# DMQ USHX APP v2.0.0
## Quick Start Guide

*For more detailed instructions see the*
**Software Installation and User Manual**
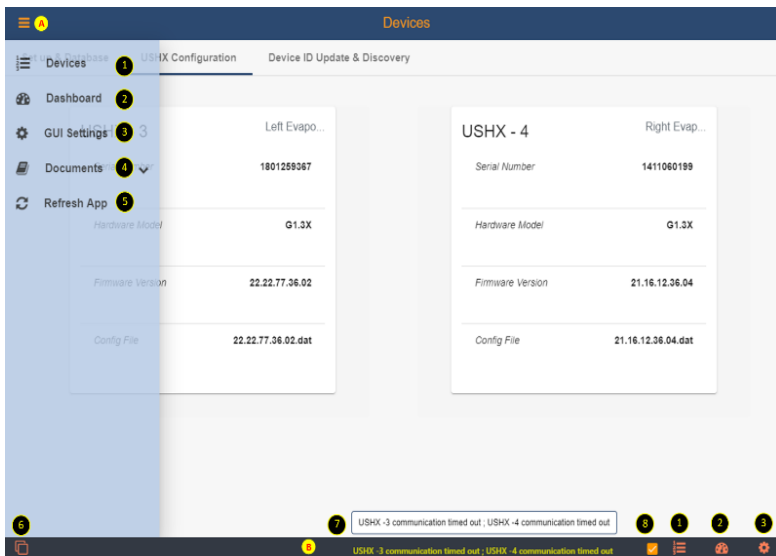
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| Hardware Requirements | System Requirements |
|---|---|
| • *USHX device(s)*<br>• *USHX wiring harness*<br>• *Isolated USB to RS485 adapter*<br>• *Laptop or desktop PC*<br>• *Small flat tip screwdriver*<br>• *Wire stripper* | • *Operating System: Microsoft Windows 7, Windows 8/8.1, or Windows 10*<br>• *64-bit Version*<br><br>*Contact DMQ for 32-bit Version* |

## Software Installation and Communications Setup

- Install the DMQ USHX APP using the ***DMQ-USHX-APP_vX.X.X_Installer.msi***
- The HOST PC and the USHX should be connected through an **Isolated** USB-to-RS485 adapter. If the USB-to-RS485 adapter is being used with the associated computer for the first time, the driver(s) for the device must be downloaded and installed.
- Make a note of the COM port number and ensure the COM Port Properties are as follows: Bits per second [9600], Data bits [8], Parity [None], Stop bits [1], and Flow control [None]. Start the software application and select the COM port and setting being used by the USHX network.

## Software Functions



| | Description |
|---|---|
| **A** | **Menu** – Helps user to quickly navigate through the app. Clicking the icon will pop-out shortcuts to Devices (1), Dashboard (2), GUI Settings (3), Documents (4) and to Refresh App (5). |
| **B** | **Footer** – Helps user to quickly navigate to Add Config File (6), Notifications (7), Tooltip (8), Devices (1), Dashboard (2) and GUI Settings (3) |
| ① | **Devices** – Shortcut to list of Devices and Settings (Located in both section **A** & **B**) |
| ② | **Dashboard** – Shortcut to Dashboard (view and plot data) (Located in both section **A** & **B**) |
| ③ | **GUI Settings** – Shortcut to Application settings (Located in both section **A** & **B**) |
| ④ | **Documents** – Shortcut to open Software Manual and Quick Start Guide |
| ⑤ | **Refresh App** –Will automatically restart the application. Windows shortcut: "Ctrl" + "R" |
| ⑥ | **Add Config file** – The user must add a configuration file to match the firmware version or default map will be used. This action is required to show all applicable parameters for this firmware. |
| ⑦ | **Notifications** – All notifications will appear in this section. In the case that the notification is too long to be displayed, hover over this section and a pop up with all notifications will appear. |
| ⑧ | **Tooltip** – Provides brief descriptions for various features throughout the software when the mouse is hovered over a button. |

## Set up & Database

The database is used to setup communication between the software and each individual USHX. The **factory default Device ID** of each USHX is '1'. To setup the database, complete the following steps:

*1.* Ensure USHX is powered and connected to the wiring harness. Device ID 1 should already be listed on start-up.

*2.* To add a remark to the Device, click the pencil and type your remark and click Submit.

*3.* Ensure the Status is "Online" and the Monitor is toggled to the ON position (blue, toggled right).

**Note:** *To get the USHX Device information (Serial Number, Hardware, FW Version), the user will need to remove the device by clicking the red trashcan before entering the Device ID as seen in the figure to the right.*



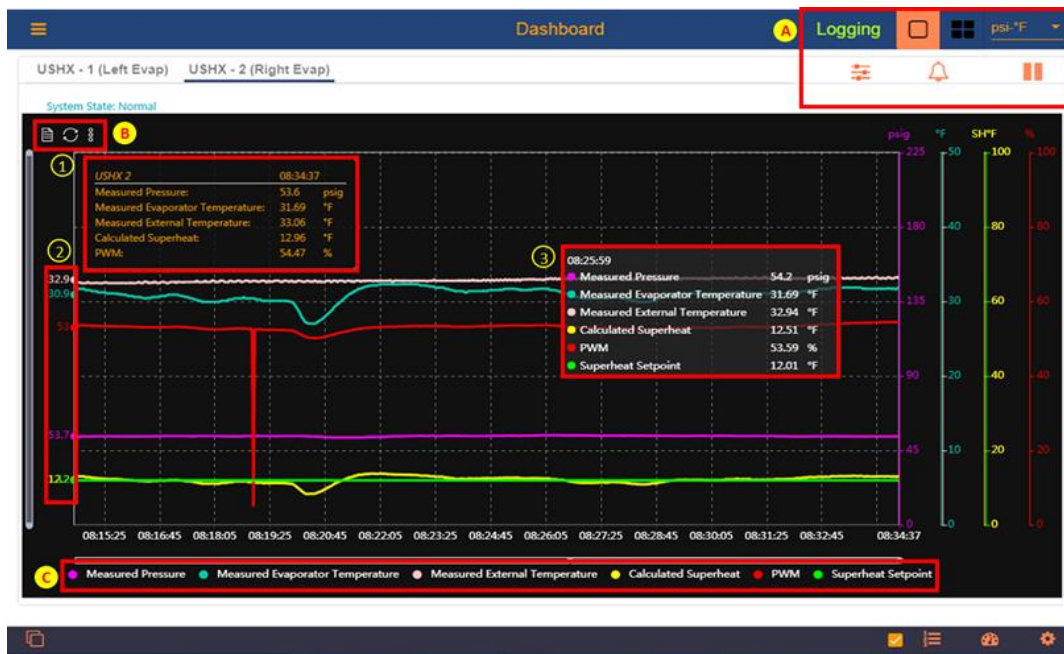| Device ID | Serial Number | Hardware Model | Firmware Version | Remarks | Status | Monitor | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 1611283374 | G1.3X | 22.16.82.36.02 | Right Evaporator | Online | | ✎ | 🗑 |

## USHX Configuration

This section is used to configure USHX settings. It displays all the USHX(s) that are 'Online' and toggled to 'Monitor' in the database. After selecting the USHX, the APP will redirect the user to configure each parameter setting for that USHX. All USHX settings are set by numerical input or button selection.

| Parameter | Firmware Version 21.20.82.36.01 | Firmware Version 22.22.82.36.02 | Firmware Version 23.20.82.36.08 |
|---|---|---|---|
| Device Mode | Superheat Control | Superheat Control | Superheat Control |
| Refrigerant | Per system requirement | Per system requirement | Per system requirement |
| PWM Frequency | 24Hz | 60Hz | 60Hz |
| PWM Setpoint | N/A | N/A | N/A |
| Superheat Setpoint | 13°F | 13°F | 13°F |
| Gain1 | 1 | 1 | 1 |
| Gain2 | 0.1 | 0.05 | 0.05 |
| Flood Control Superheat | 1°F | 1°F | 1°F |
| Active Clean Cycle | Microvalve + Spool ON Clean cycle interval = 20 mins | Microvalve + Spool ON Clean cycle interval = 20 mins | Microvalve + Spool ON Clean cycle interval = 20 mins |
| Control Scheme | A | B | B |
| Sensitivity | 30 for HVAC Systems 15 for Refrigeration Systems | 30 for HVAC Systems 15 for Refrigeration Systems | 30 for HVAC Systems 15 for Refrigeration Systems |
| Passive Clean Cycle | ON | ON | ON |
| PWM Toggle | Enable | Enable | Enable |
| Flood Control ROC | 0.3%/sec | 0.3%/sec | 0.3%/sec |
| Evap-out Time Constant | 1 sec | 1 sec | 1 sec |
| Impulse PWM Frequency | N/A | 5Hz | 5Hz |
| Impulse Delta PWM | N/A | 10% | 10% |

## Dashboard:

This section is to view the real time plot for every USHX on the network. The data plots vary depending on the USHX configuration settings.



| | Description |
|---|---|
| ① | **Current Data values** displays the real time value for each parameter. |
| ② | **Average Data values** of the data on the plot. When a different section of the plot is analyzed these values will adjust accordingly. The location of the values along the Y axis depends on the average data value and the corresponding data's scale. |
| ③ | **Specific Point Data Hover Pop up.** When the user places the cursor over the plot, a pop-up shows parameter values at the time corresponding to the cursor location. |



| ④ | **Log Data** begins recording data for all monitored controllers. |
|---|---|
| ⑤ | **Single or Multi View icon** changes the number of plots displayed in the Window. |
| ⑥ | **Display units** changes all units throughout the APP **Note: Does not change the units of the Logged Data.** |
| ⑦ | **USHX Settings icon** displays parameters for the USHX being plotted |
| ⑧ | **Recent Notifications icon** displays USHX notifications |
| ⑨ | **Pause/Update toggle** pauses and continues the plot. While paused the user can adjust both x and y axis of the viewing window While paused the data is still being processed and recorded |
| ⑩ | **Table View icon** shows plotted data in a table format |
| ⑪ | **Restore icon** is used to reset the plot's viewing window after it has been adjusted. This is used primarily when the plot is paused. |
| ⑫ | **Chart Options** allows the user to turn ON and OFF grid lines and Chart Tooltip |

## GUI Settings:

The GUI Settings tab allows the user to configure data logging settings and customize the plot area to the user's preference. This section includes the settings which customize the way the dashboard plots are displayed.

| Section | Display Settings Description |
|---|---|
| Display Pressure | Indicates pressure is displayed as absolute or gauge pressure |
| Serial Port | Indicates COM Port is being used |
| Serial Port Refresh Rate | Options to change plot refresh rate and data recording rate |
| Serial Port Setting | Indicates the settings of the COM Port being used |
| Points on Plot | Option to select the number of data points visible in the active plot(s)<br>**Note**: 1500 points per USHX are always saved on the APP adjusting this setting only affects how many of these points are shown in the dashboard |
| Time Span on Plot | Indicates the maximum time span on each active plot   Time = (Serial Port Refresh rate) x (quantity of USHX being monitored) x (Points on Plot) |
| Line Style | Option to select between dotted, dashed, or solid lines |
| Y-Axis Ranges | Customizable Y axes scale.  **Note**: Must click the "Update" button for each range change to take effect |
| Line Color | Customizable plot lines for each measured parameter by selecting default colors, color palette, Hex value, or RGB/HSL values |
| Show Quick Start Guide At Start | Option to display the Quick Start Guide when the App opens. |
| Section | Data Log Description |
| File Units | Select the units to save data |
| Pressure Type | Select the absolute or gauge pressure for display and to save data |
| Set Directory | Set the directory to save data; default is C:\Users directory |