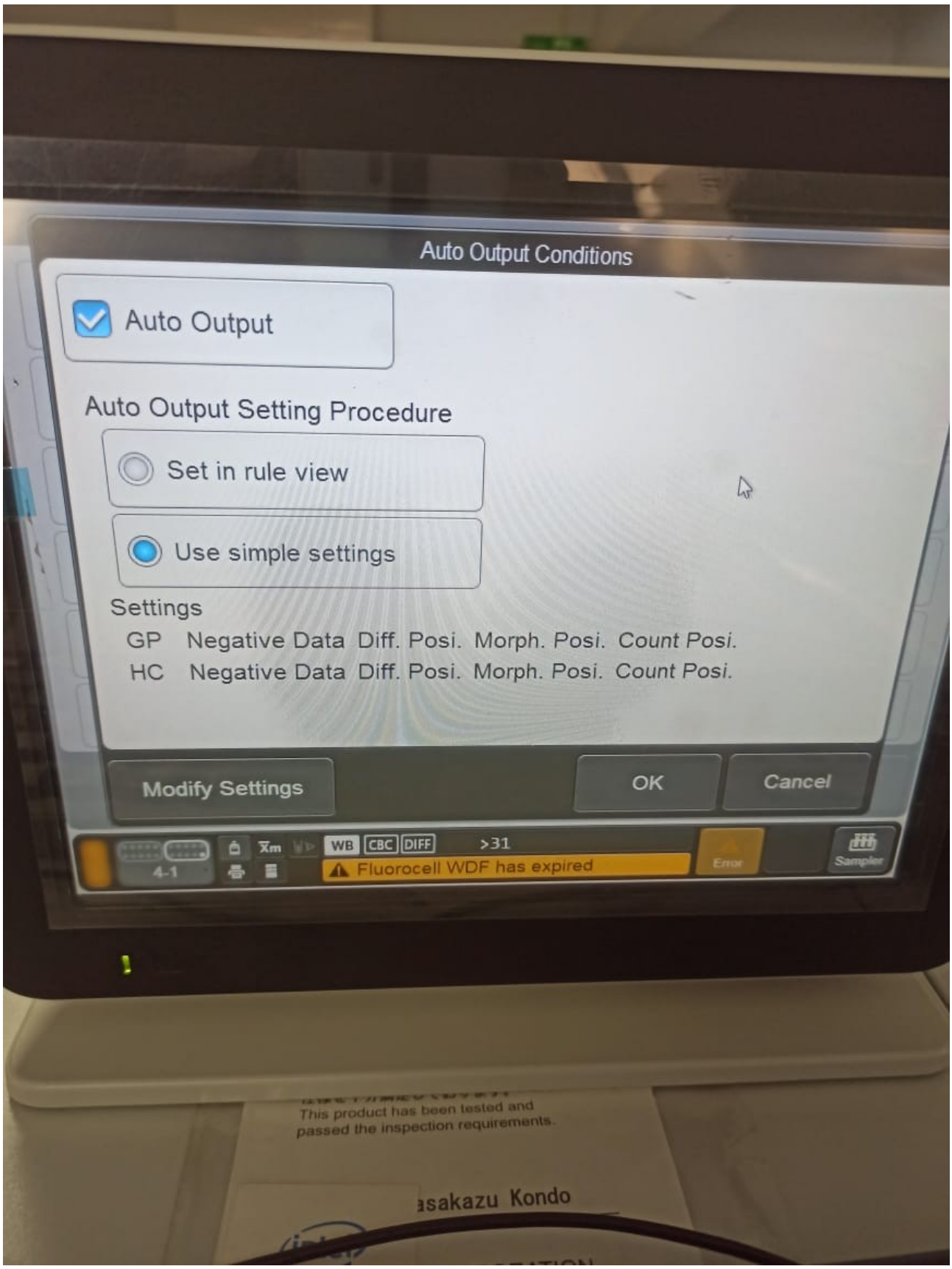


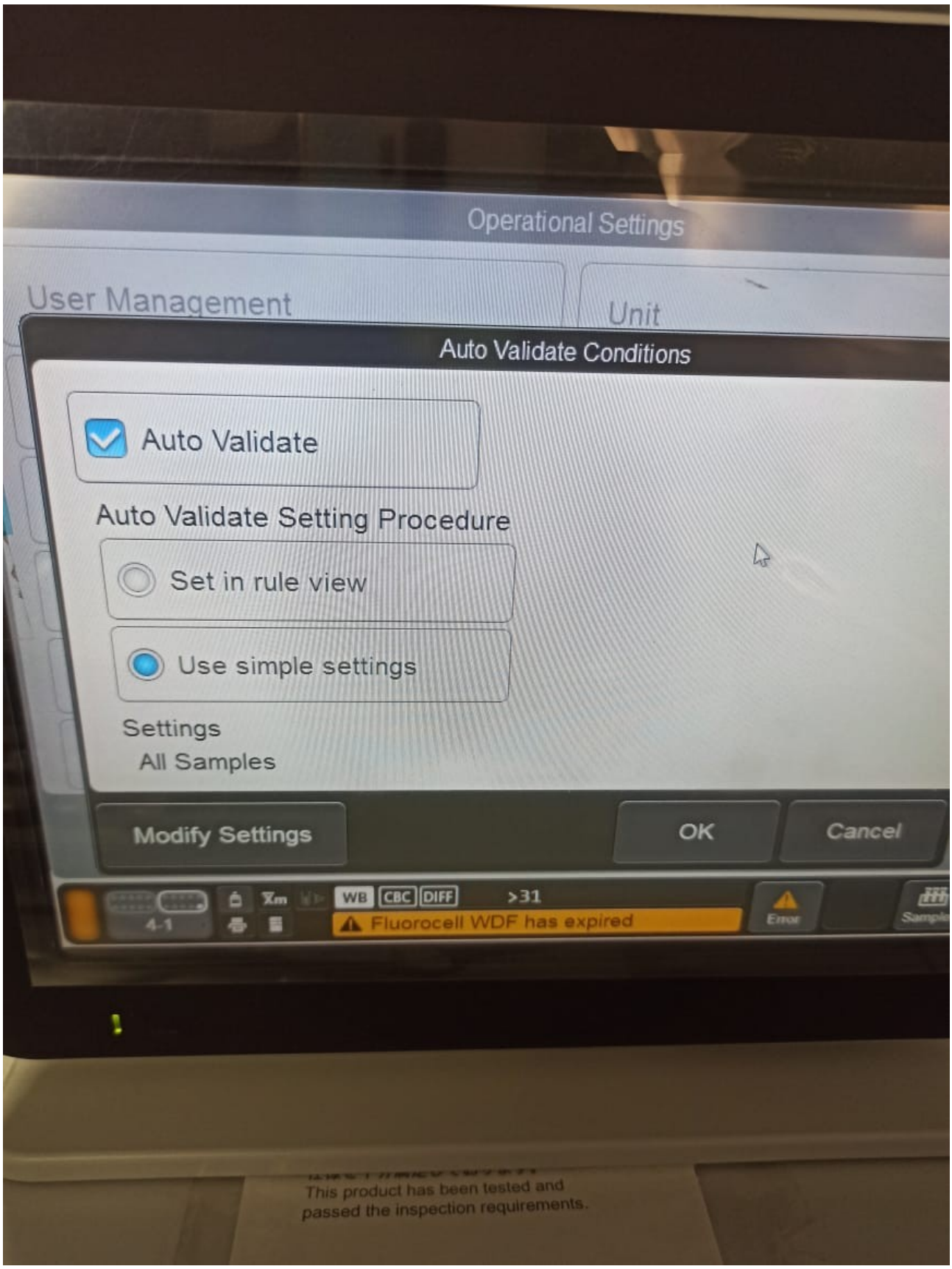
5. Enter IP ADDRESS



6. Come back to settings, and also visit Operational Settings and these pagess to setup


Operational Settings
User Management
Unit
Alarm Sound Setting
Sample No. Auto Increment
Auto Validate
Auto Output
Analysis Ordering
Delta Check
Sleep Setting
Repeat Setting
Rerun/Reflex Setting
Password Management
Close
WB
CBC
DIFF
>31
Fluorocell WDF has expired
Error
Sampler


Auto Output Conditions
Auto Output
Auto Output Setting Procedure
Set in rule view
Use simple settings
Settings
GP Negative Data Diff. Posi. Morph. Posi. Count Posi.
HC Negative Data Diff. Posi. Morph. Posi. Count Posi.
Modify Settings
OK
Cancel
WB CBC DIFF >31
Fluorocell WDF has expired
Error
Sampler
4-1
This product has been tested and
passed the inspection requirements.
asakazu Kondo


Operational Settings
User Management
Unit
Auto Validate Conditions
Auto Validate
Auto Validate Setting Procedure
Set in rule view
Use simple settings
Settings
All Samples
Modify Settings
OK
Cancel
WB
CBC
DIFF
>31
Fluorocell WDF has expired
Error
4-1
This product has been tested and
passed the inspection requirements.

Prerequisite to Run Server:

From any terminal window run:
redis-server[NO LONGER REQUIRED]

How to Run the Server:

1.10. To run the server, navigate again to the same directory as in step 7 of (Installing the Ruby-ASTM gem). Go to the test/ directory, and in it there is a runner.rb file.

2.Make sure that you are signed into linux as the same user that has setup the ruby process

3.Open any text editor, and edit the following fields, depending on your preferences:

:server_ip => “IP ADDRESS OF YOUR LOCAL MACHINE, AS DETERMINED IN INSTRUCTIONS ABOVE”

:output_directory => “/path/to/directory/where/csv/files/should/get/loaded”

These are the only two settings that you need to change.

4. Once these settings are done, open a terminal window, (as the same user), and type:

ruby runner.rb
Then press enter.

You can never close this terminal window, as the process will run in it. If you close the terminal window, the process will be killed.
To stop the process, just press ‘Cntrl+C’.

5. If you want to enable logging, it will generate a log file for debugging. To do this make the following two additional settings:

:enable_logging => true,
:log_output_director => “/path/to/diretory/where/log/file/should/get/loaded”

Source Code:
I have invited you to a private bitbucket repository that contains the code.

Instructions for the SYSMEX-XP300:

In addition to the entire instructions set selected above, note the following:

1. Select ““1381-95”” in the Host-Computer Settings (like above), in the comms protocol.(THIS IS MOST IMPORTANT AND NOT DOING THIS WILL CAUSE ASTM NOT TO WORK AT ALL)
2. Ensure that the IP address is enetered for the host machine , as above, in the relevant panel for entering the IP address and port.

3. Do not start any seperate server or any other ruby file. The same server/ruby file as for the xn550 will work for this machine also.
4. Ensure that specimen ID’s do not have any nonASCII characters in them. This will cause an issue in the sample id parsing.
5. List of Parameters provided for the XP-300

COMMON WITH XN550
WBC
RBC
HGB
HCT
MCV
MCH
MCHC
PLT
RDW-SD
RDW-CV
PDW
MPV
PCT

DIFFERENT FROM XN550
W-SCR
W-MCR
W-LCR
W-SCC
W-MCC
W-LCC
P-LCR
W-SMV
W-LMV

Note: * The following statement in the specification manual of the XP300 says:

“This diagram assumes that the data link layer conforms to E1381-02. In ASTM E1381 non-compliant mode,
ENQ, ACK and EOT processing are not performed.”

Based on the above :
It is possible, that in the LAN Mode, the library may not perform as expected, as the machine is not ASTM compliant. In this case you will have to switch to using a serial cable for the XP300 as per their wire diagram, and run a serial connection