



# Operation Manual for SaniQuip UV Sanitizer V2.0

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# Initial Setup

Once the sanitizer is installed and plugged in, some basic set up is required for proper operation if wireless connectivity is desired. If no wireless connectivity is desired your SaniQuip sanitizer is ready to use! If wireless connectivity is desired, please follow the following steps to set up your wireless connection.

1. Press the icon in the upper left corner to open the internal device menu. This is shown in fig.1.

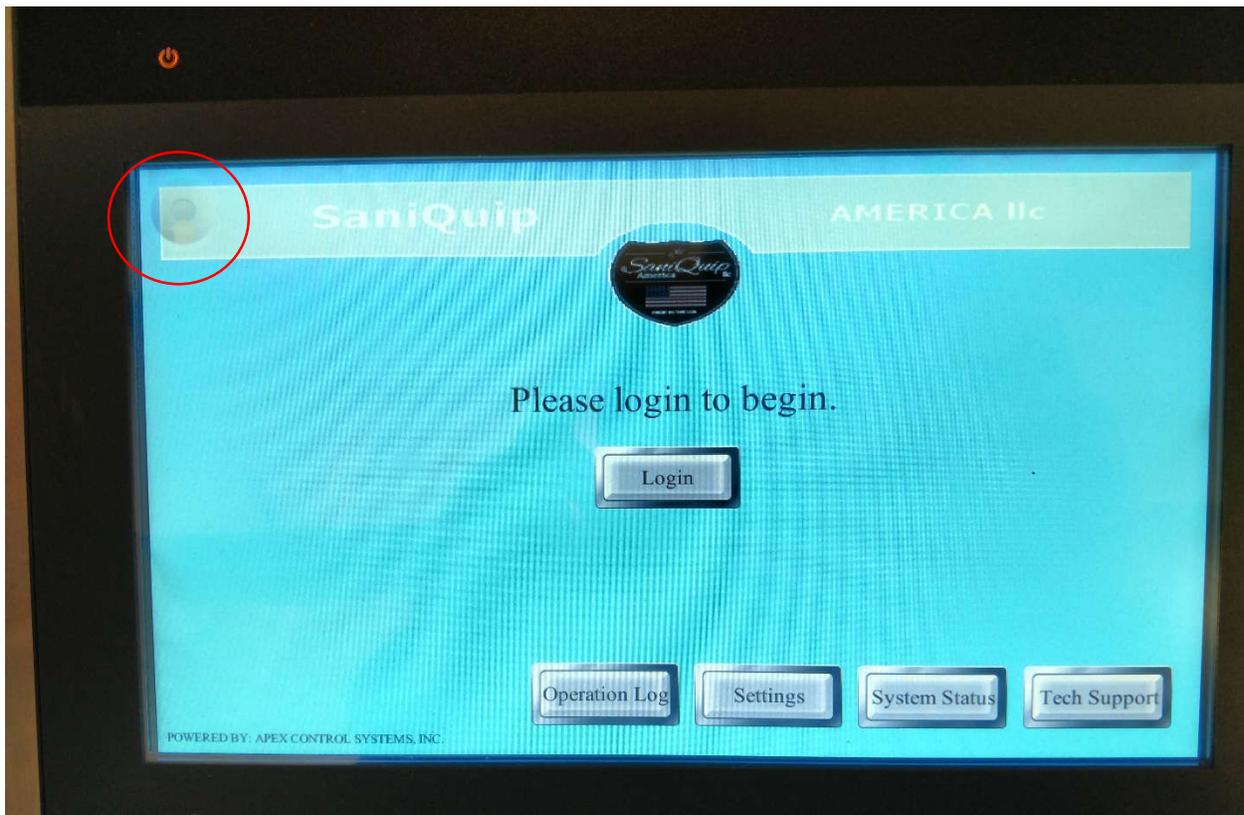


FIG.1 Internal Menu Access

2. Once you press this button the menu will pop-up. Press the lock icon next to “setting”. A window will pop-up and prompt you for the password. The default password is: 141516. This is shown in figs. 2 & 3.

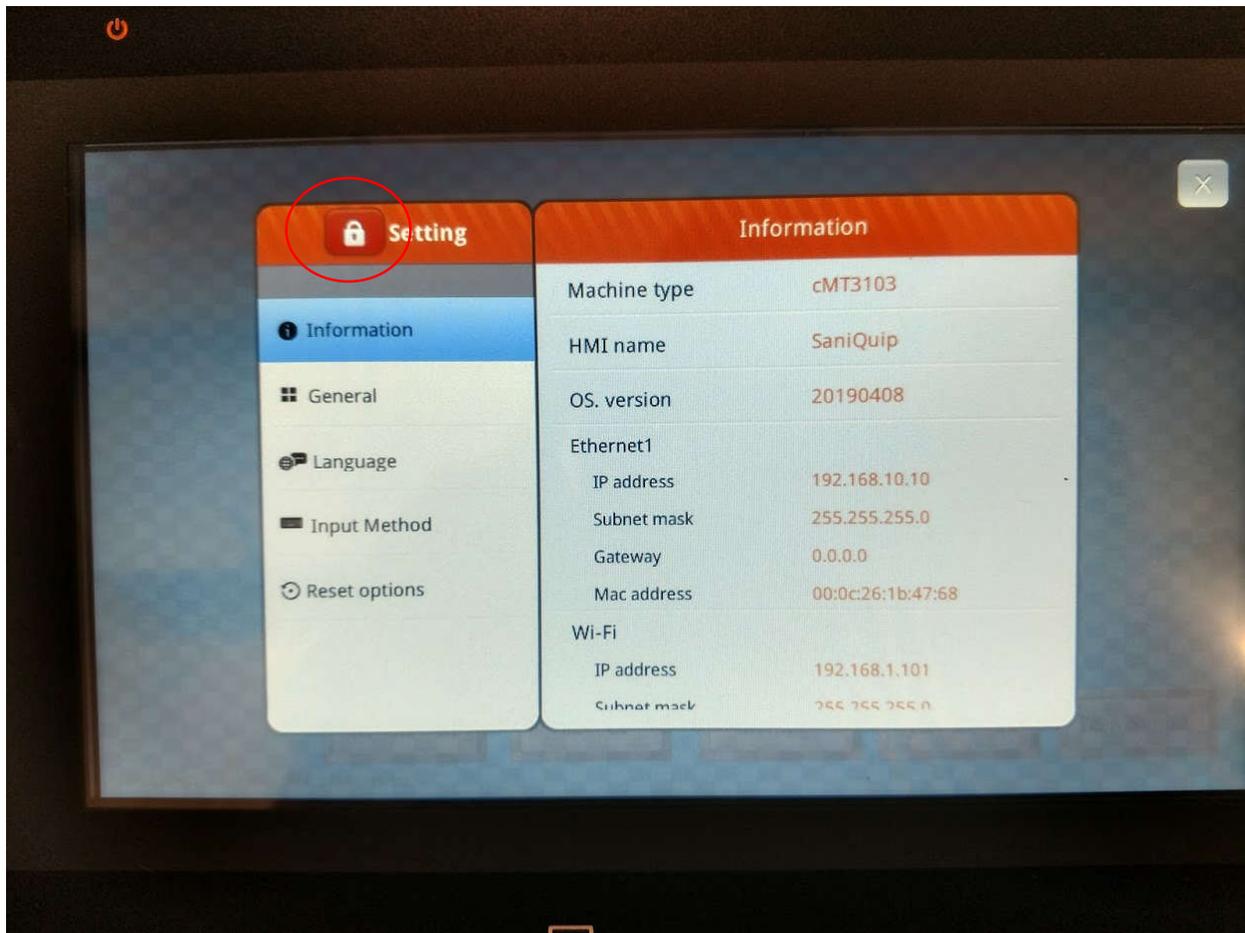


FIG.2 Unlocking the internal menu

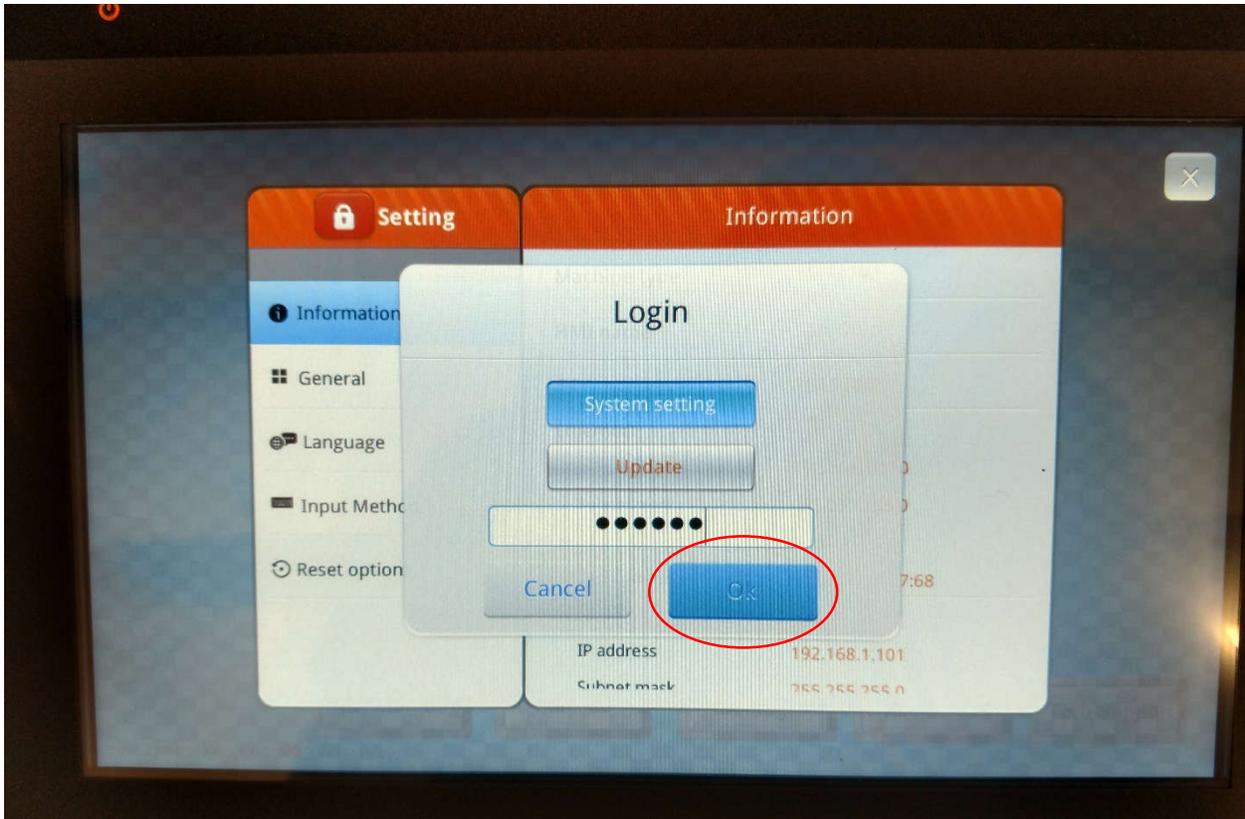


FIG. 3 Entering touchscreen password.

3. Once you have entered the password, press “Ok”. This will unlock the internal menu of the touchscreen. If done properly you will see the expanded menu, and the lock symbol will now show an open lock. This screen is shown in fig. 4.

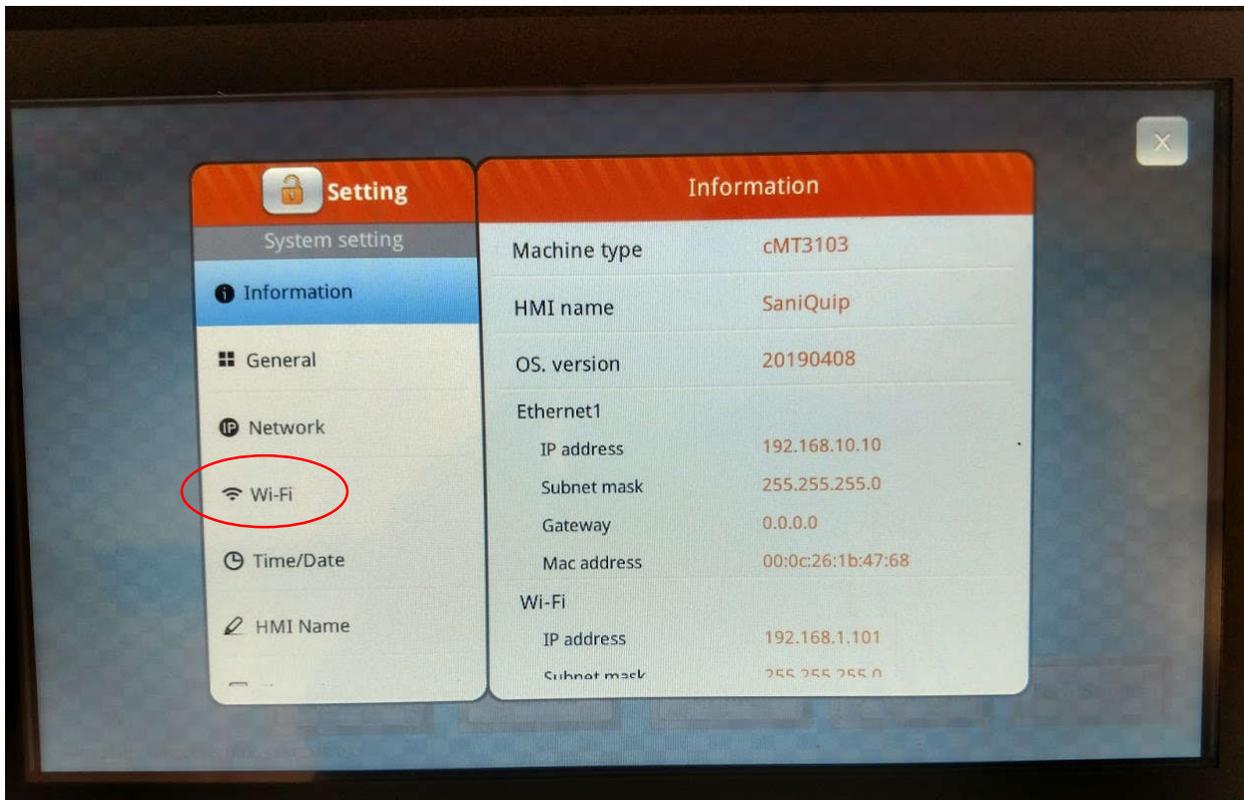


FIG.4 Unlocked internal menu

4. Once this menu is unlocked all the touchscreen settings can be changed. For the purpose of this manual, only the settings required for wireless connectivity will be discussed. Press the “Wi-Fi” button. This will open a screen that shows all of the available wireless networks. This screen is shown in fig. 5.

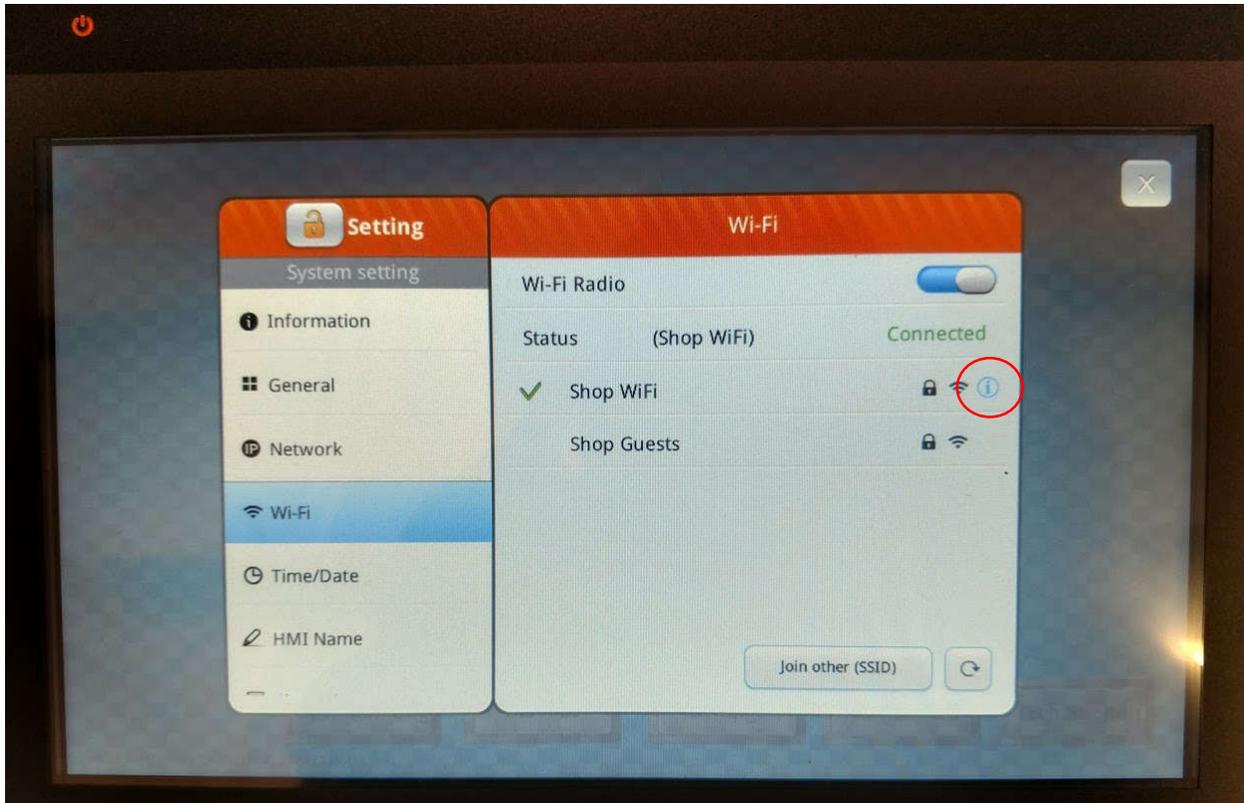


FIG. 5 Wi-Fi menu

5. Press on the desired wireless network, enter the password if the network has one.
6. The last step in setting up the wireless connection is to check the IP address. This is done by clicking on the information “i” shown next to the signal strength indicator in fig. 5. This pulls up the screen shown in fig. 6. Make sure the slider is to the right next to “Obtain an IP address automatically”. This is **very** important if wireless connectivity is desired.

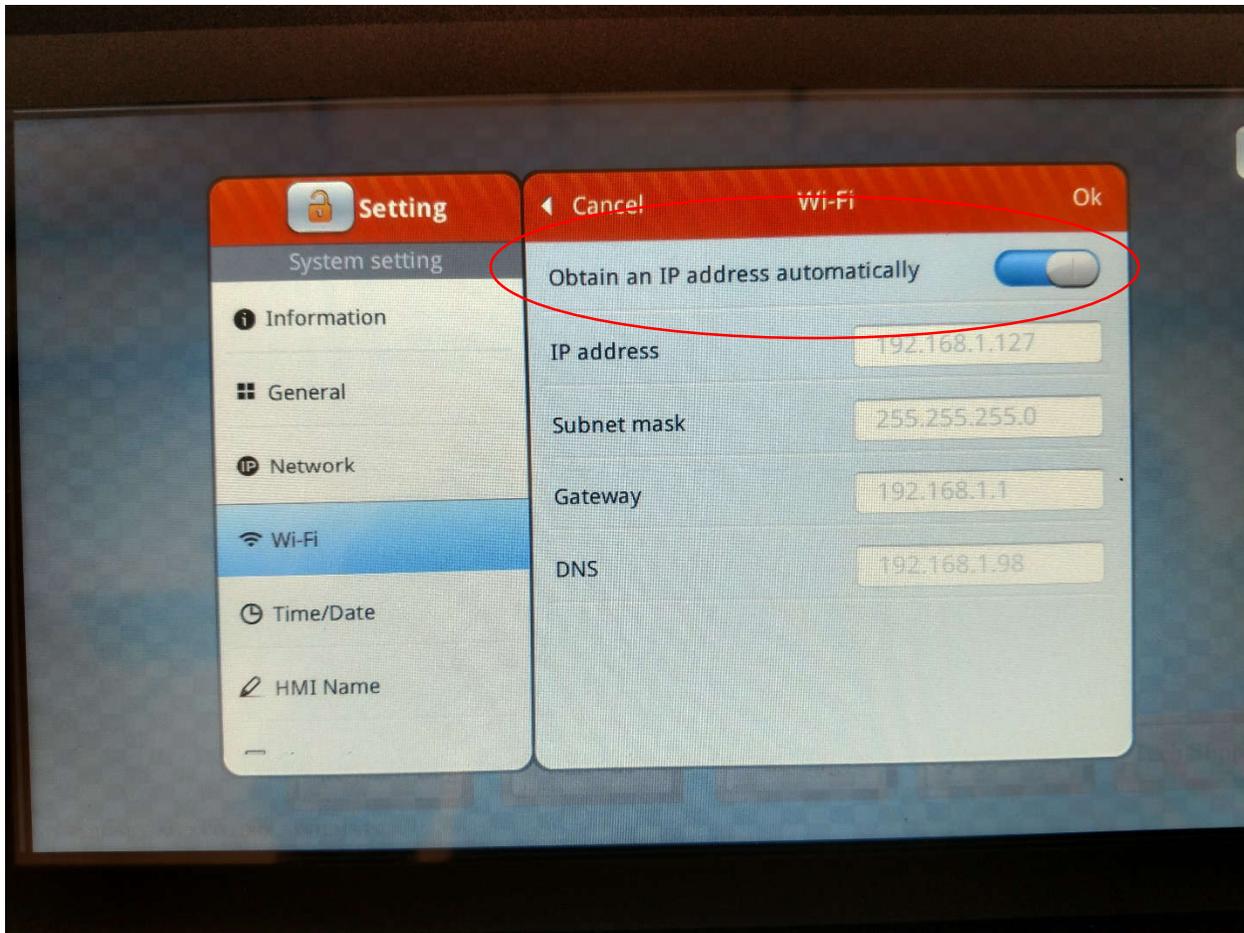


FIG. 6 IP address settings

7. Once this is done, record the IP address and hit ok. This should open the screen shown in fig. 5. Now press the large “x” in the upper right corner. This should close the menu. The wireless connectivity is now ready for use.
8. The IP address recorded will remain the same as long as the unit remains powered on. If the unit is turned off or connected to a different network the IP address may change. You will have to go back to the screen shown in fig.2 to obtain the new IP address.

# Basic Operation

## Home Screen

The SaniQuip sanitizer is made to be easy to use. In this section of the manual the basic operation will be discussed. When first powered on the “home” screen comes up. This is shown in figure 7.

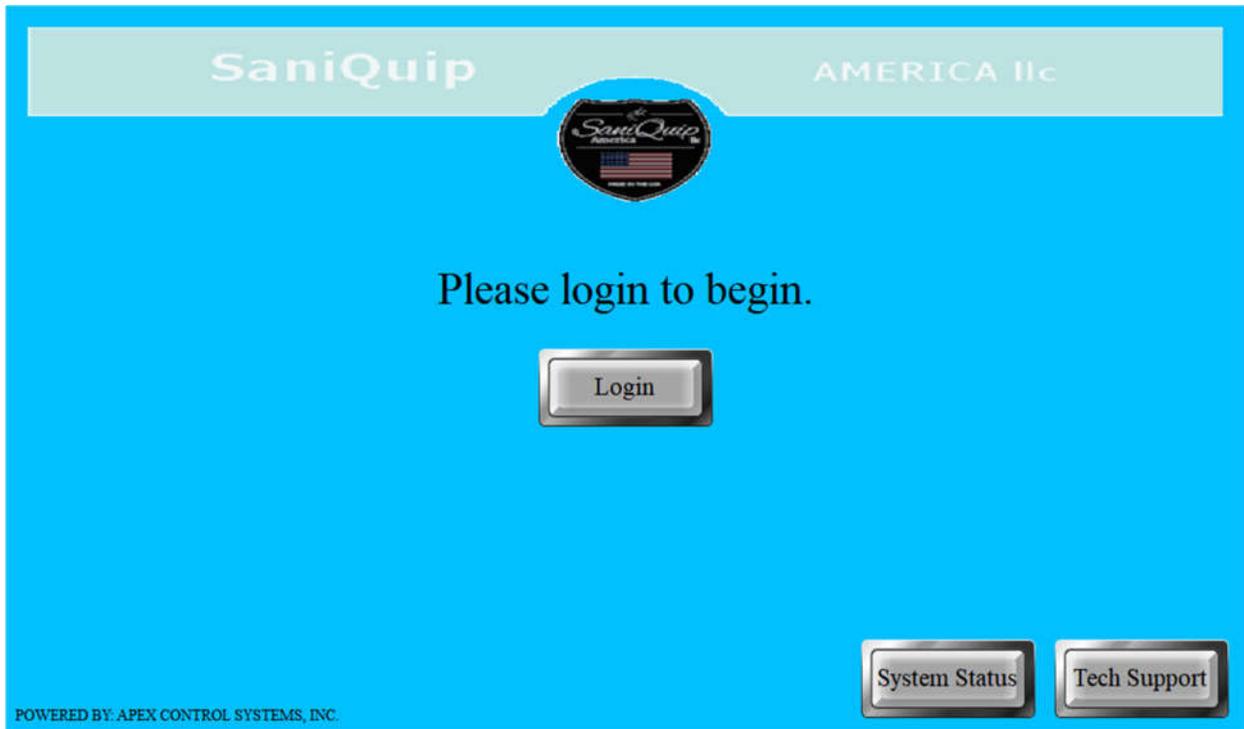


FIG. 7 Home screen

Once powered on, the first thing the operator needs to do is to login. This is done by pressing the login button. When you press this button a screen will pop-up. This screen is shown in fig. 8.

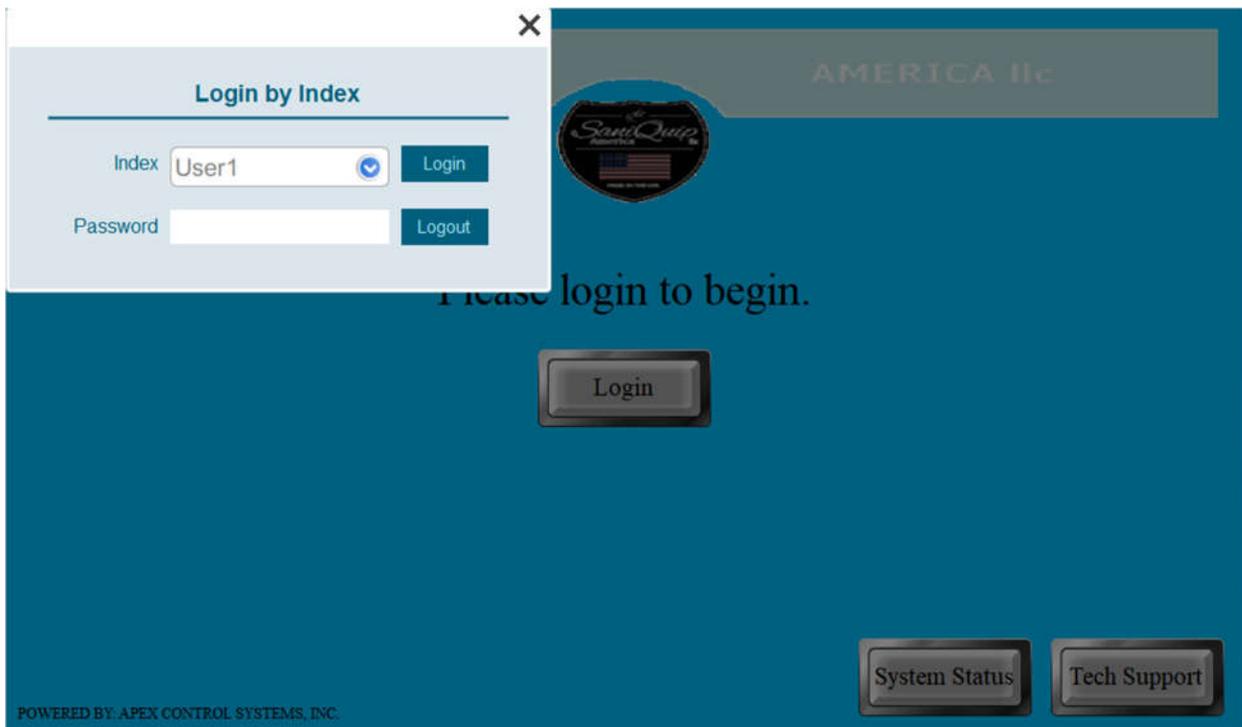


Figure 8: Login Screen

On this screen select the desired account and type in the password. To type in the password simply press in the password field and a keyboard will pop up. Once the password is entered, **press the return key**(you will not be able to login if you don't press the enter key). This will dismiss the keyboard. Press the login button and a message will come up and say "succeeds" if the password was correct and "password error" if it was incorrect. Once the password is successfully entered, press the "x" on the login pop-up window to exit. The operator is now free to use the sanitizer. Depending on your access level you will see one of two screens at this point. User1, User2, and the admin account will see the screen shown in Fig. 9 and have access to navigate to any of the screens available. User3 through User11 will see the screen shown in Fig. 10 and only be able to access the Tech Support screen and the System Status screen. The purpose of this is to only let the "general users" (Users3-11) run the sterilization cycle and not modify any settings. This will be discussed more in the "security" section of the "Advanced Operations" part of the manual.

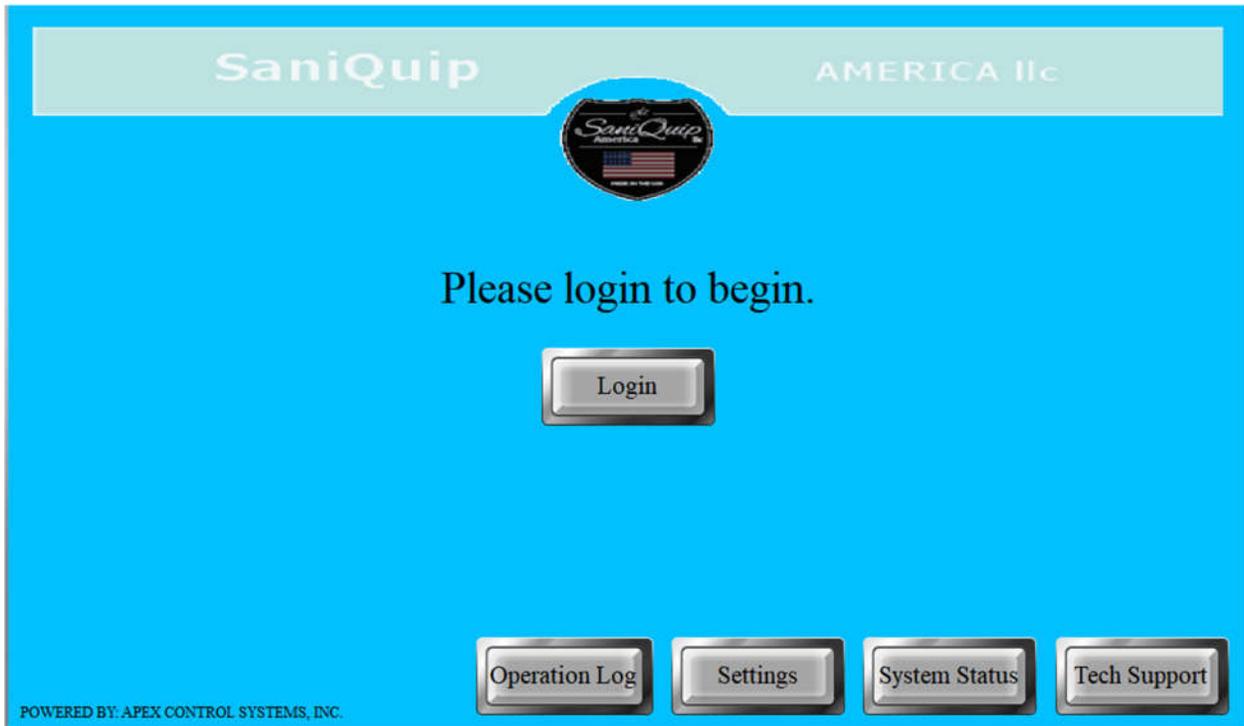


Fig.9: Home screen for users 1,2 & admin

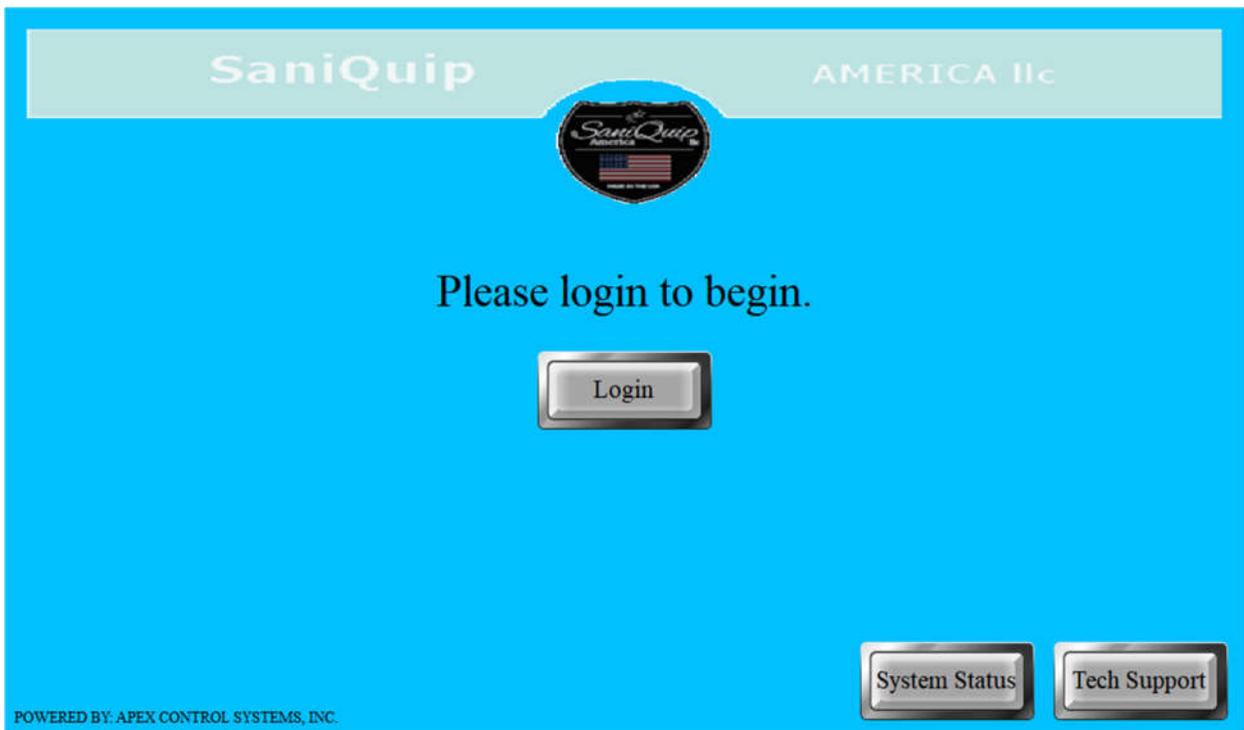


Fig.10: Home screen for users3-11

## Settings Screen

The settings screen is shown in fig. 11. This screen is only accessible to users 1,2, & the admin. On this screen the operator can set the length of the sterilizing cycle. The recommended setting for the cycle length is **120 seconds**. Also, on this screen is a timer that counts how many hours the lights have been on and a display that shows the rated life of the light bulbs. The rated life of these light bulbs is 15,000 hours or 450,000 2-minute cycles. To change the cycle length, press the gray box next to “Set cycle length in seconds”. A numeric keyboard will pop up. Set the length to the desired time and press the return key. The cycle length is now set. **One key thing to note here is that upon initial power up, the cycle length is set to 0. This means that either User1, User2, or the admin must log in and set the cycle length before User3-User11 can operate the SaniQuip sanitizer.**



Fig. 11: Settings screen

## Tech Support Screen

The tech support screen is shown in fig.12. This screen simply lists the contact information of SaniQuip. In the unlikely event that there is an issue with the operation of the SaniQuip sanitizer please use this information to contact Jim Townsend at SaniQuip America.



Fig.12: Tech support screen

## System Status Screen

This screen is the main operating screen of the SaniQuip Sanitizer, all user accounts have access to this screen. This screen is shown in fig. 13. There are four indicating lights on this screen. The first indicates whether the system is ready to run. The second comes on when the system is running. The final two only come on when the lights are almost ready to be replaced (14,950 hours of accumulated time on) , and when they are at the end of their lifecycle (15,000 hours of accumulated time on). The following conditions must be met for the system to be ready to run:

- The door must be closed, and the door latch must have a good connection.
- The E-stop must not be depressed.
- The internal safety relay must be in the “OK” state.

Upon initial power up, the safety relay will be in the “fault” state. With the E-stop pulled out you must press the “reset” button on this screen to place the safety relay back in the “OK” state. This

process must be repeated every time the E-stop is pressed, or the unit is powered off. Pressing the E-stop will immediately turn off the lights and place the safety relay in the “fault” state. When the sterilization cycle is running there will be a counter that displays how long is left in the cycle. When the cycle is over this display will show 0 and the “System running” light will turn off.



Fig.13: System Status screen

# Advanced Operation

The previous “Basic Operation” part of the manual covers all of the information needed to run the SaniQuip sanitizer. In this section the settings and data logging features will be discussed. This information is for User1, User2, and the admin accounts. User1 and User2, will have limited access to the settings, namely changing the cycle length, and will be able to check the operation history of the unit. The admin account will have access to all the User1 and User2 features in addition to the following. They will be able to add, delete, and modify user accounts, enable maintenance mode, and reset the accumulated time on the light bulbs.

## Security

The default settings for the SantiQuip sanitizer have three different user classes. Each class has access to different features of the unit. User1, and User2 are set up as manager accounts. Users3-11 are set up as general operators. There is also an “admin” account that has access to all aspects of this unit. The different user classes are detailed below.

<b>User Accounts</b>	<b>Screens able to access</b>	<b>Features able to use</b>
<b>User1-2</b>	All	Can run the unit, change cycle length, and view the operation logs.
<b>User3-11</b>	Home screen, System status	Only able to run the unit with the last settings set by User1, User2, or the admin
<b>admin</b>	All	All

## Data Logging

The SaniQuip sanitizer tracks several different pieces of information while it is in use. This information is intended to be used by administration to ensure proper use and to keep a record of what was sterilized and when. The information that is tracked is displayed on the “Operation Log” screen. Only User1, User2, and the admin account have access to this information. The “Operation Log” screen seen by Users 1&2 is shown in fig.14 while the screen seen by the admin account is shown in fig.15.

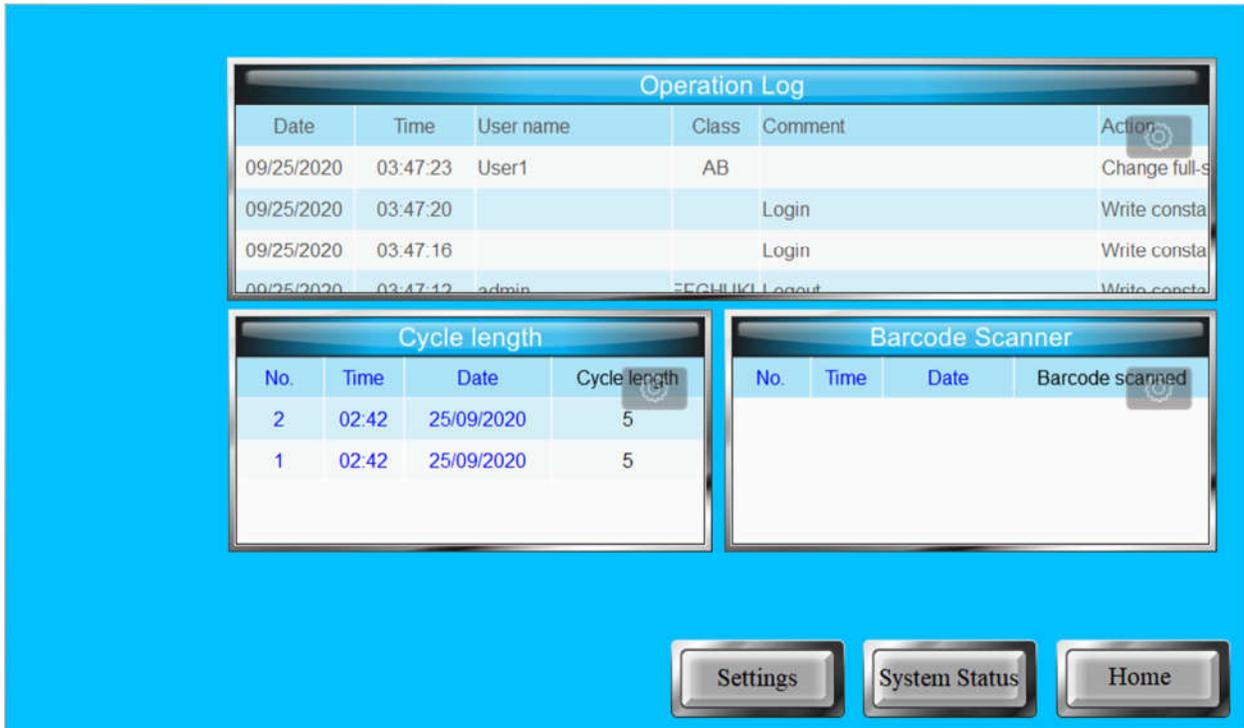


Fig.14 User1 & User2 “Operation Log” screen



Fig.15 admin account “Operation Log” screen

As you can see the only thing present on the “Operation Log” screen for User1 & User2 are the data logging windows. These data logging windows track the following information.

- Operation Log: This window tracks the actions the user takes while operating the SaniQuip sanitizer. The first 4 columns are the most useful for tracking the operation history of the unit. The first two columns record the date and time of the operation. The third column records who was logged in at the time of the operation, and the fourth column describes the operation completed.
- Cycle Length: This window records the value that the cycle length was set at whenever the start button was pressed.
- Barcode scanner: This records the barcodes that were scanned with the built-in barcode scanner.

What this allows the manger and admin accounts to do is to build a picture of the complete operation history. For example, in Fig.15 you can see that the barcode “478978” was scanned at 3:20 (from the window “barcode scanner”). The cycle length was set to 120 seconds (from the cycle length window) and that user “admin” initiated the cycle at 3:20 (from the operation log window). Thus, combining the information from all three windows tells you that user “admin” ran a 120 second sterilization cycle on item “478978” at 3:20 on 10/6/20. This information is stored internally and can be downloaded two different ways for transferring to a PC. This is discussed later in the “downloading data” section of this manual. Up to 1,000 data entries can be

stored internally on the SantiQuip sanitizer. Once this limit of 1,000 entries is hit, the oldest entries are automatically deleted to allow the new items to be stored. These data windows can also be searched by date. If you press the gear shown in the window the screen in Fig.16 pops up.

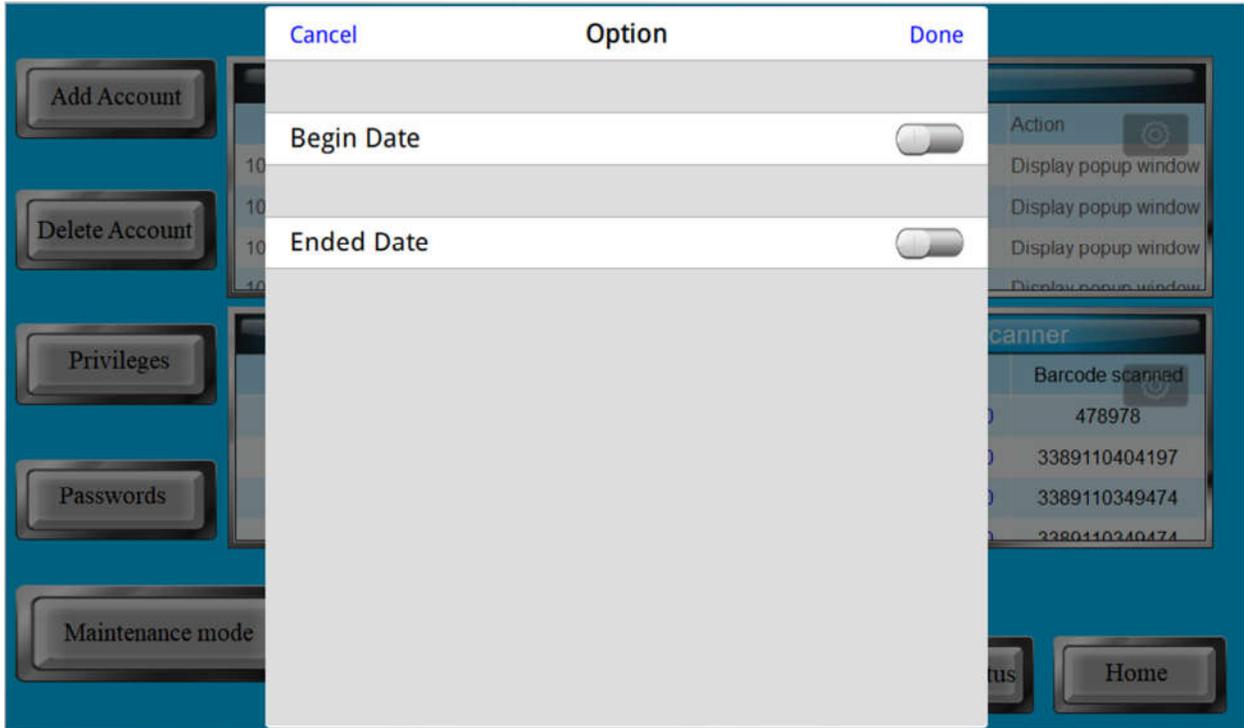


Fig.16 Date search pop-up window

Simply press the slider buttons by “Begin Date” and “Ended Date”. When this is done, the sliders will be blue, and dates show up under the respective designation. Pressing on these dates will allow you to select the desired range. This screen is shown in Fig.17. Once this is done, press the “done” button in the upper right-hand corner and only the data entries from that date range will remain in the data window. You can scroll up and down in these windows to see all of the data. This process will need to be repeated for each data window.

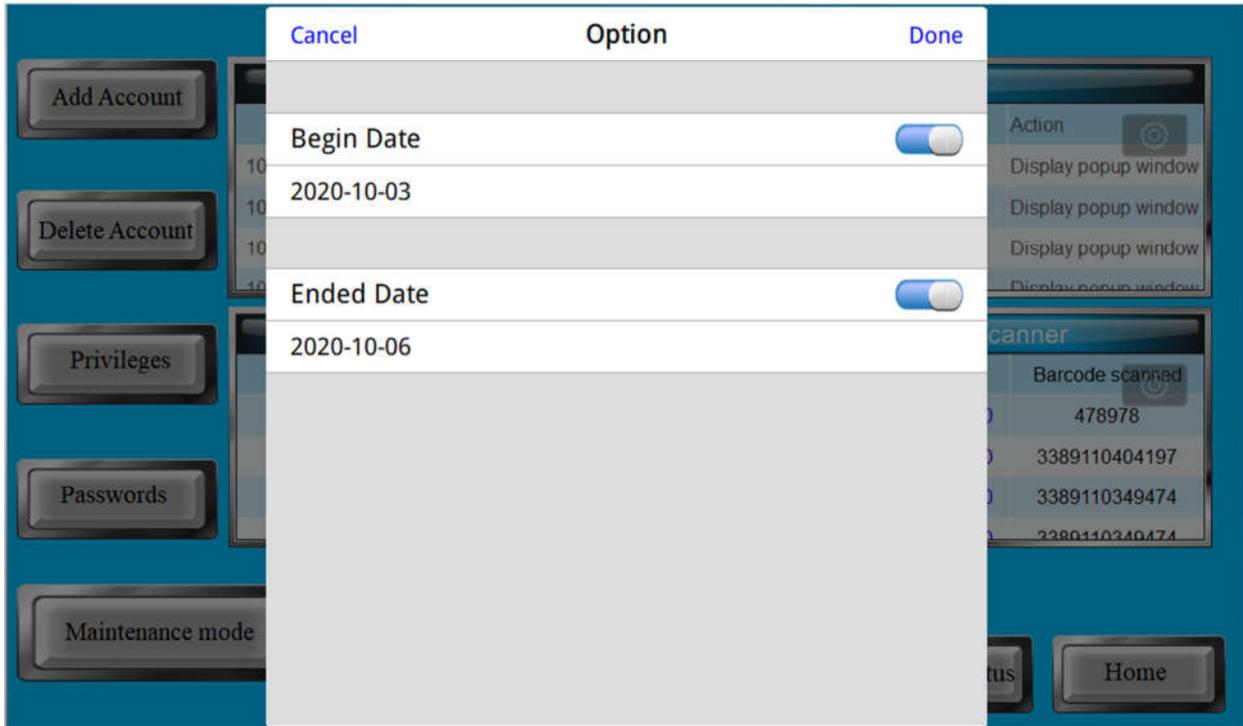


Fig.17 The configured date search window

# Administrator Account

In the next few sections, the functions reserved for the administrator account will be discussed. These functions include: Adding accounts, deleting accounts, changing the password for user accounts, and changing the privilege level of user accounts.

## Adding Accounts

To add an account, go to the “Operation Log” screen shown in Fig.15. Press the “Add Account” button in the upper left-hand corner. This will bring up the pop-up screen shown in Fig.18.

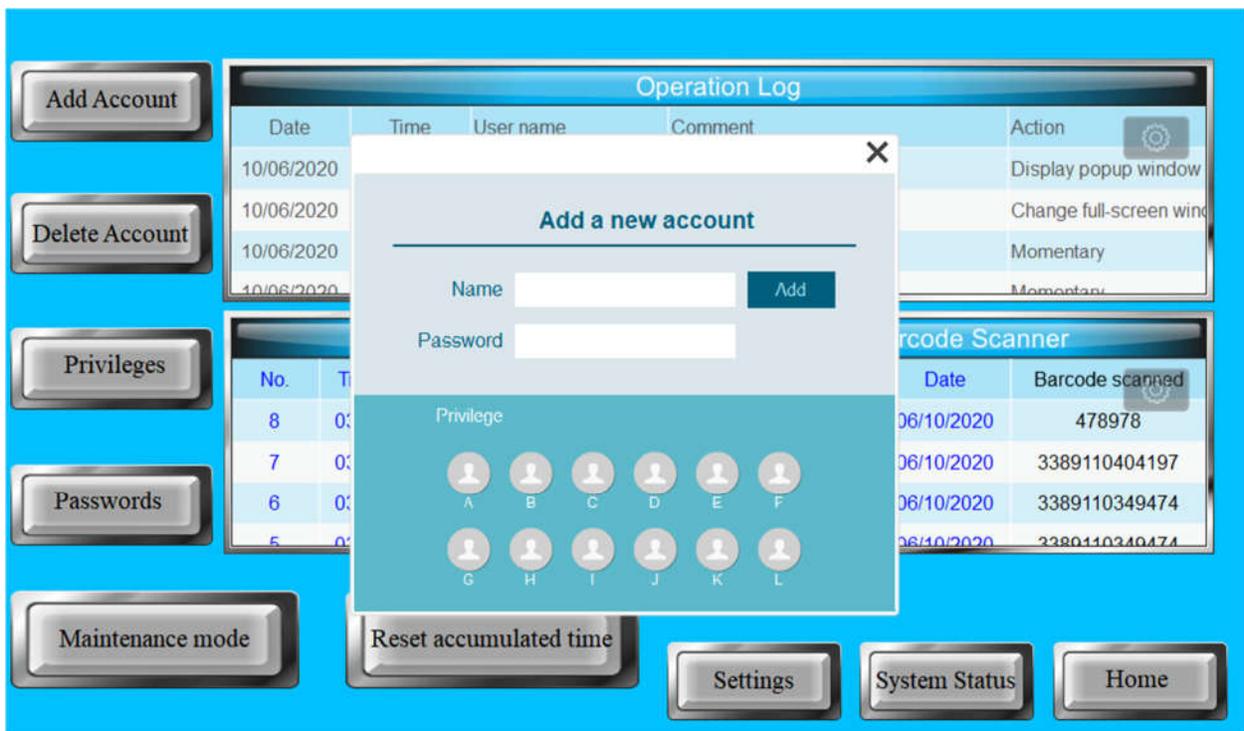


Fig. 18 Add account pop-up screen

Pressing in the “Name” and “Password” fields will bring up a keyboard. Type in the desired account name, press enter. Repeat this process for the account password. Next you must assign the privilege level. This is done by pressing the desired privilege circle. If the privilege level has been selected successfully the circle will turn orange. Keep in mind that User3-11 are only assigned level A, User1&2 are assigned class A and B and the admin account has A,B,&C. When assigning privilege levels to a new account you must select all classes up to the desired levels. For example, if you want to create a new admin account, A, B, and C must all be selected.

## Deleting Accounts

To delete an account, you must press the “Delete account” button shown on the screen in Fig. 15. This will bring up the screen shown in Fig. 19. Simply press the down arrow to open a list of the currently registered users. Select the account you would like to delete and press the delete button. The account is now deleted.

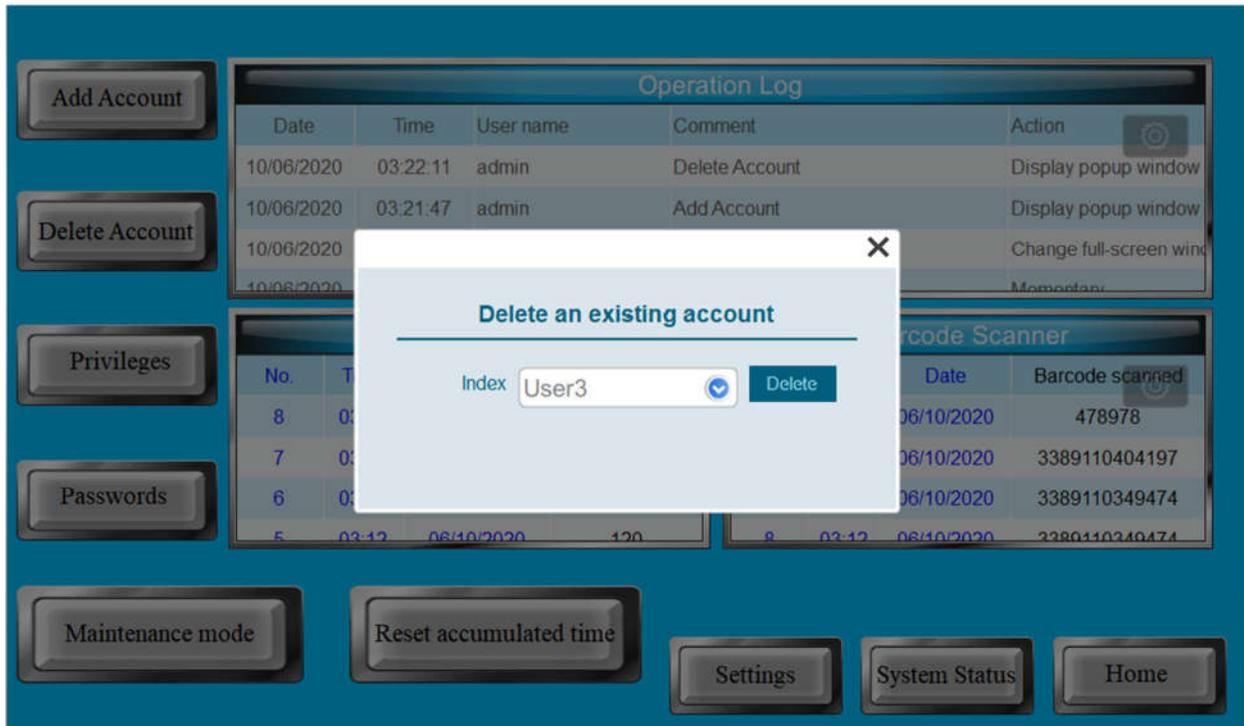


Fig. 19 Delete account screen

## Changing Privileges

To change the privilege level of an existing account, press the “Privileges” button on the screen in Fig. 15. This will bring up the screen shown in Fig.20. Press the down arrow next to the account name to bring up a list of all the existing accounts. Select the account you would like to change the privilege level for. This will automatically select the privilege classes the account is currently assigned. Press the privilege levels you would like to add to this account and press the “OK” button. The selected user now has the new privilege levels assigned.

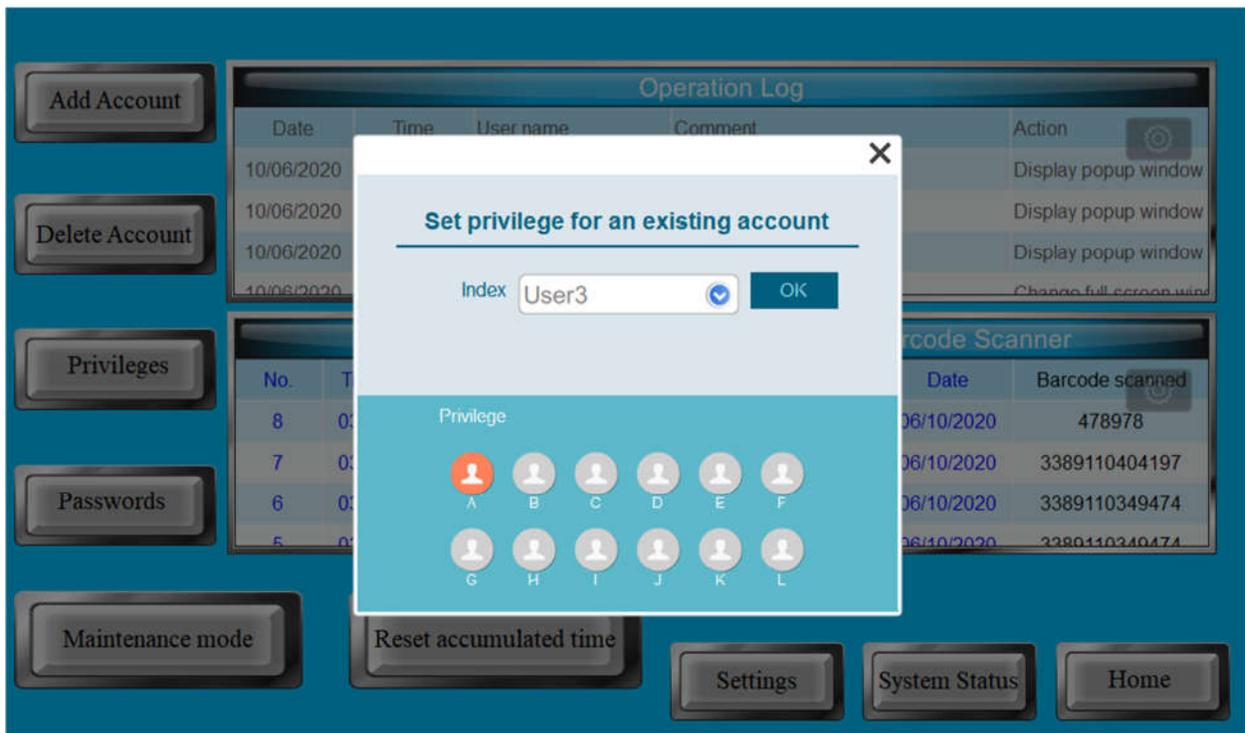


Fig. 20 Set privilege level screen

## Changing Passwords

To change the password of an existing account, press the “Passwords” button on the screen in Fig.15. This will bring up the screen shown in Fig.21. As before, press the down arrow and select the desired account from the list. Press on the password field to bring up a keyboard. Enter the new password and then press the “OK” button. The password for the selected account has now been changed.

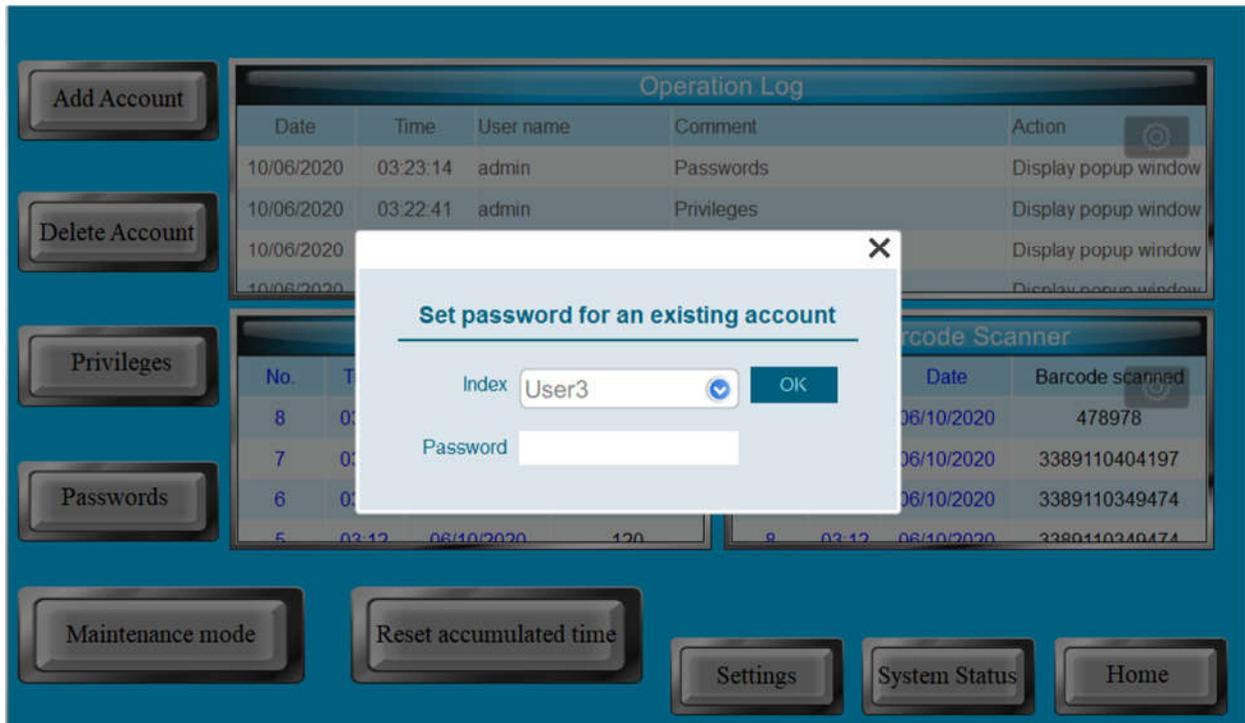


Fig.21 Change password screen

# Data Collection

This section of the manual will discuss how to retrieve the information stored by the SaniQuip sanitizer and to turn it into a useful Microsoft Excel file. There are two main ways to access this information. The first method is to use a USB flash drive, and the other is to use a wireless connection.

## Data Collection Via USB

This section of the manual will discuss how to collect the saved data from the SaniQuip sanitizer via a USB flash drive. The data collected will be in a database (.db) format and will need to be converted to a comma separated value (.csv) format before it can be used. This is done using a program called Easy Converter. This process will now be explained step by step.

1. With power applied to the sanitizer, insert a flash drive into the USB port on the front of the sanitizer. This is located right by the cord for the barcode scanner. When this happens, the screen shown in fig. 22 will be displayed.

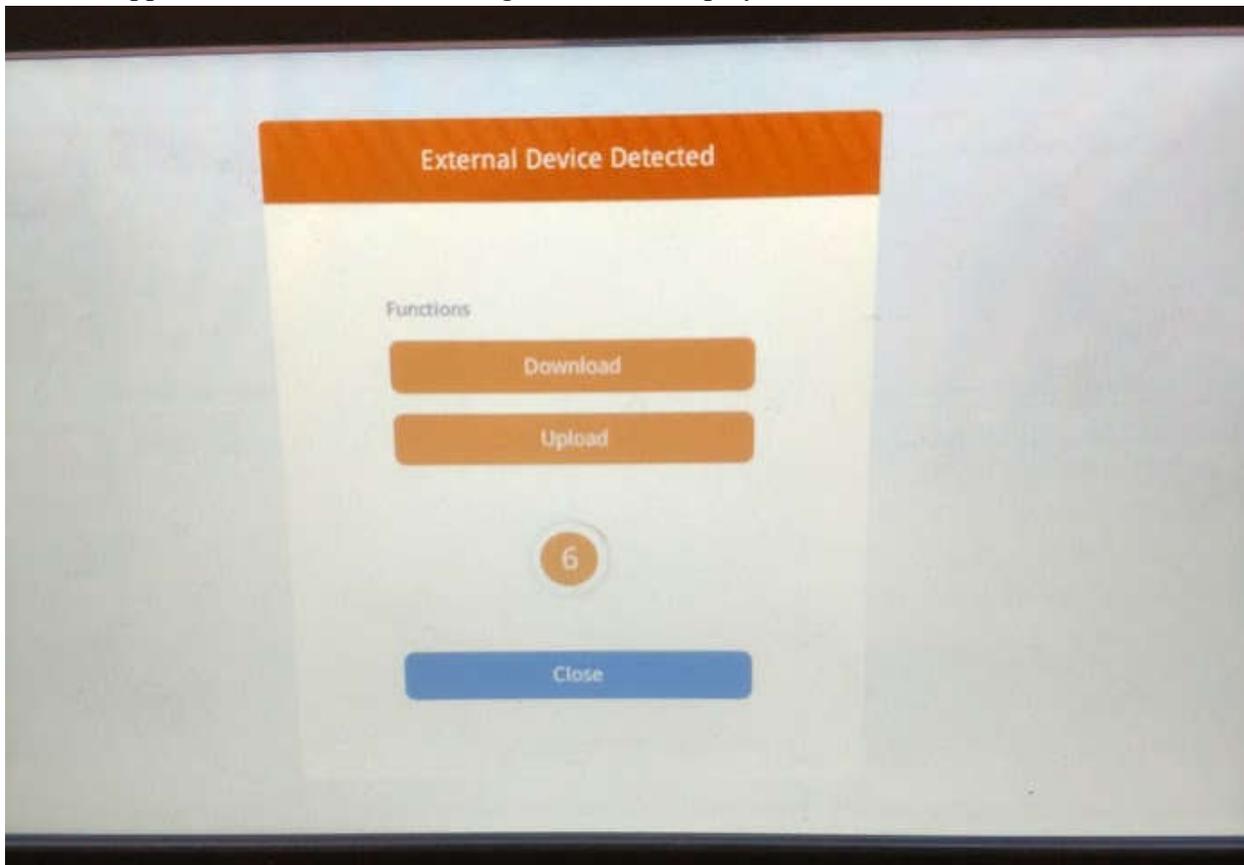


Fig. 22 External device screen

2. Press the upload button. Once this is done, the screen shown in fig. 23 will be displayed. Select the “Data log” and “Operation log” boxes and enter the upload password. This is set to 141516 as default. The screen should now look exactly like the one shown in Fig. 23.

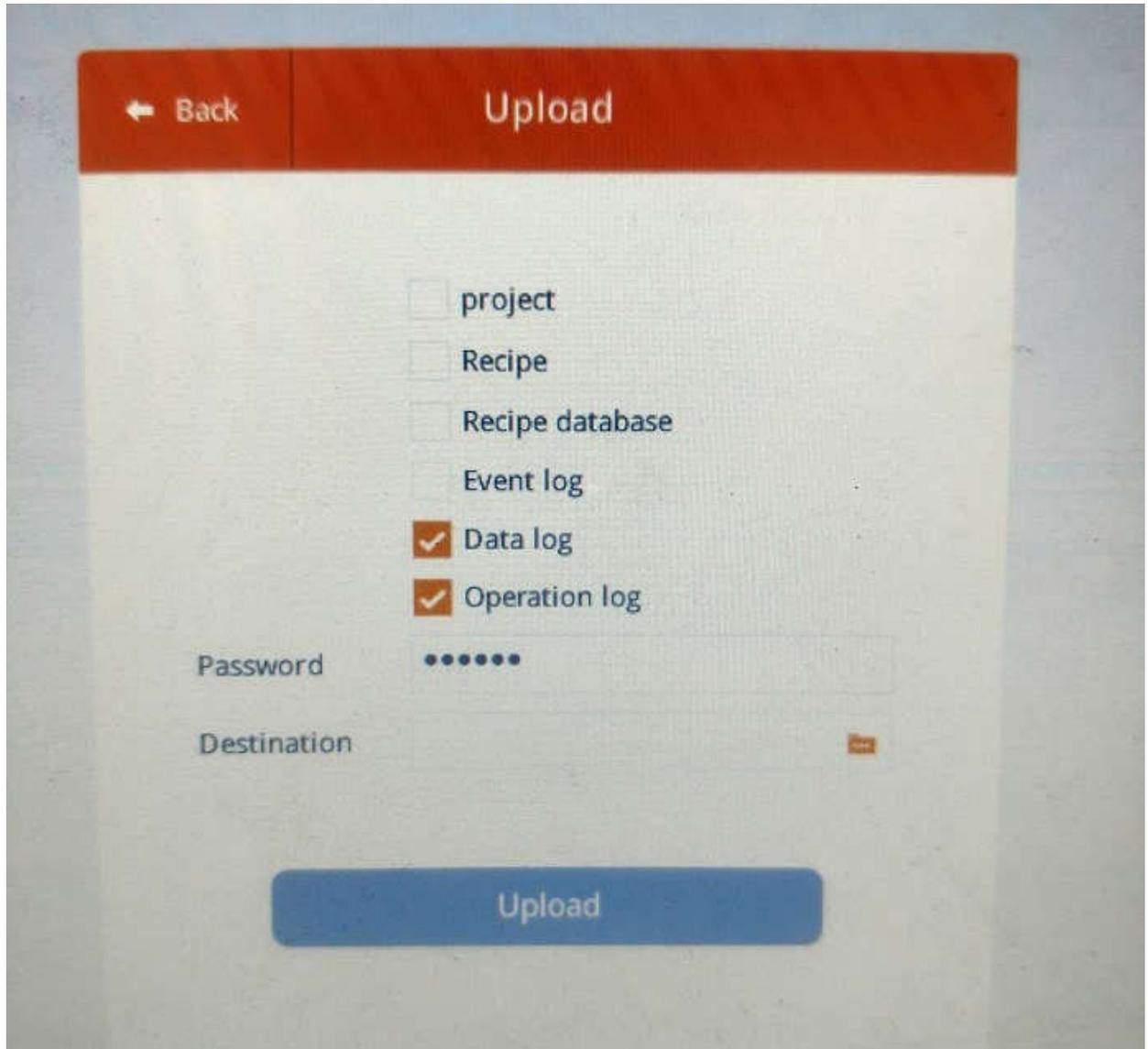


Fig. 23 Upload settings screen

3. Press the folder icon at the right of the “destination” field. This will determine where the uploaded files are stored on the USB flash drive. Doing this will pull up the screen shown in fig. 24. On this screen select the folder “usbdisk”. It is extremely important that “usbdisk” is selected and not “pccard”. If you select “pccard” you will not transfer the .db files to the flash drive.

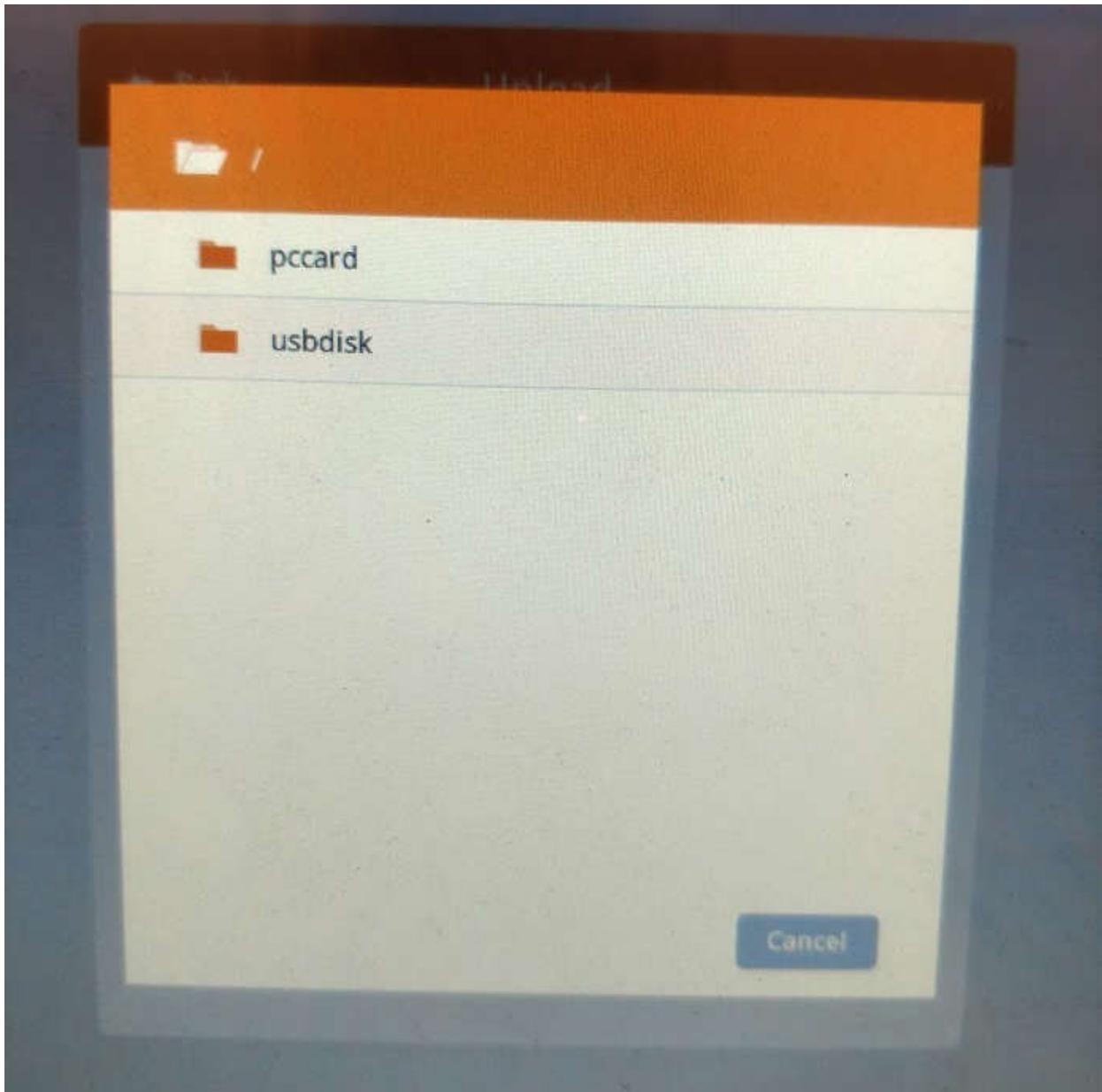


Fig. 24 Device selection screen

4. After selecting the USB flash drive a screen similar to fig. 25 will be shown. It will have all of the existing folders on the flash drive listed. This is where the exact folder will be selected that the .db files are saved. A folder that already exists on the flash drive may be selected or a new folder may be created. To create a new folder, press the gray “new folder” button in the bottom left hand corner of fig.25.

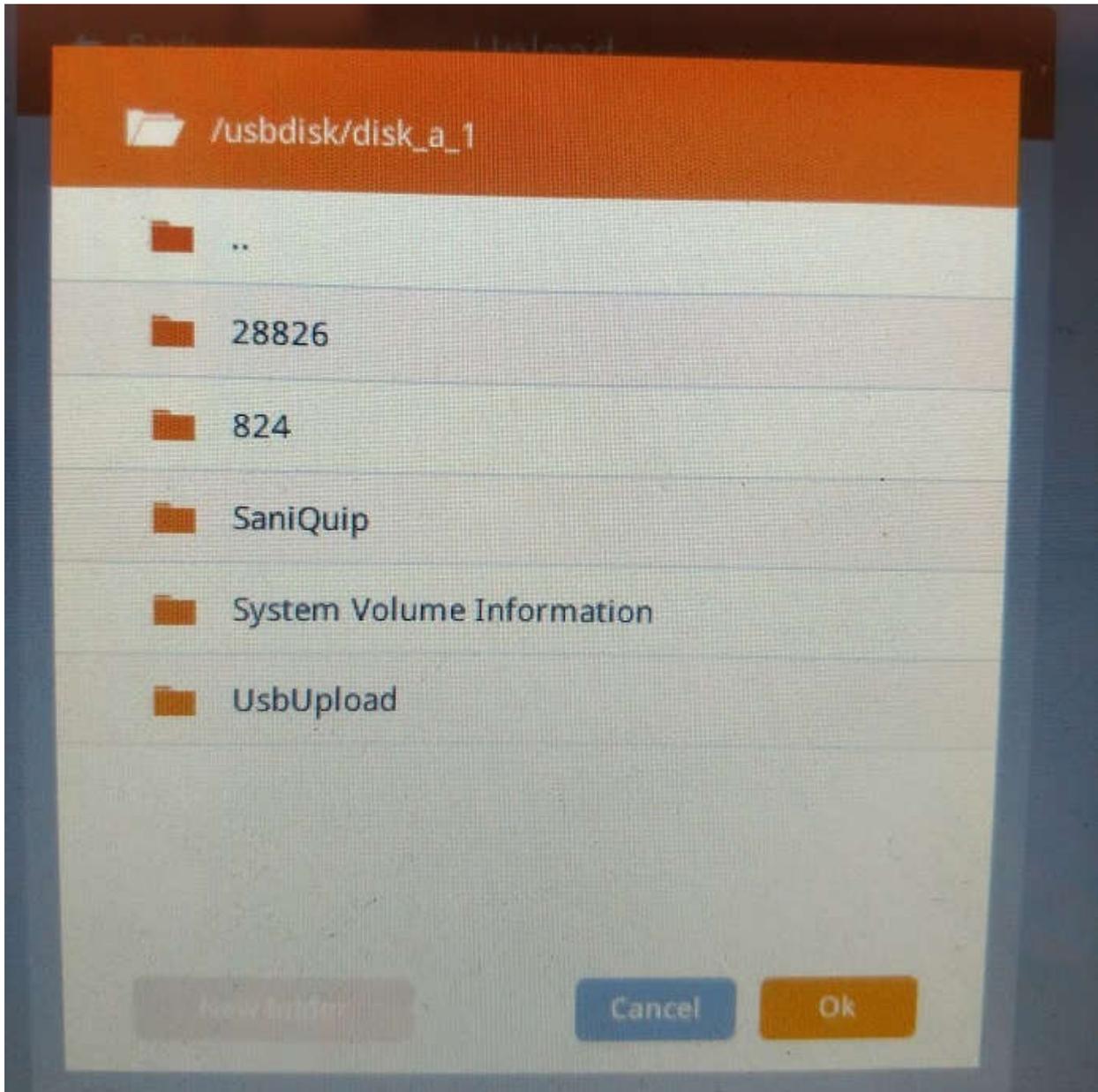


Fig. 25 Folder selection screen

5. Once a folder has been created or selected press the “ok” button in the bottom right hand corner of fig. 25. This will bring up a screen like the one shown in fig. 23 with the exception that the “destination” field will no be populated with the folder location.

6. Press the “upload” button. This will temporarily stop the project while the files are uploaded. When the upload is complete the sanitizer will return to the initial login screen. It is now safe to remove the USB flash drive.
7. Insert the USB flash drive into a PC with Easy Converter installed.
8. Open Easy Converter, the icon for this program is shown in fig. 26. The screen it opens to is shown below in fig. 27.

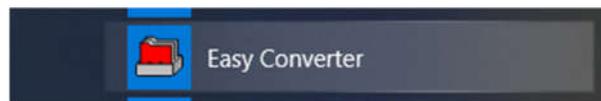


Fig. 26 Easy Converter

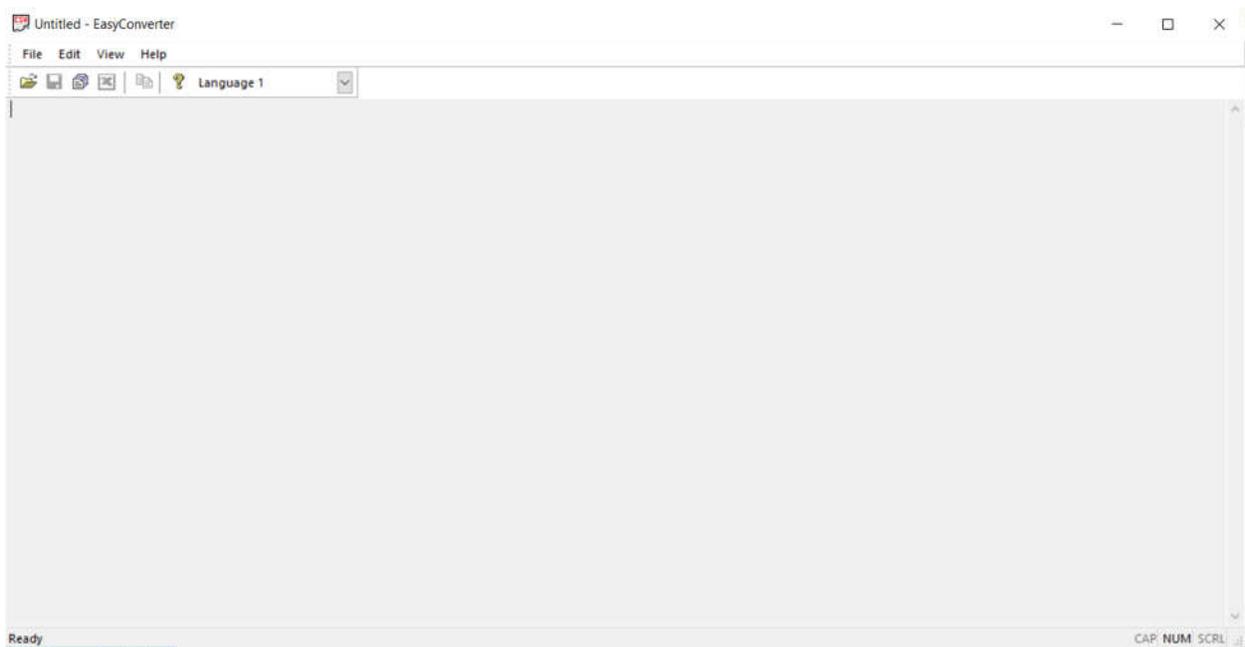


Fig. 27 Easy Converter initial screen

9. Either click the “open file” icon or go into the “file” drop down menu and select “open file”.
10. Use the file explorer to navigate to the folder the data was uploaded to. This screen should look like the one shown in fig.28. Double click on the .db file that is to be converted.

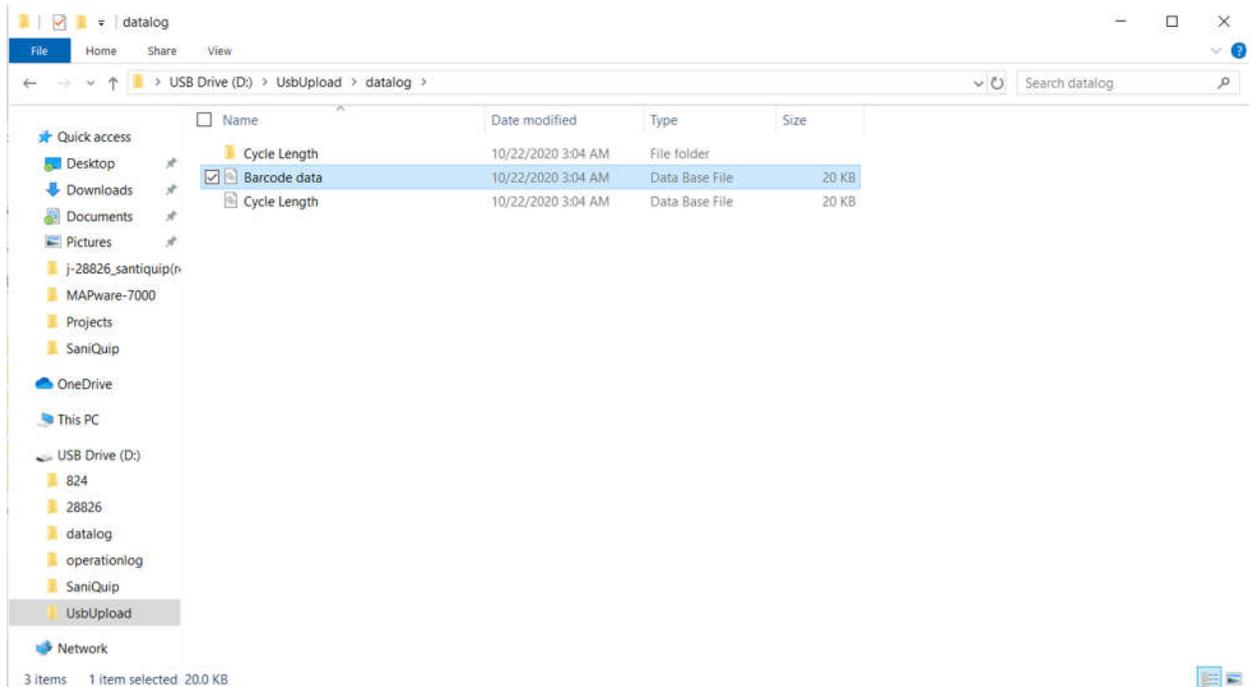


Fig. 28 File selection screen

11. Once the file has been selected for conversion the screen shown in fig. 29 will be displayed. This is a date sorting function that allows the user to select a range of data based upon the date. Set the range to convert and press “ok”. This will open the screen shown in fig.30.

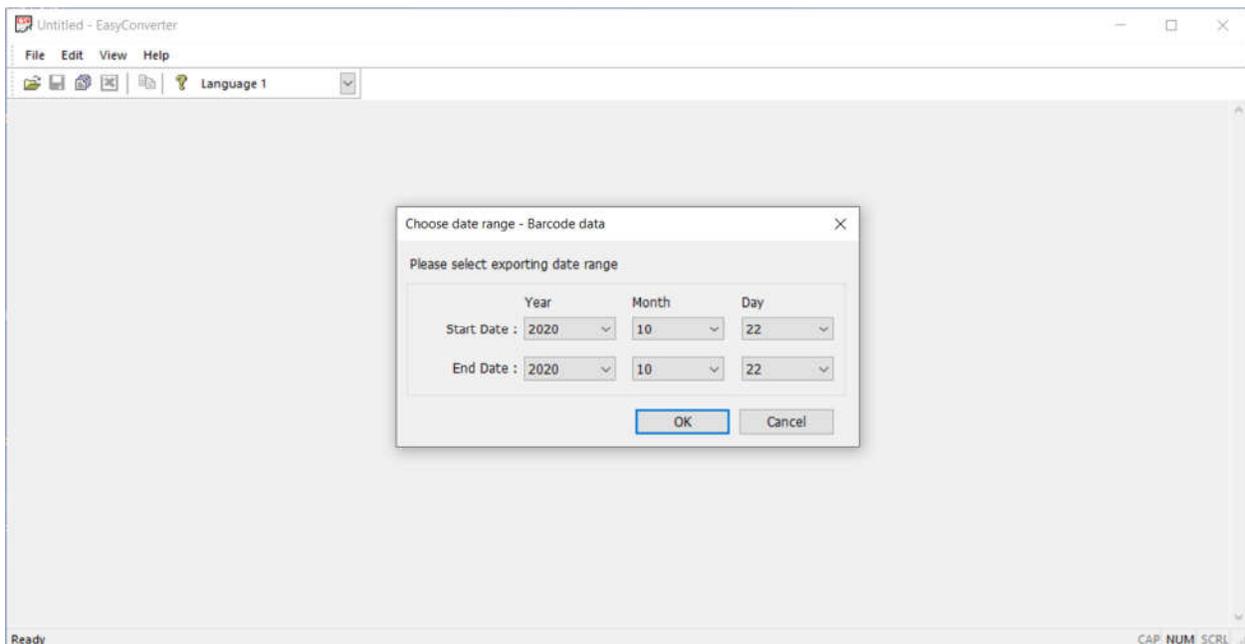


Fig. 29 Setting the date range

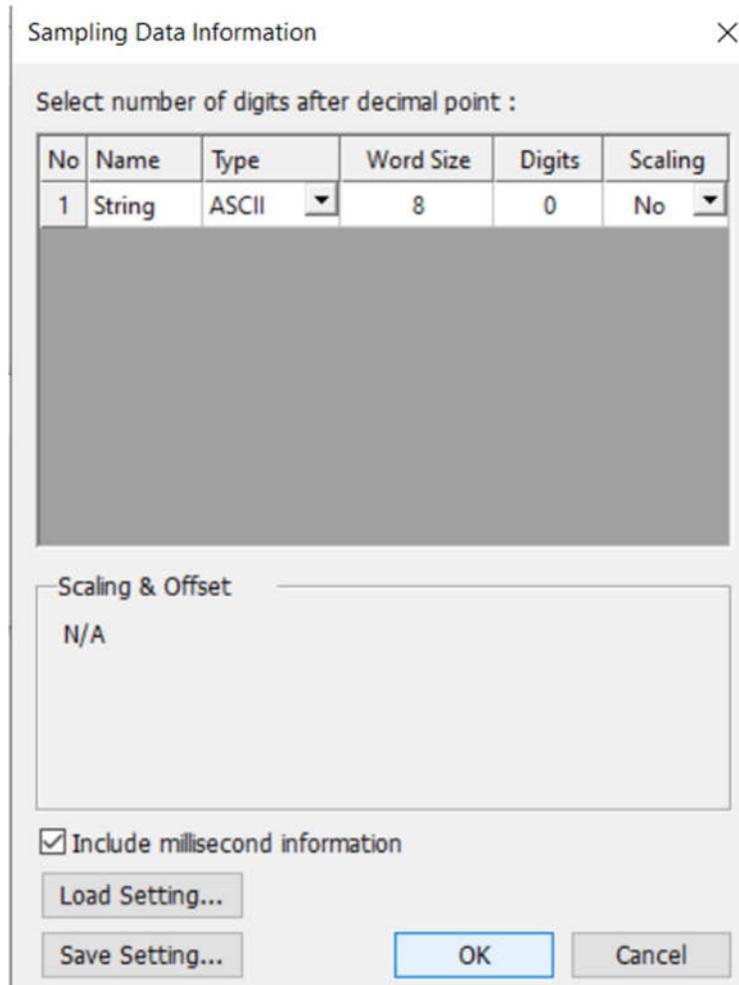


Fig. 30 Data configuration

12. Make sure that the Name, Type, Word Size, Digits, and Scaling columns match with what is shown in fig. 30. Also make sure that the “Include millisecond information box is **NOT** checked.
13. Now that the file is open in Easy Converter it is ready to be converted into a .csv file. To do this, click on the Excel icon at the top of the screen. This is labeled “Export to Microsoft Excel”. The location of this button is shown in fig. 31. For the conversion to be possible, Microsoft Excel must be installed on the PC.

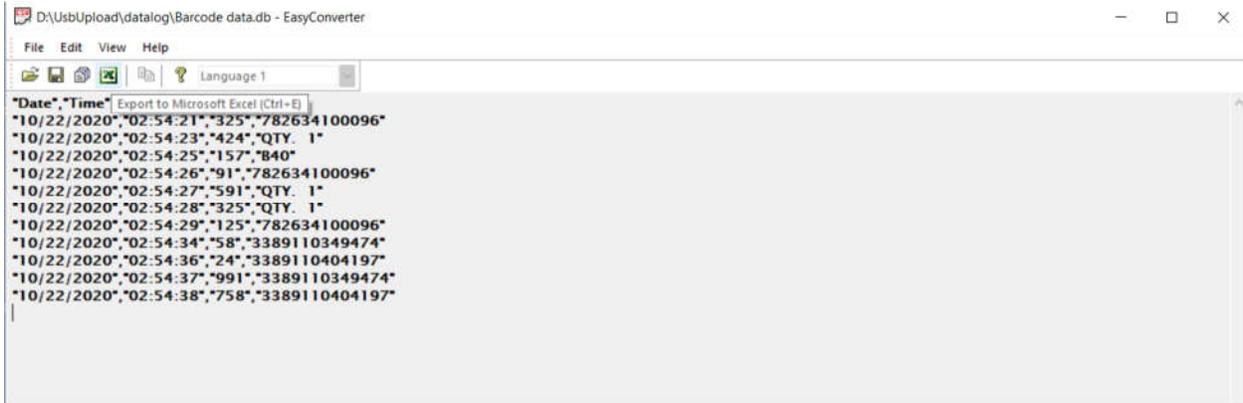


Fig. 31 Export to Excel

14. Once the conversion is complete, Microsoft Excel will automatically open the new .csv file. This will look similar to the screen shown in fig. 32 depending on the file you converted. You may need to adjust some of the column sizes to make the data easier to use.

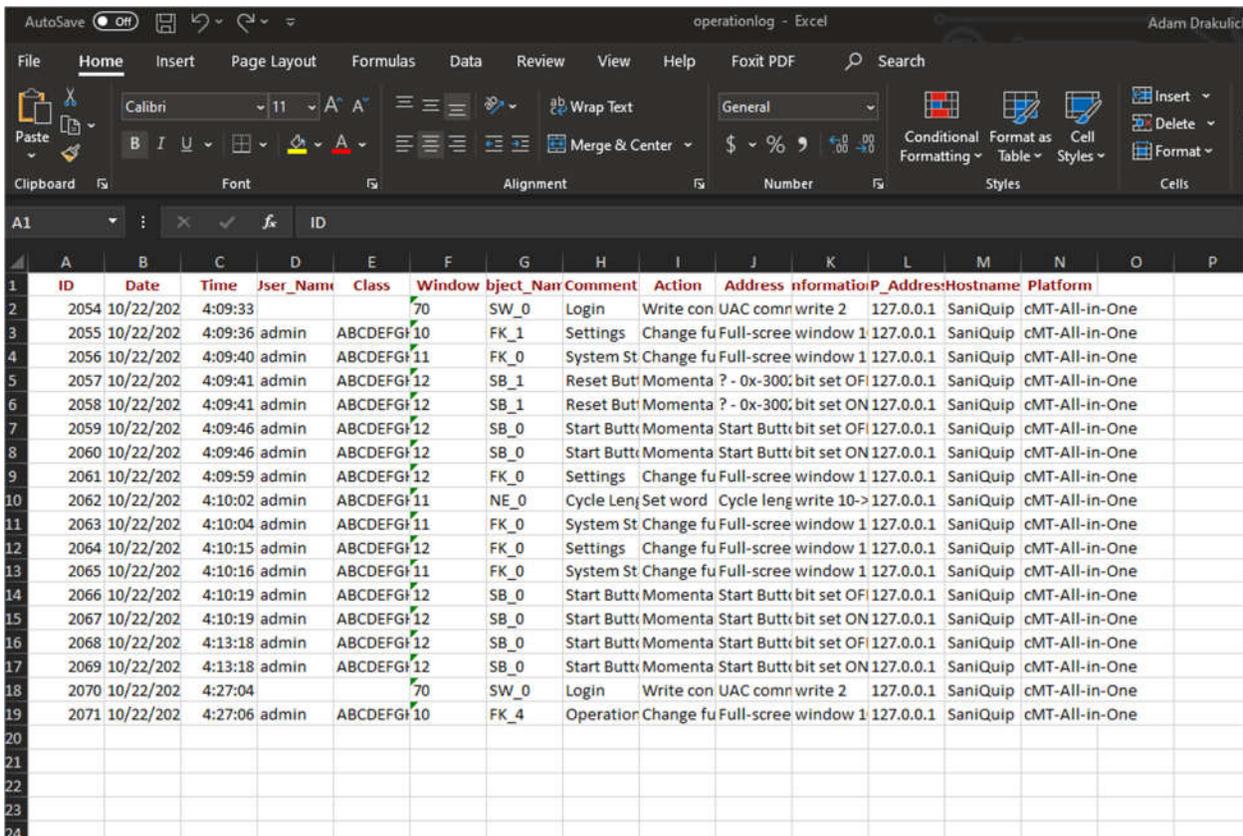


Fig. 32 Converted data in Excel

15. Depending on which data file is converted, there will be some extra data columns that should be deleted from the Excel file to make it easier to use. For example, the converted file shown in fig. 32 was an “operation log” file. With this file type the following columns should be deleted or hidden:
  - a. ID – Column A
  - b. Class – Column E
  - c. Window – Column F
  - d. Object Name – Column G
  - e. Action – Column I
  - f. Address – Column J
  - g. Information – Column K
  - h. IP address – Column L
  - i. Hostname – Column M
  - j. Platform – Column N
16. This leaves the following columns which should be expanded for proper viewing:
  - a. Date – Column B
  - b. Time – Column C
  - c. User Name – Column D
  - d. Comment – Column H
17. Repeat this process for the other data files that were uploaded. Once this is done there will be enough data to analyze the use of the SaniQuip sanitizer.

#### Example Data Analysis

This example will analyze the data shown in fig. 33 – fig. 35. Fig. 35, the operation log data will record the “movements” of whoever is logged in. This is done by recording the major events that occur. For example, at 4:09 the admin user logged in. This is shown by the user name column going from blank to “admin”. If no user is logged in but actions still occur (such as someone pressing the login button) this field will be blank. The next move made by the admin was to go to the settings screen, this is shown on row 3 of fig. 35. The user then navigated to the system status screen where they ultimately started a sterilizing cycle, this is shown by row 7 of fig. 35. The cycle length data is recorded whenever a sterilization cycle is started. Looking at fig. 33 it can be seen that at 4:09 when the user started a cycle the cycle length was set to 10 seconds. The data in fig. 34, the barcode data, that the user also scanned the barcode “QTY. 1” at 4:09. Putting all of this information together tell us that the user “admin” ran a 10 second sterilizing cycle on item “QTY. 1” at 4:09 on 10/22/2020. This of course is well short of the recommended 120 second cycle. This action could then be highlighted in the operation log excel sheet as improper use and alert staff the item “QTY. 1” needs to be properly sterilized. Conversely, if the data entries for

4:10 are analyzed it shows that user “admin” ran a proper 120 second sterilizing cycle on item “3389110349474”.

	A	B	C
1	Date	Time	Cycle Length
2	10/22/2020	4:09:46	10
3	10/22/2020	4:10:19	120
4	10/22/2020	4:13:18	120
5			
6			

Fig.33 Cycle Length Data

	A	B	C
1	Date	Time	Barcode Scanned
2	10/22/2020	4:09:44	QTY. 1
3	10/22/2020	4:10:10	3389110349474
4	10/22/2020	4:13:25	3389110404197
5			
6			

Fig.34 Barcode Scanner Data

	A	B	C	D
1	Date	Time	User_Name	Comment
2	10/22/2020	4:09:33		Login
3	10/22/2020	4:09:36	admin	Settings
4	10/22/2020	4:09:40	admin	System Status
5	10/22/2020	4:09:41	admin	Reset Button
6	10/22/2020	4:09:41	admin	Reset Button
7	10/22/2020	4:09:46	admin	Start Button
8	10/22/2020	4:09:46	admin	Start Button
9	10/22/2020	4:09:59	admin	Settings
10	10/22/2020	4:10:02	admin	Cycle Length
11	10/22/2020	4:10:04	admin	System Status
12	10/22/2020	4:10:15	admin	Settings
13	10/22/2020	4:10:16	admin	System Status
14	10/22/2020	4:10:19	admin	Start Button
15	10/22/2020	4:10:19	admin	Start Button
16	10/22/2020	4:13:18	admin	Start Button
17	10/22/2020	4:13:18	admin	Start Button
18	10/22/2020	4:27:04		Login
19	10/22/2020	4:27:06	admin	Operation Log
20				

Fig.35 Operation Log Data

## Data Collection via Wireless Connection

The data saved on the SaniQuip sanitizer can also be collected using a wireless connection. This data collection method requires that the SaniQuip sanitizer and the PC being used are connected to the same wireless network. Follow these steps to transfer the data files from the SaniQuip sanitizer over a wireless connection:

1. Connect the SaniQuip sanitizer and PC to the same wireless network. This process is detailed in the “Initial Setup” section of the manual.
2. Open Windows file explorer on your PC.
3. In the address bar, enter the following: “ftp:uploadhis:111111@192.168.1.131”
  - a. In the address above “111111” is the password for the sanitizer and “192.168.1.131” is the IP address of the sanitizer. The password is set to 111111 as default. The IP address will vary for each sanitizer but the “initial setup” section of the manual details how it can be obtained. The screen in fig.36 should now be displayed.

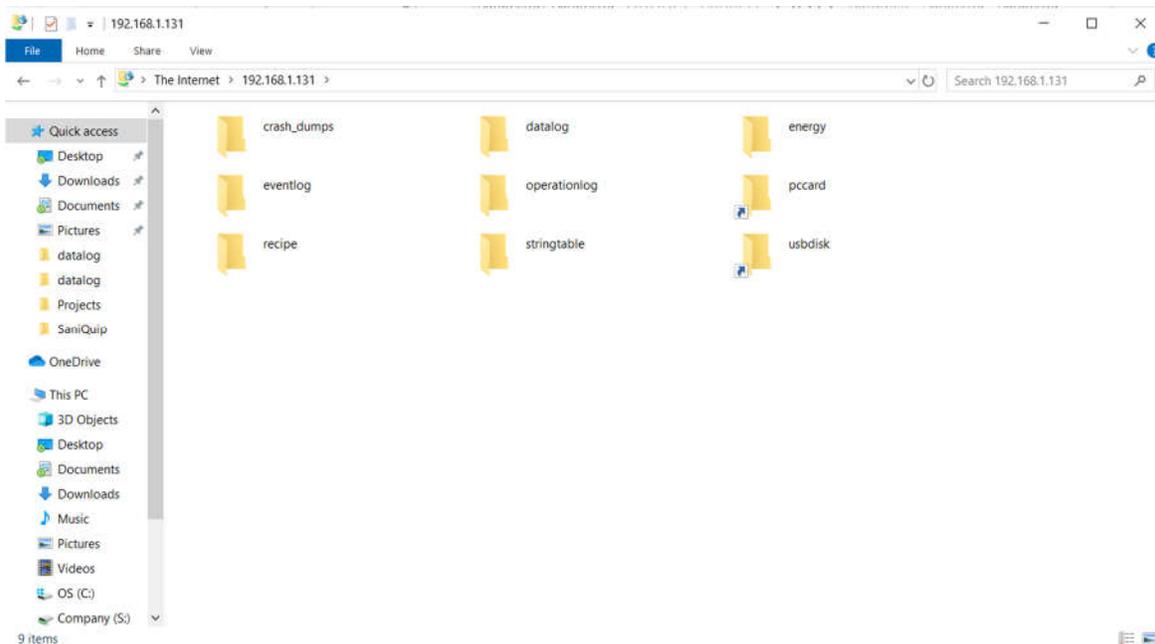


Fig. 36 FTP connection

4. The data stored on the sanitizer is located in the “datalog” and “operationlog” folders. Opening either of these folders will display the .db files.
5. Save the desired files to the PC.
6. Convert these files from the .db format to the .csv format using the same procedure as steps 8-17 in the “Data Collection Via USB” section of the manual.