Memmert Incubators

From labwiki

Instructions for using the Memmert incubators.

Contents

- 1 Network Information
- 2 Interacting via Celcius
- 3 Generating Temperature Series
- 4 Running a Temperature Series
- 5 HOBOware

Network Information

There are 6 network-capable incubators, they are numbered 1-6, incubator 1 is in the bottom-left corner of the matrix, 3 is on the bottom-right, 4 is on the top-left, and 6 is on the top-right. Their networking information is currently (April 2014) taped to the front of each incubator. Here is that information once more (Incubator # | MAC address | Assigned IP):

1 | 08 BB CC 05 28 9D | 129.97.24.194

2 | 08 BB CC 05 28 A4 | 129.97.24.191 (CURRENTLY NOT WORKING)

3 | 08 BB CC 05 28 A5 | 129.97.24.189

4 | 08 BB CC 05 28 9F | 129.97.24.198

5 | 08 BB CC 05 28 9E | 129.97.24.197

6 | 08 BB CC 05 28 A3 | 129.97.24.195

Each networking card's interface can be reached by going to their IP address in a browser. The password is currently still set to it's default value of "XT".

Note that incubator #2 is currently unreachable in the Celcius software. The IP responds to pings, and the network interface can be reached by going to the IP address in a browser, but Celcius cannot connect to it. There is probably a problem with the connection between networking card and incubator hardware. In April 2014, Paul Miskovic and Tasker reconfigured the Incubator network so that it would work properly with the University of Waterloo network. The IP address for each incubator is statically assigned by IST right now, this seems to have stopped/considerably reduced the number of dropouts when monitoring with Celcius. As stated previously, incubator #2 is still not setup, the network card is properly connected to the network, and can be accessed at 129.97.24.191, but the incubator is not setup with the network card. This could be because of the frequent changes the networking card in incubator #2 has undergone. A Memmert technician installed a new networking card, which Paul Miskovic and Tasker could not even get the university network to recognize, so that card was replaced by the older networking card (same exact model as all other 5 incubators). The card which the network would not even recognize is currently on the shelf above the Celcius-monitoring computer (Won's desk).

Interacting via Celcius

The IPs given above are currently entered into Celcius, but if you need to change the IP address of any machine, you'll need to let Celcius know before you try connecting. Under Settings->Options... you can add/change IP addresses. In the Options... window, click LAN... Currently, incubators 1-6 are set up as the corresponding LAN1-6. Note that Celcius has room for 16 LAN

connections. If you'd like to tell Celcius that incubator #2 has a new IP address, select LAN2 from "Short Name" dropdown, and edit the IP address. Once done, click OK to exit each window.

Once the IP has been setup in Celcius, a connection can be made. From here temperature profiles can be launched. Establish a connection by navigating to Settings->Log-on Device. In the pop up window, select the Device No. you'd like to connect to (Incubators 1-6) and match the interface so that the correct IP is being accessed.

When the incubator is connected, a window will appear corresponding to it. In this window temperature series can be manually drawn in or loaded from a file. To load a tempering profile, navigate to File->Load Tempering Profile->From File... and select the tempering profile you'd like to run. You should now see the trajectory of the profile in the window corresponding to your opened incubator. To start the program running, simply click the green arrow in the toolbar, or go to Run->Start. If everything is setup properly, the incubator should say "USB" on it's interface, and after a short time you should begin to see a red line appearing on the incubator tempering profile in Celcius, indicating the actual temperature in the incubator.

Generating Temperature Series

Up to now, temperature series have been created with a MATLAB script (on QNAP at '/Tasker/WonStats/Series'). See that file for instructions on using it to generate series.

Running a Temperature Series

1. Open Celsius

2. Go to Settings -> Log-on device. Select the incubator of choice (the incubator No. and corresponding LAN).

2. To load a temperature profile to run, go to File -> Load Tempering Profile -> From File. Select the appropriate profile file.

3. Go to Run -> Start

4. Select a location where the incubator thermometer temperature data will be saved, by clicking the `file` button under `Log file`. You may also select a start time.

5. To end the temperature series, go to Run -> Stop.

6. To export the temperature logged by the incubator and the original temperature series data in an excel file, open both files, must have both temperature profiles either open or on the same display graph. (May have to open both. Go to File -> Load Tempering Profile -> From File. Select the appropriate profile file. Then go to go to File -> Load Protocol Data -> From File. Select the appropriate profile file, from its selected location in step 4).

7. Click the export data icon in the bottom toolbar. Select the time span and the columns you wish to include, then click 'ok'.

8. Save the file.

HOBOware

Launching HOBO

To begin temperature recording on your HOBO device:

1. Open HOBOware Pro Trial

2. Connect the HOBO via it's USB port. When the device is successfully connected "1 device connected' will appear in the bottom right hand corner of the window.

3. Click Device -> Launch. Select time to begin logging.

Uploading data

1. Open HOBOware Pro Trial

2. Connect the HOBO via it's USB port. When the device is successfully connected "1 device connected' will appear in the bottom right hand corner of the window.

3. Click on the 'Readout device' icon, found in the top left hand corner (second icon).

4. Change the temperature settings from Fahrenheit to Celsius.

5. Click `plot`.

6. Save the data.

7. Export data as an excel file by clicking the 'Export Table Data' icon on the tool bar. Save the csv. file generated.

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- This page was last modified on 23 May 2014, at 16:45.
- This page has been accessed 97 times.