# Master-800 Centralized Dashboard

Master-800 provides a centralized dashboard to manage up to 999 battery banks per unit.





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### Key Features:

- 1) Faster than PC software.
- 2) Automated pulling data from remote units in a network.
- 3) Analyze real-time data and present it on a summary table for all battery banks.
- 4) Generate alarms against set thresholds.
- 5) Highlight battery banks with SERVICE and UREGNT alarms.
- 6) Deliver alarm via email to multiple receipts.
- 7) Log and display recent 100 alarms.
- 8) Sort all battery banks with each column to prioritize service.
- 9) Access from anywhere in the same network with any web browser.
- 10) Allows multiple users at the same time without installation of software.
- 11) Easy to silence alarm for a battery bank for a known situation.

As BatteryDAQ continues to develop more convenient functions, user can upgrade firmware once new version is released.

## 1. IP address setting

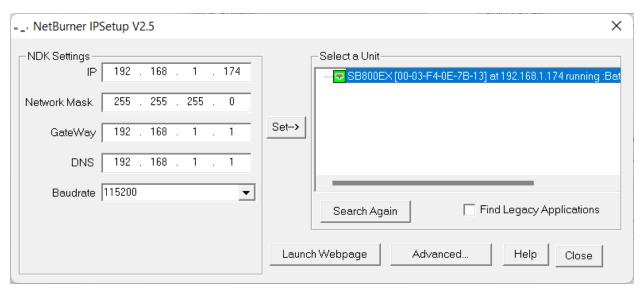
Download IpSetup.exe from BatteryDAQ website:

https://batterydaq.com/tech/IpSetup.exe

or

https://batterydag.com/tech/lpSetupV21.zip

Connect the Master-800 unit to your network, power on the unit, Run IpSetup.exe to search for the unit.



Select/highlight the "BatteryDAQ Master800".

Assign this unit a static IP. Set to correct Mask and Gateway.

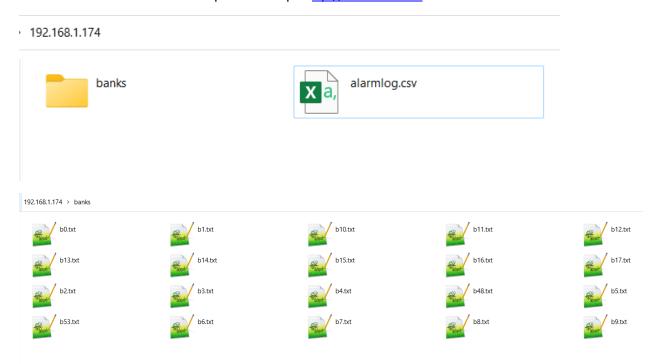
Click "Set" to save to unit.

Wait for a minute, search again, it shall have the new IP settings.

### 2. Battery Bank Configuration

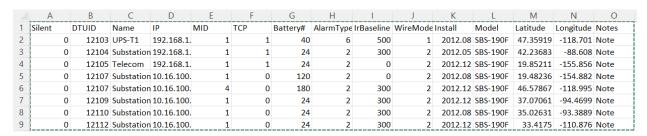
The configuration information for sites and battery banks can be managed as an Excel sheet "Banks.csv" on your local computer. If you have made any changes via Master-800 web interface, then you shall download an updated Banks.csv file from Master-800 and save it in local disk for backup.

The individua bank information is stored on SD card. .../banks/b\*.txt. Each bank has its own b\*.txt file. Those files can be accessed via ftp. FTP example: <a href="ftp://192.168.1.16">ftp://192.168.1.16</a>



#### 2.1 Prepare Bank Settings

Follow the template, to add/delete battery bank. Do NOT add/delete columns.



Silent	DTUID Name		IP	MID	TCP	Battery#	Alarm Type
0	12103	UPS-T1	192.168.1.9	1	1	40	6
0	12104	Substation-4	192.168.1.222	1	1	24	2
1	12105	Substation-5	71.166.97.202	1	1	24	2
0	12107	Substation-7	10.16.100.24	1	0	120	2
0	12107	Substation-8	10.16.100.25	4	0	180	2

Table continues with columns:

IrBaseline	IrBaseline Wire Mode		Model	Latitude	Longitude	Notes
500	1	2012.08	SBS-190F	47.35919	-118.701	Note
300	2	2012.05	SBS-190F	42.23683	-88.608	Note
0	2	2012.12	SBS-190F	19.85211	-155.856	Note
400	2	2012.08	SBS-190F	19.48236	-154.882	Note
0	1	2012.12	SBS-190F	46.57867	-118.995	Note

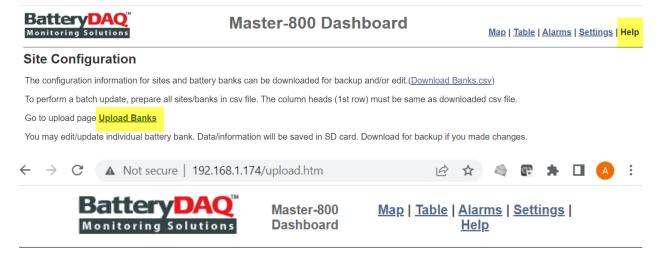
## This is a csv file so Name and any column other than Notes cannot have comma "," in the content.

Silent	0 ( <b>Default</b> ) - Normal Notification; 1 - Alarm Notification Disabled.
	-1 for inactive bank, no data update, not listed on Concise View
	[For Oct-2022 or earlier version, this column was an index number. It must be corrected before upload to new version.]
DTUID	MID is the bank number (unit#) on DTU or matched MID on DAS software while using Modbus-TCP.
Name	Site and Battery Bank name, max 20 chars
IP	IPv4 address only
MID	unit ID on DTU (If utilize UDP, then it is the Modbus ID)
ТСР	set to 1 ( <b>default</b> ) if you can access the Sentry units in your network. Otherwise set to 0 for receiving data from Sentry unit. In that case, the Sentry units need to set host IP as Master-800's static IP.
Battery#	Max 240
Alarm Type	Keep consistent with the alarm type on Master-800 settings
	/AlarmSettinngs.htm
IR Baseline	Set to <b>0 (Default)</b> for using average, otherwise set to a value, minimum 30. No decimal, input 999 for 0.999mohm@2V and 9.99@12V
Wire Mode	1 - 1-wire mode; 2 - 2-wire mode with inter-cell connection resistance
Install Date	Input as a decimal between year and month, for example 2019.08
(Battery) Model	Max 20 chars
Latitude	GPS Latitude, check from Google Map if not available
Longitude	GPS Longitude
Notes	Notes is the last column; it can have comma in its content. Max 50 chars

Save Excel sheet as csv file for uploading.

#### 2.2 Upload Bank.csv to Master-800

#### Navigate to Help page



## Upload csv file for Battery Banks

Download existing settings to backup before upload (Download Banks.csv)

Select firmware file with the "Choose File" button below.

Click "Upload Banks" and wait for it to finish uploading.

IMPORTANT: The filename must be "banks.csv".

Select firmware file: Choose File No file chosen

Upload Banks.csv

Only authorized person can upload settings for battery banks.

Wait for completion. Refresh webpage to check. It shall reflect the new configurations.



0,12103,UPS-T1,192.168.1.9,1,1,40,6,500,1,2012.08,SBS-190F,47.3591944,-118.701083,Note 0,12104,Substation-4,192.168.1.222,1,1,24,2,300,2,2012.05,SBS-190F,42.2368333,-88.6079722,Note 0,12105,Telecom,192.168.1.151,1,1,24,2,0,2,2012.12,SBS-190F,19.8521111,-155.856277,Note 0,12107,Substation-7,10.16.100.24,1,0,120,2,0,2,2012.08,SBS-190F,19.4823611,-154.881666,Note 0,12107,Substation-8,10.16.100.25,4,0,180,2,300,2,2012.12,SBS-190F,46.5786666,-118.994638,Note 0,12109,Substation-9,10.16.100.26,1,0,24,2,300,2,2012.12,SBS-190F,37.0706111,-94.4699444,Note 0,12110,Substation-10,10.16.100.27,1,0,24,2,300,2,2012.12,SBS-190F,35.0263055,-93.3888611,Note 0,12112,Substation-12,10.16.100.28,1,0,24,2,300,2,2012.12,SBS-190F,33.4175,-110.87601,Note 0,12113,Substation-13,10.16.100.29,1,0,24,2,300,2,2012.12,SBS-190F,29.2405555,-100.086444,Note 0,12304,BatteryDAQ Lab,71.166.101.130,1,1,8,6,300,1,2012.12,SBS-190F,39.487359,-76.660019,Note 0,12304,BN-1,72.167.223.197,10,1,4,6,300,1,2012.12,SBS-190F,28.6904722,-100.490277,Note

Web page will display the uploaded content. Click ← to go back and check the table. For Consise View, it only dislays active banks. With Full Table view, it will display all banks including deactivated.

If the SNMP is enabled, you must restart DTU to update configuration. On <u>Settings</u> page, type Passcode **77882** to restart.

Wait for a minute, unit shall have new configuration loaded.

Bank settings and information can be updated online. (See details in "Individual Bank View".)

## 3. Device Settings

#### Server Settings | Alarm Settings | SNMP Settings

#	Description	Value	New Value
1	Server ID	61000012	61000012
2	Server Name	Master-800 Dashboard	Master-800 Dashboard
3	Enable Secure Mode(Y/N) (1/0) Enable: Web pages are password protected.	0	0
4	Web Password (Case Sensitive)	Username: master or admin	••••
5	UDP Data Expiration(minutes)	60	60
11	0:Celsius/1:Fahrenheit	0	0
12	Site Type	1	1
13	0:RS485/1:Wireless	1	1
21	Email SMTP Server	mail.batterydaq.net	mail.batterydaq.net
22	Email Server Port Set 0 to disable email	25	25
23	Email TLS(N/Y/Plain) (0/1/2)	1	1
24	Email From	alarm_notice@batterydaq.net	alarm_notice@batterydaq.ne
25	Email Username	alarm@batterydaq.net	alarm@batterydaq.net
26	Email Password	-	•••••
27	Email Receipt-1	alarm@batterydaq.net	alarm@batterydaq.net
28	Email Receipt-2		
29	Email Receipt-3		
31	Time Zone UTC +/-	-5	-5
32	Date/Time (set DNS for NTP) (-1 hour for Daylight Saving)	12/7/2022 15:43:29	12/7/2022 15:43:29
41	Home Latitude	39.487320	39.487320
42	Home Longitude	-76.660004	-76.660004
43	Initial Zoom(5-18)	8	8

If you wish to use your own mail server, please fill in correct information for #7 to #12. Type passcode **2222** to send a test email.

Save settings with code **7777**.

If only change the date/time, save it with code **7778**.

## Reference for Settings

#	Description	Example	Notes
1	Server ID	13999	Factory assigned SN number. User cannot change.
2	Server Name	East Region Battery Dashboard	Max 29 chars
3	Enable Secure Mode(Y/N) (1/0)	0	Enable: Web pages are password protected.
4	Web Password (Case Sensitive)	Username: master or admin	Be careful. BatteryDAQ doesn't know your passcode if you have set to a different one other than default.
5	UDP Data Expiration(minutes)	60	
11	0: Celsius / 1: Fahrenheit	0	
12	Site Type	1	Site Type 1 for Utility NERC and UPS critical power Site Type 2 for Telecom sites and cycling applications with SOC and Runtime estimation
13	0:RS485 / 1: Wireless	0	Only for direct connection to monitoring devices via RS485 or wireless serial port.
21	Email SMTP Server	mail.batterydaq.net	
22	Email Server Port	0	Set 0 to disable email
23	Email TLS(N/Y/Plain) (0/1/2)	0	
24	Email From	alarm_notice@batteryda q.net	
25	Email Username	alarm@batterydaq.net	
26	Email Password	-	
27	Email Receipt-1	alarm@batterydaq.net	
28	Email Receipt-2		
29	Email Receipt-3		
31	Time Zone UTC +/-	0	
32	Date/Time (set DNS for NTP)	10/9/2022 14:24:59	(-1 hour for Daylight Saving)
41	Home Latitude	39.497320	GPS coordinates
42	Home Longitude	-76.660004	
43	Initial Zoom (5-18)	8	Map depth

## 4. Alarm Settings

Up to 8 types of alarm can be set/adjusted for your application.

Alarm settings are stored in Master-800 flash memory, not in SD card.

Make changes on **Alarm Settings** page.

Save alarm settings with Passcode: 7777.



#### Master-800 Server

Concise View | Full Table | Re

#### Server Settings | Alarm Settings

BatteryType	NominalVol.	Vol.High	Vol.Low	DischargeLow	IR High	Temperature	ThermalRisk	SOH	SOC	New Value(comma separated)
1	1200	1500	1350	1100	30	45	80	80	20	1200,1500,1350,1100,30,4
2	2000	2350	2150	1850	30	45	80	80	20	2000,2350,2150,1850,30,4
3	2000	2350	2100	1800	50	45	80	80	20	2000,2350,2100,1800,50,4
4	6000	7050	6300	5400	50	45	80	80	20	6000,7050,6300,5400,50,4
5	6000	7050	6300	5400	50	45	80	80	20	6000,7050,6300,5400,50,4
6	12000	14700	12900	10800	50	45	80	80	20	12000,14700,12900,10800
7	12000	15000	12500	10800	50	45	80	80	20	12000,15000,12500,10800
8	16000	19300	17200	14400	50	45	80	80	20	16000,19300,17200,14400

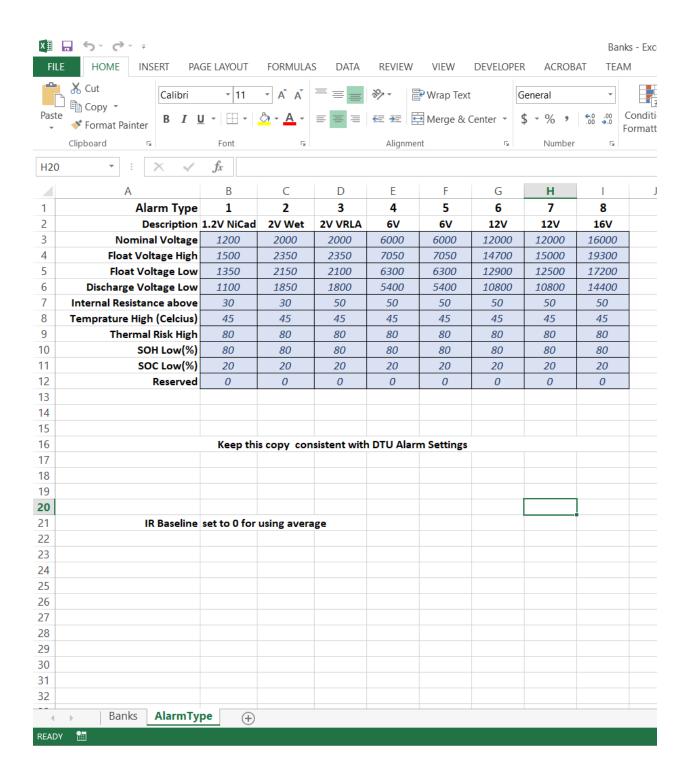
```
:: Alarm Thresholds are set for Battery Type 1 to 8 to match Bank.xls.
:: Type 1 default 1.2V [1200] NiCad
:: Type 2 default 2V [2000] Wet Cell
:: Type 3 default 2V [2000] VRLA Cell
:: Type 4 default 6V [6000] Battery A
:: Type 5 default 6V [6000] Battery B
:: Type 6 defult 12V [12000] Battery B
:: Type 7 defult 12V [12000] Battery B
:: Type 8 default 16V [16000] Battery B
:: Type 8 default 16V [16000] Battery B
:: Type 7 defult 12V [12000] Battery B
:: Type 8 default 16V [16000] Battery B
:: Type 8 default 16V [16000] Battery
:: Voltage value in mV for each battery. IR is percentage above average.
:: Temperature in Celcius degree. Thermal Risk default 80.
:: SOH/SOC 10 to 100 (Telecom Models only).

Enter Password: Update DTU Configuration

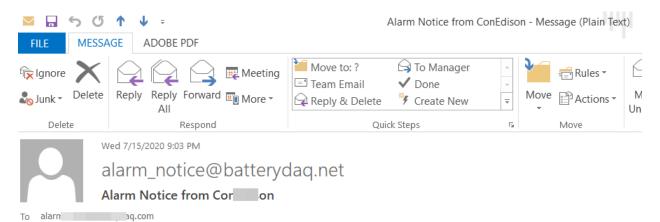
Only authorized person can make changes.Click "Update" to send a data packet.
```

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Please update the Excel sheet AlarmType page to keep it consistent as backup or shared file within your orgnization and battery service contractor.



#### Alarm(s) will be sent by email. Change to your email server and do a test.



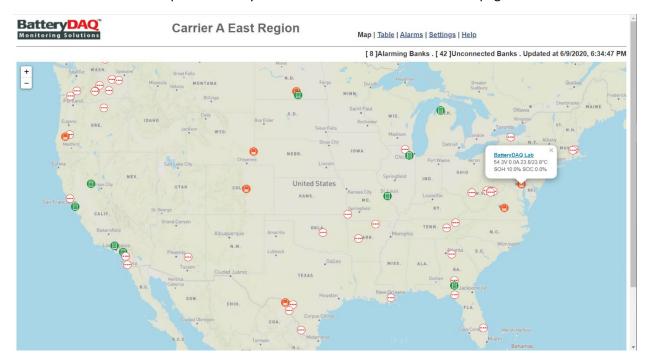
#### Alarm Notice from Site: ConEdison

[1]	7/	21:2	http://	7	#12372 BN-1	SOH / Warning			
53.9V	0.0A	39.5ac	27.5/27.5C	13.486	13.826/13.255V	IR(0.924/1.054 14	.0%)	SOH:78.2%	SOC:0.0%
[2]	7/: ,	21:2	http://	7	#12367 ETNA	SOH / IR / Warning			
54.3V	-0.4A	0.0ac	20.3/20.3C	13.592	14.629/11.652V	IR(0.497/1.602 22	2.3%)	SOH:10.0%	SOC:0.0%
[3]	7/	21:2	http://7	1	#12366 BN-1	SOH / Warning			
53.9V	0.3A	14.бас	27.5/27.5C	13.496	13.658/13.285V	IR(1.246/1.770 42	.0%)	SOH:18.5%	SOC:0.0%
[4]	7/	) 21:2	http://7	7	#12328 FRTL ST	R 1 SOH / IR / V	Warni	ng	
53.8V	-0.3A	4.8ac	24.5/24.5C	13.462	13.483/13.434V	IR(0.001/0.002 10	0.0%)	SOH:10.0%	SOC:0.0%
[5]	7, .	21:2	http:/,		#12326 FXCR_2	S SOH / War	ning		
54.7V	0.2A	42.1ac	25.3/25.3C	13.682	13.701/13.663V	IR(0.775/0.856 10	.4%)	SOH:79.7%	SOC:0.0%

## 5. Map View

All sites will be displayed on an interactive map with alarm status.

Please verify map function in your private network. If the map content is blocked by firewall, you cannot zoom into detail street map. Your IT may check the source code from the web page and unblock it.



Change GPS coordinates for Home and proper map depth to set the default view covering your site range.

41	Home Latitude	39.487320	39.487320
42	Home Longitude	-76.660004	-76.660004
43	Initial Zoom(5-18)	8	8

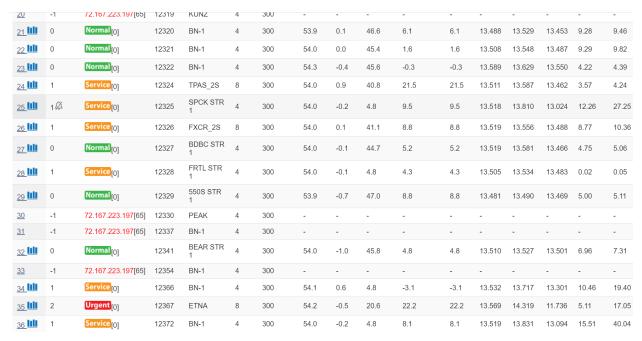
#### 6. Table View

The default home page displays all battery banks in a concise mode.

Each column can be clicked to sort with value.

If a remote unit is not communicating, it will show its IP address in RED. Otherwise it displays an icon to reflect the status Normal/Service Alarm/Urgent Alarm.

#### Concise Table View: it only displays important data and status



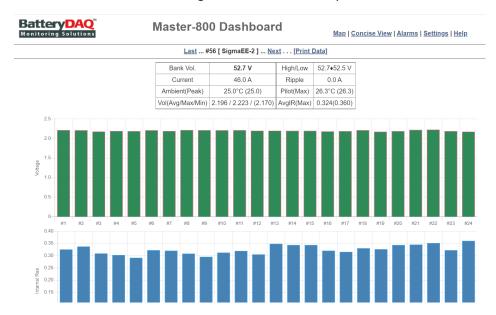
**Full Table View**: it displays all registered information on previous Excel sheet, including IP address. (Which might be crowded on screen.)



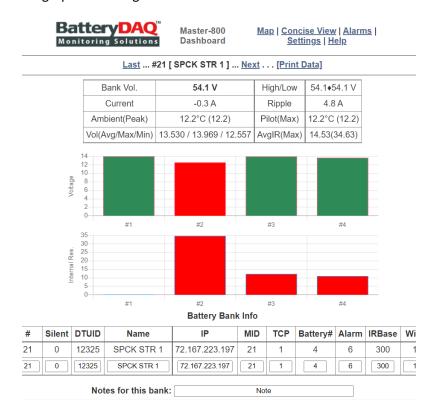
Full table view will display inactive sites as well. If you wish to activate a site, click on the first column on that row to access to that bank.

### 7. Individual Bank View

Individual bank data and settings can be viewed and updated.



Bargraph will change color for alarms.



## 8. Update and Add New Bank

Bank information can be updated online. You can also copy existing bank to add a new bank.

On table view, click on bar graph icon to access individual bank.

#### **Battery Bank Info**

#	Silent	DTUID	Name	IP	MID	TCP	Battery#	Alarm	IRBase	Wire	Install	BatteryModel	Latitude	Longitude
56	0	12106	SigmaEE-2	72.167.223.197	110	1	24	2	300	2	2012.08	SBS-190F	46.566055	-122.277916
56	0	12106	SigmaEE-2	72.167.223.197	110	1	24	2	300	2	2012.08	SBS-190F	46.566055	-122.277916

Notes for this bank:

Enter Passcode: Update Settings Only authorized person can make changes. Obtain passcode from vendor.

#### Instructions

#	Set to different bank number to copy settings to it. Make sure not to overwirite other bank.							
Silent	0 (Default) - Normal Notification; 1 - Alarm Notification Disabled; -1 for inactive bank, no data update, not listed on Concise View							
TCP	0 - Passive UDP (for 3G/4G LTE IoT); 1 (Default) - Modbus-TCP Ethernet/Fiber; 2 - Serial RS485							
Alarm(Type)	Keep consistent with alarm type settings							
IR Baseline	Set to 0 (Default) for using average, otherwise set to a value, minimum 30. No decimal, input 999 for 0.999mohm@2V and 9.99@12V							
Wire(Mode)	1 - 1-wire mode; 2 - 2-wire mode with inter-cell connection resistance							
Install(Date)	Input as a decimal between year and month, for example 2019.08							



#### Master-800 Dashboard

Map | Concise View | Full Table | Alarms | Settings | Help |



[ 17 ]Alarming Banks . [ 82 ]Unconnected Banks .

# \$	Alarm	Status	DTU# ♦	Name	No. \$	IR.Base	BusV ▼	Amp \$	Ripple	Room(°C) \$	Pilot	AvgV \$	MaxV ∳	MinV 🏺
<u>12</u>	1	Service <sub>[1]</sub>	12315	ASLK STR 1	4	300	54.5	0.7	47.3	8.1	8.1	13.629	13.771	13.484
31 []]]	1	Service [0]	12367	ETNA	8	300	54.3	-0.2	46.7	21.1	21.1	13.579	13.845	13.073
<u>19</u>	1	Service <sub>[1]</sub>	12322	BN-1	4	300	54.2	-0.3	45.8	3.0	3.0	13.562	13.591	13.531
<u>21</u>	2	Urgent <sub>[1]</sub>	12325	SPCK STR 1	4	300	54.1	-0.3	4.8	12.2	12.2	13.530	13.969	12.557
<u>30</u>	1	Service [0]	12366	BN-1	4	300	54.1	0.6	4.8	0.3	0.3	13.544	13.707	13.348

When you update this bank, make sure do not change the # number (as below example 56).

If you do want to make a copy to a new bank, of overwirte a bank, change the # number to intended.

**Battery Bank Info** 

#	Silent	DTUID	Name	IP	MID	TCP	Battery#	Alarm	IRBase	Wire	Install	BatteryModel	Latitude	Longitude
56	0	12106	SigmaEE-2	72.167.223.197	110	1	24	2	300	2	2012.08	SBS-190F	46.566055	-122.277916
56	0	12106	SigmaEE-2	72.167.223.197	110	1	24	2	300	2	2012.08	SBS-190F	46.566055	-122.277916

Use passcode "7777" to update (or your own passcode if you have changed).

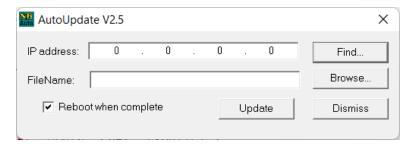
Go to "Help" page to download a banks.csv file to reflect the latest changes.

## 9. Firmware Update Method-1 (AutoUpdate)

Download software tool for firmware updates:

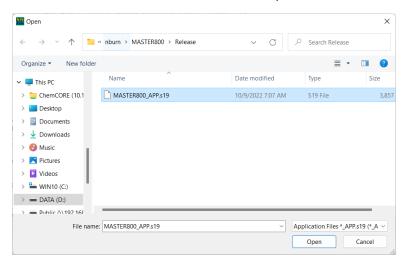
https://batterydaq.com/tech/AutoUpdate.exe

Run AutoUpdate.exe

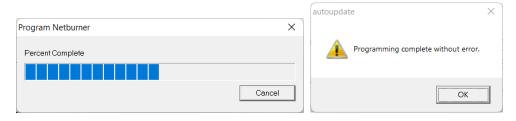


Click "Find", or type in IP address.

Click "Browse" to choose the new s19 file. Open it.



Click "Update".



Wait a minute to complete. Unit will reset to start with new firmware.

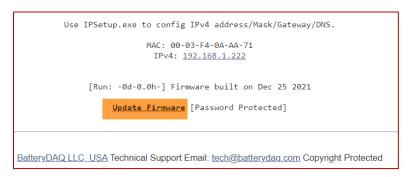
## 10. Firmware Update Method-2 (Web Upload)

Firmware update can be done with web interface. No other tools are needed.

With web browser, access correct IP address, navigate to Settings page, scroll down, click Update Firmware.

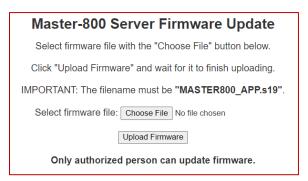
Server Settings | <u>Alarm Settings</u> | <u>SNMP Settings</u>

#	Description	Value	New Value
1	Server ID	61000012	61000012
2	Server Name	Master-800 Dashboard	Master-800 Dashboard
3	Enable Secure Mode(Y/N) (1/0) Enable: Web pages are password protected.	0	0
4	Web Password (Case Sensitive)	Username: master or admin	••••
5	UDP Data Expiration(minutes)	60	60
11	0:Celsius/1:Fahrenheit	0	0
12	Site Type	1	1
13	0:RS485/1:Wireless	1	1
21	Email SMTP Server	mail.batterydaq.net	mail.batterydaq.net
22	Email Server Port Set 0 to disable email	25	25
23	Email TLS(N/Y/Plain) (0/1/2)	1	1
24	Email From	alarm_notice@batterydaq.net	alarm_notice@batterydaq.ne
25	Email Username	alarm@batterydaq.net	alarm@batterydaq.net
26	Email Password	-	•••••
27	Email Receipt-1	alarm@batterydaq.net	alarm@batterydaq.net
28	Email Receipt-2		
29	Email Receipt-3		
31	Time Zone UTC +/-	-5	-5
32	Date/Time (set DNS for NTP) (-1 hour for Daylight Saving)	12/7/2022 15:43:29	12/7/2022 15:43:29
41	Home Latitude	39.487320	39.487320
42	Home Longitude	-76.660004	-76.660004
43	Initial Zoom(5-18)	8	8

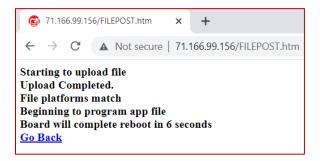




Username: admin Passcode: 7777 (Or use your own password if you have changed it.)



Choose "MASTER800\_APP.s19" file to upload. Wait for 2 minutes to finish.



Click "Go Back", then click on Settings page, scroll down to check the firmware version.

In some cases, the device may need a power off/on.

### 11. SNMP Enable and Disable

SNMP shall be disabled if not using.

Update firmware with a version newer than March-30, 2022.

On SNMP Settings page, set #3 to 0 for disable with passcode **7777**. Check if the change is made correctly.

Power off/on unit to apply the change.

Use any SNMP test program to verify.

Enable it if needed, verify with SNMP test program.

#### Server Settings | Alarm Settings | SNMP Settings

SNMP is disabled. If need to enable it, set #3 to 1 and power off/on unit.

#	Description	Value	New Value			
1	Location Name	Master-800 Dashboard	Master-800 Dashboard			
2	Community String	public	public			
3	SNMP Enable:1/Disable:0 Power off/on if changed	0	0			
4	Polling Port	161	(Do not change)			
5	Version	SNMP V1	(Do not change)			
6	Trap Recipient-1 IP	0.0.0.0	0.0.0.0			
7	Recipient-1 Port	162	162			
8	Trap Recipient-2 IP	0.0.0.0	0.0.0.0			
9	Recipient-2 Port	162	162			
10	Trap Recipient-3 IP	0.0.0.0	0.0.0.0			
11	Recipient-3 Port	162	162			
12	Trap Interval (minutes)	10	10			

Set Receipient IP to 0.0.0.0 to disable trap.

	Enter Pa	sscode:		Update SNMP Settings					
Only	authorized	person	can	make	changes.	Obtain	passcode	from	vendor

Passcode 3333 to send a test trap

## 12. Alarm Log file

Alarm log file can grow fast in case some batteries frequently having alarm. The log file can be downloaded for archive. If it is too big, for example >100 MB, it will slow down the booting because it needs to read through to locate the recent 100 alarms.

Log file can be downloaded and cleaned.

To clean the alarm history log, go to settings page, use passcode "75750" to clean history.

Alarm Log file on SD card can be accessed with ftp.



On Alarms page, right click "Download Alarm Log" to save the csv file to local computer.

