



Flux Power Software Update User Guide



Safety Precautions

The Flux Power Lithium-ion Battery is composed of lithium-ion cells and is classified as Class 9 miscellaneous hazardous material.

Precautions to correctly handle the Flux Power lithium-ion battery include:

- The battery shall only be handled by Flux Power authorized personnel familiar with handling, storing, and the installation of a lithium-ion battery.
- Do not open the battery. – Only Flux Power authorized technicians shall perform service on a lithium-ion battery.
- Do not tamper with the main power Anderson connector.
- Do not mount or store the battery upside down or on its side.
- Upon receipt, check the battery for damage during transportation.
- Always use a lifting device when installing a battery.
- Never recycle lithium-ion batteries with lead-acid batteries, please consult Flux Power or your local recycler for more information on how to recycle a Lithium-ion Battery.
- WARNING – Risk of Fire – No User Serviceable Parts
-  Consider all DC battery cells and circuits to be energized, shorting of circuits may cause a hazardous condition. Remove all metallic jewelry from hands and arms before working on battery cells or circuits.
-  SAFETY - Follow Safety Standards as required; review and follow all Safety Data Sheets “SDS” for chemical use. Follow instructions for the proper use of PPE as required.

For technical assistance on the Flux Power lithium-ion battery, contact your local Flux Power dealer at www.fluxpower.com.

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2 Introduction

In this document we will show the steps for updating the software on any one of our BMS2 Flux Power Lithium batteries.

The specific software/GUI needed will be highlighted in each of the next sections, and these sections will explain the step-by-step process to update the software on any BMS2 Flux Power Lithium Battery.

Below is the Hardware that is required for every battery:

- Computer or Tablet with a USB port.
- Flux Power Diagnostic Cable Assembly Pictured below.
 - Note: From Figure 3 below, every battery can have the RED and YELLOW wire loopback, but the M24 New Gen battery requires the RED loopback wire to power the battery ON.
**(The loopback wire color may be different on your Diagnostic Cable)*



Figure 1. PCAN Dongle (160001)

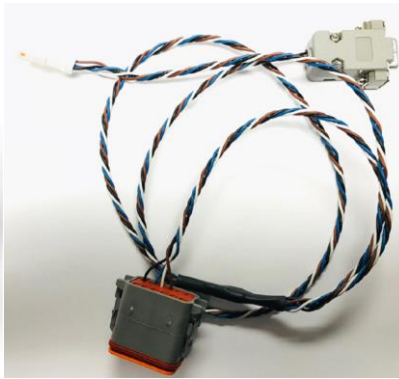


Figure 2. CAN Cable
(500040-[01, 02])

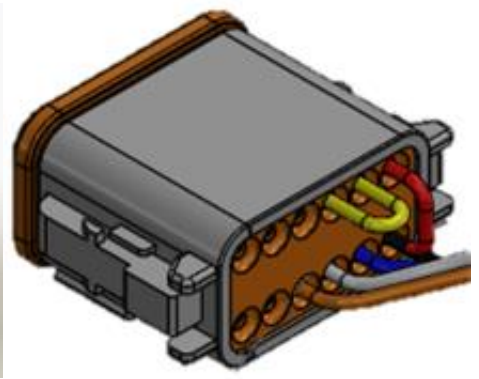


Figure 3. Close Up of Deutsch Plug

Below is the Software that is required for every battery:

- PEAK OEM DRV (Universal for all Flux Power battery models).
 - The instructions for downloading this software can be found under Appendix A.
- Flux Power Flux Connect GUI.
 - This varies from battery to battery, and the required one for each can be found under each section.
 - The GUI can be found on our website and the location can be found under Appendix A. steps 1-5.
- The correct Firmware and Factory Settings Files.
 - These should already be preinstalled on the GUI, and the current Firmware and Factory Settings for each battery can be found under Appendix B.

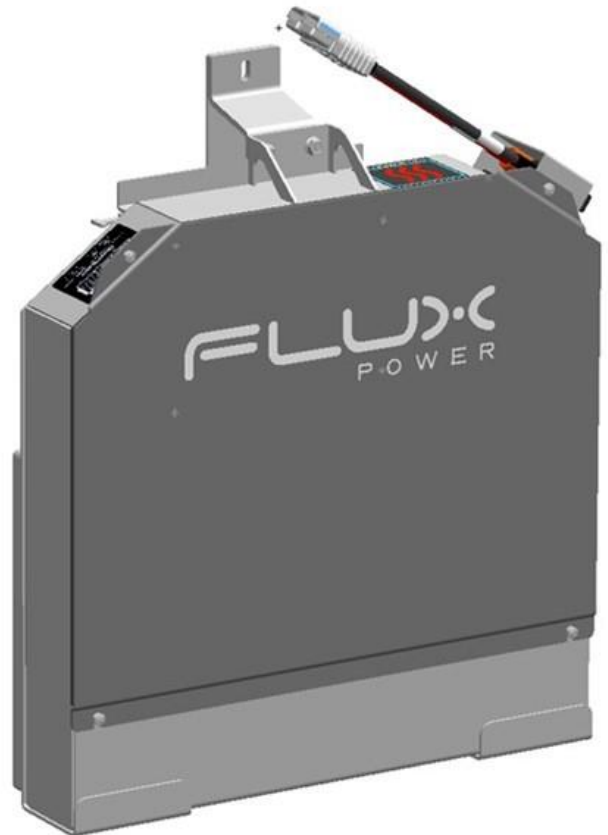
IMPORTANT: After flashing the battery with new FW, if the battery is turning itself off 10 seconds after powering it on, please refer to Appendix D.

To find the software and any other related documents for all the Flux Power battery models, please visit our support site (<https://www.fluxpower.com/support>) and select Product Technical Information. From here, please navigate to the battery model that the software is needed for and select the Software tab on the right side of the page.

3 S-Series (S8 & S24)



Flux Power S8



Flux Power S24

Software Required:

- Flux Connect System Monitor v2.0.3.11



Below are the steps for updating the software on the Flux Power Battery

- 1) Connect the computer to the battery via the Diagnostic cable.
- 2) Open the Flux Connect System Monitor 2 program.
 - a. Please note the Charge (SOC%) of the battery.

3) Select the Firmware Tab highlighted below.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist **Firmware** Connected to: BCM 1C2

Charge
94%

Current
-0.4 A

Status
All Systems Operational

CAN ID's Numeral Base
 Decimal
 Hexadecimal

Temperature Unit
 Celsius
 Fahrenheit

4) Select the Firmware Version dropdown highlighted below and select the required Firmware. (The correct Firmware can be found in Appendix B.)

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist **Firmware** Connected to: BCM 1C2

Current Firmware: 2.0.6.4

Bootloader FW Bootloader Firmware: N/A

Step	Attempts	Status
01. Initializing		
02. Opening CAN Node		
03. Selecting Flash Memory Page 1		
04. Erasing Flash Memory		
05. Blank-Checking Flash Memory Page 1		
06. Programming Flash Memory Page 1		
07. Selecting Flash Memory Page 2		
08. Blank-Checking Flash Memory Page 2		
09. Programming Flash Memory Page 2		
10. Selecting EEPROM		
11. Erasing EEPROM		
12. Blank-Checking EEPROM		
13. Programming EEPROM		
14. Entering to Application Mode		
15. Restoring the BCM Settings		

Firmware

Firmware Version
 Select a Firmware
 Select a Firmware
 2.0.6.4 1C2
 2.0.5.5 1C2
 2.0.4.12 1C2
 2.0.12.5 1C2
 2.0.11.3 1C2
 2.0.11.11 1C2

920401_FACSI

Update
Cancel

Restore/Save Settings Manually

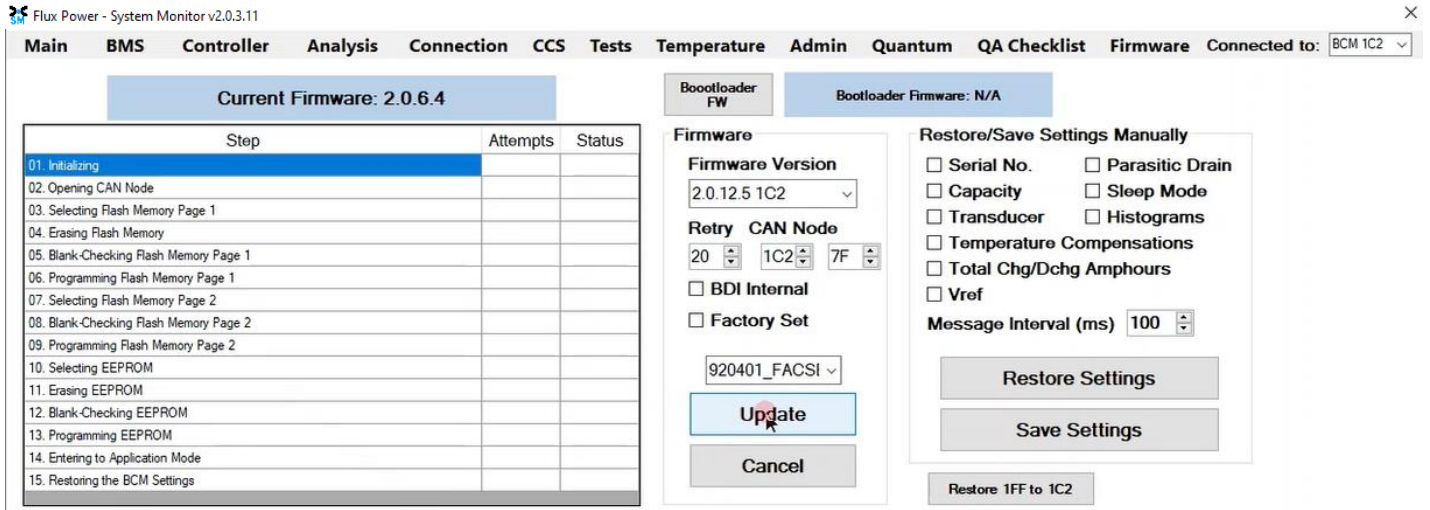
Serial No. Parasitic Drain
 Capacity Sleep Mode
 Transducer Histograms
 Temperature Compensations
 Total Chg/Dchg Amphours
 Vref

Message Interval (ms) 100

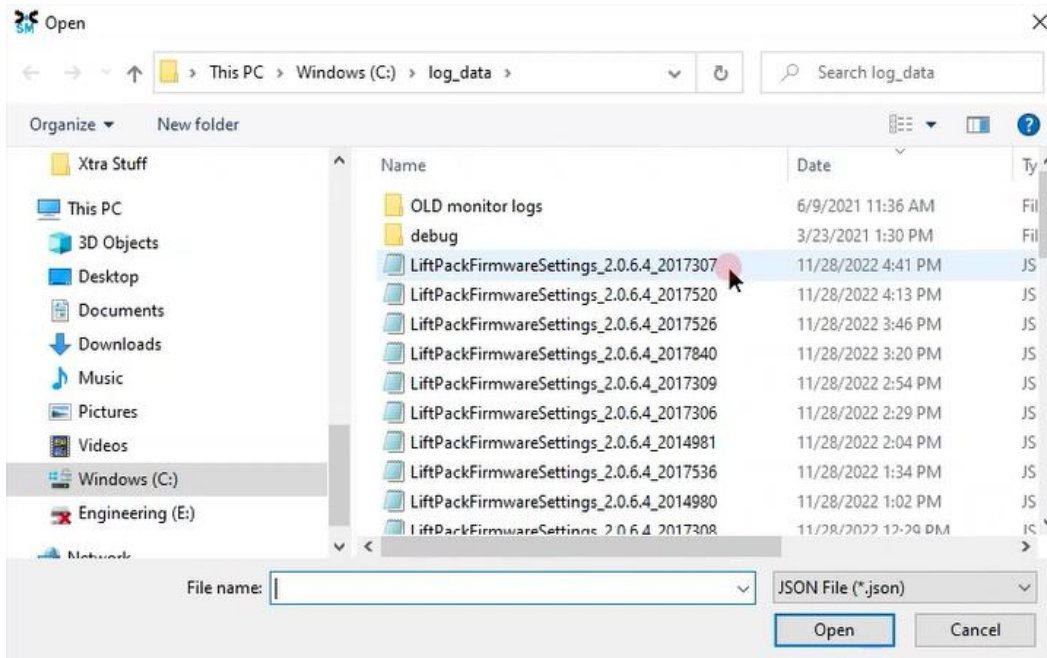
Restore Settings
Save Settings

Restore 1FF to 1C2

- 5) Make sure the BDI Internal and Factory Setting checkboxes are **UNCHECKED**, and then select Update.



- 6) Once the update finishes, select Ok in the popup window and then double click the Firmware Settings with the matching Serial Number of the battery as there may be multiple in the window, and then select Ok again in the next popup window.



- 7) Once it completes restoring the settings, press the Ok button in the popup window to restart the program.

- 8) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Set/Read Factory Settings
Compare Factory Settings

FLUX POWER

Charge
33%

Current
-0.1 A

Status
All Systems Operational

CAN ID's Numeral Base
 Decimal
 Hexadecimal

Temperature Unit
 Celsius
 Fahrenheit

- 9) Select the dropdown highlighted below and choose the Factory Setting file that is needed. (The correct Factory Setting can be found in Appendix B.)

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Setting	Default Value/Threshold	Value	Result

920401_FACSET_S8_BMS2_FX_72_rB
 920402_FACSET_S8_BMS2_FX_100_rB
 920403_FACSET_S8_BMS2_FX_180_rB
 920404_FACSET_S8_BMS2_VF_72_rB
 920405_FACSET_S8_BMS2_VF_100_rB
 920406_FACSET_S8_BMS2_VF_180_rB
 920409_FACSET_X48_FX_600_rC
 920409_FACSET_X48_FX_600_rE
 920410_FACSET_X48_FX_600_EVE_rA
 920410_FACSET_X48_FX_630_EVE_rD
 920413_FACSET_M36_FX_600_rF
 920413_FACSET_M36_FX_600_rH
 920418_FACSET_M24_FX_400_rE
 920418_FACSET_M24_FX_400_r_r_2.0.11.11_X4
 920418_FACSET_M24_FX_576_r_2.0.11.11_X4
 920419_FACSET_M24_FX_400_rB
 920419_FACSET_M24_HH_420_EVE_rC
 920446_FACSET_S24_VF_210_EVE_rB
 920460_FACSET_S24_VF_105_EVE_rB
 920462_FACSET_M36_FX_630_EVE_r_2.0.12.5
 920550_FACSET_S8_FX_72_EVE_rA
 920551_FACSET_S8_FX_105_EVE_rA
 920552_FACSET_S8_FX_180_EVE_rA
 920553_FACSET_S8_VF_72_EVE_rA
 920554_FACSET_S8_VF_105_EVE_rA
 920554_FACSET_S8_VF_105_EVE_rB
 920555_FACSET_S8_VF_180_EVE_rA

Check

- 10) After selecting the Factory Setting file that is needed, select the Factory Settings button highlighted below and wait until the green bar under the Factory Settings button completes.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Setting	Default Value/Threshold	Value	Result
Package Version	920410_FACSET_X48_FX_630_E		
CAN ID	N/A		
Firmware	2.0.12.5		
Board Temperature (F)	140		
Pack Capacity (Ah)	567		
Pack Type	X48		
Charger Type	Manual		
Parasitic Drain (mA)	122		
Top Off Cell Voltage	3.43		
Max Cell Voltage	3.60		
Balance Voltage	3.55		
100% SOC Cell Voltage	3.42		
Warning Cell Voltage	2.95		
0% SOC Cell Voltage	2.80		
Latch 0 SOC on Low Voltage	0		
Sensor Polarity	Reversed		
Transducer Value	500		
Ignore Current Level (A)	2		
Sleep Mode	Enabled		
Sleep Mode Voltage	3.20		
Sleep Mode Timeout Below (min)	24000		
Sleep Mode Timeout Above (min)	43200		
Thermal Calibration Offset Tolerance	8		
Buzzer Duration (min)	60		
Buzzer Sound Every (sec)	15		

920410_FACSET_X48_FX_630_EVE_rD

Change Bcm Id
 1C2 102
 112 122

Factory Settings

Validate

Print

Save As...

Validation Enabled

Test External CAN
 0x730: N/A

Check

After the battery finishes Step 10, please use Appendix C. to recalibrate the SOC to what it was before the update. Then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.

4 M-Series (M24)



Flux Power M24 Legacy



Flux Power M24 New Gen

Software Required:

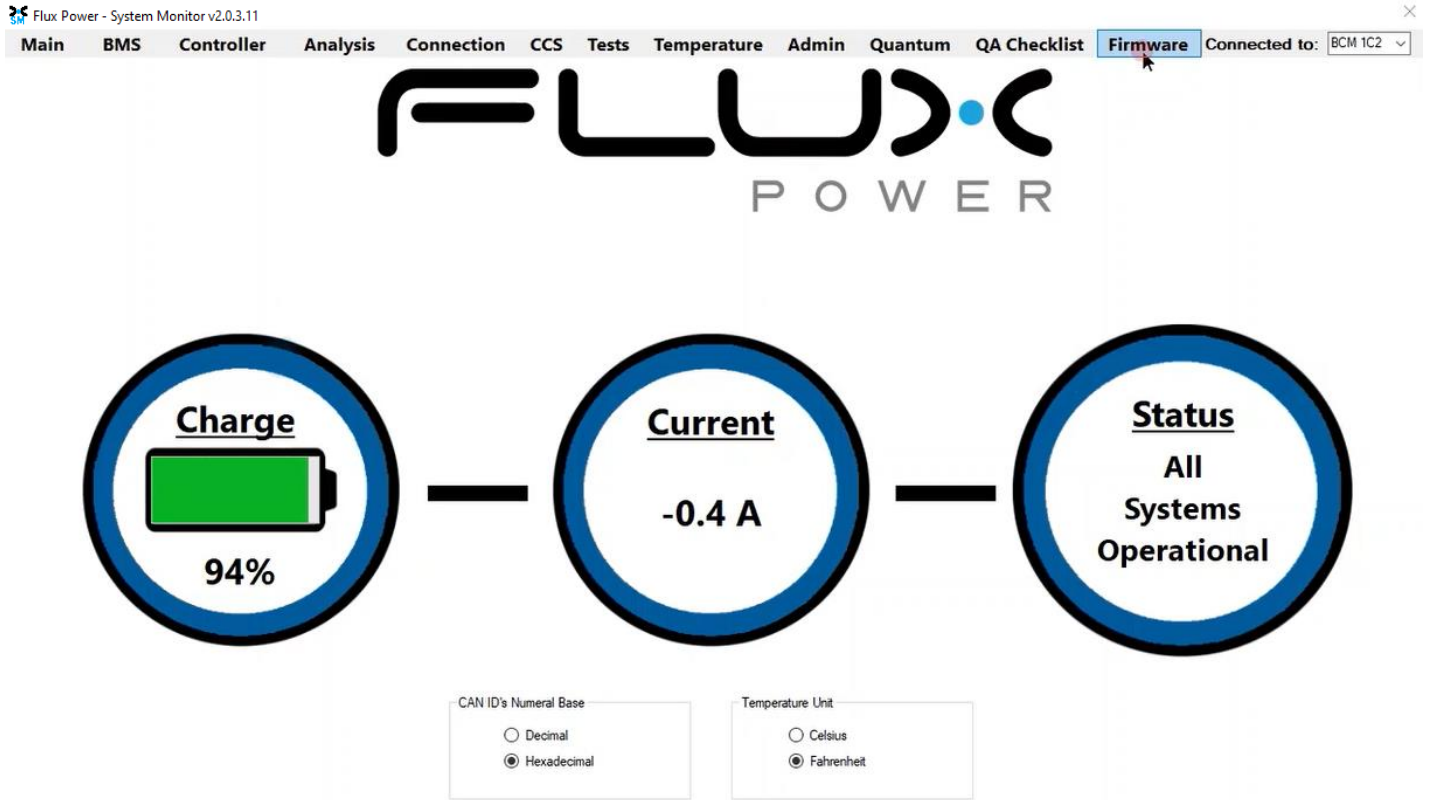
- Flux Connect System Monitor v2.0.3.11



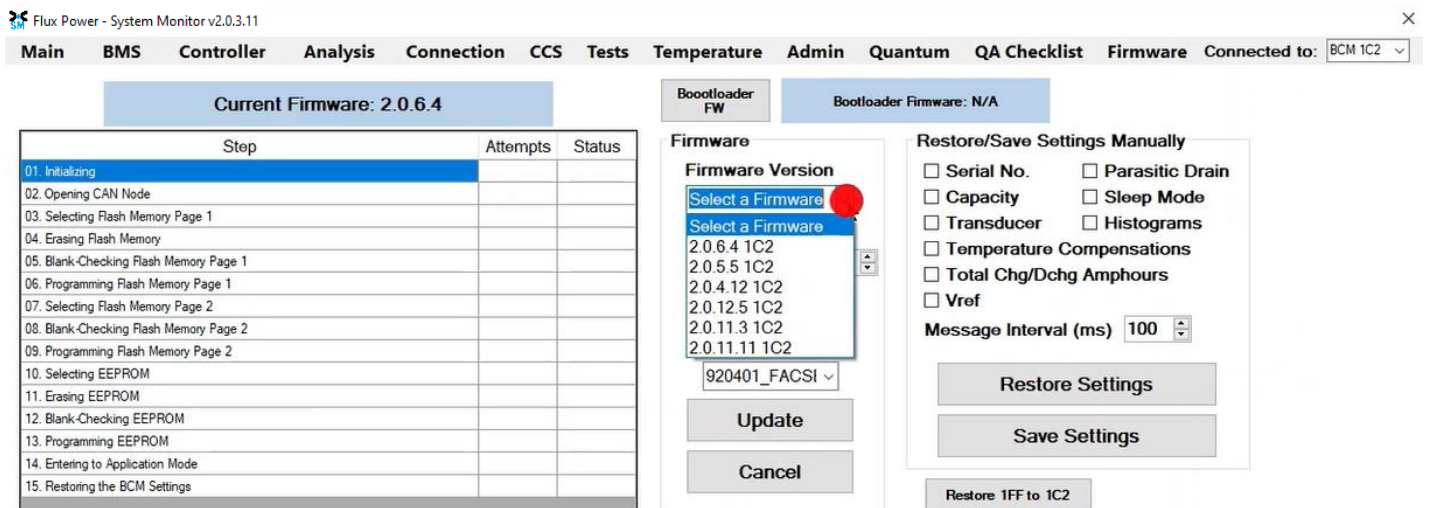
Below are the steps for updating the software on the Flux Power Battery

- 1) Connect the computer to the battery via the Diagnostic cable.
- 2) Open the Flux Connect System Monitor 2 program.
 - a. Please note the Charge (SOC%) of the battery.

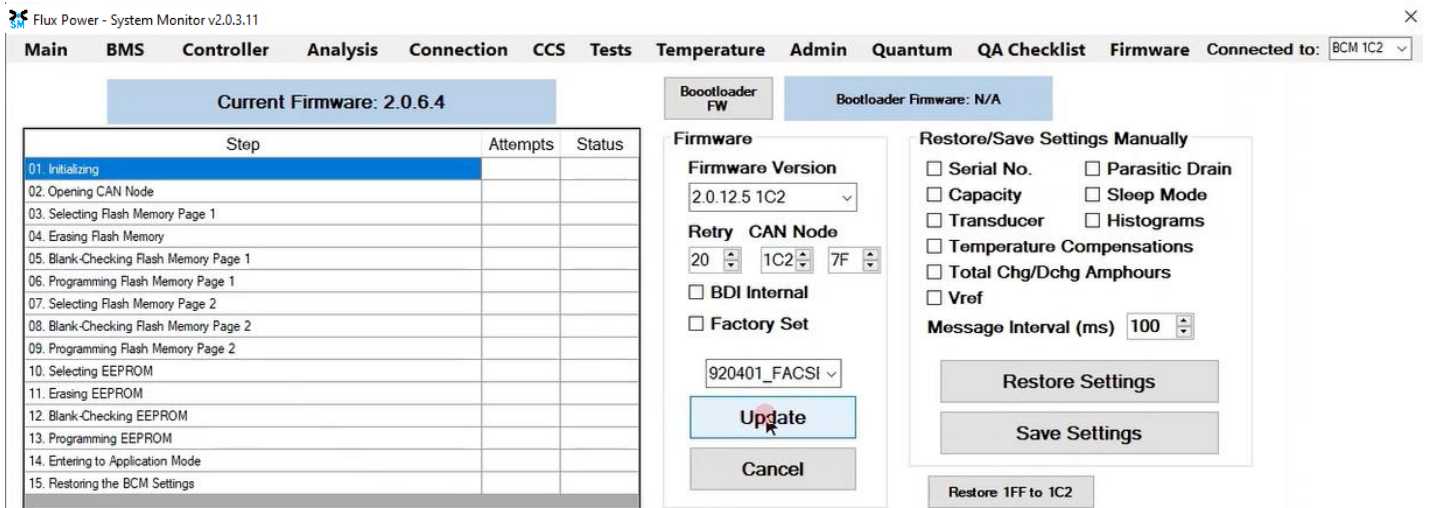
3) Select the Firmware Tab highlighted below.



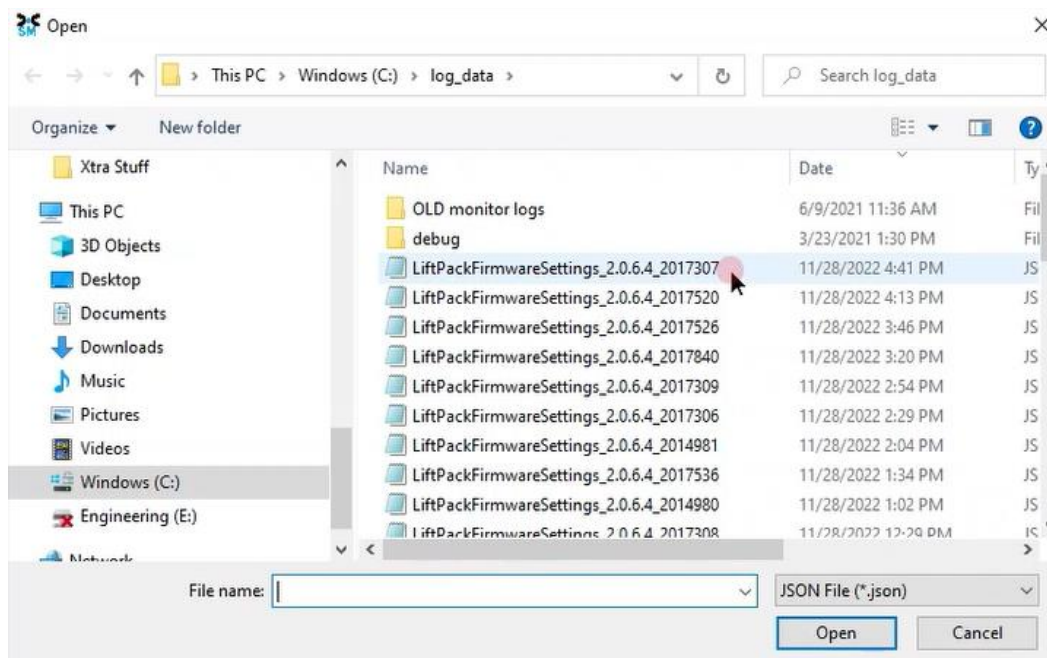
4) Select the Firmware Version dropdown highlighted below and select the required Firmware. (The correct Firmware can be found in Appendix B.)



- 5) If the battery is an M24 New Gen, make sure the BDI Internal checkbox is **CHECKED** and the Factory Setting checkbox is **UNCHECKED**. If the battery is an M24 Legacy, make sure the BDI Internal and Factory Setting checkboxes are **UNCHECKED**. Select Update once they are set properly.

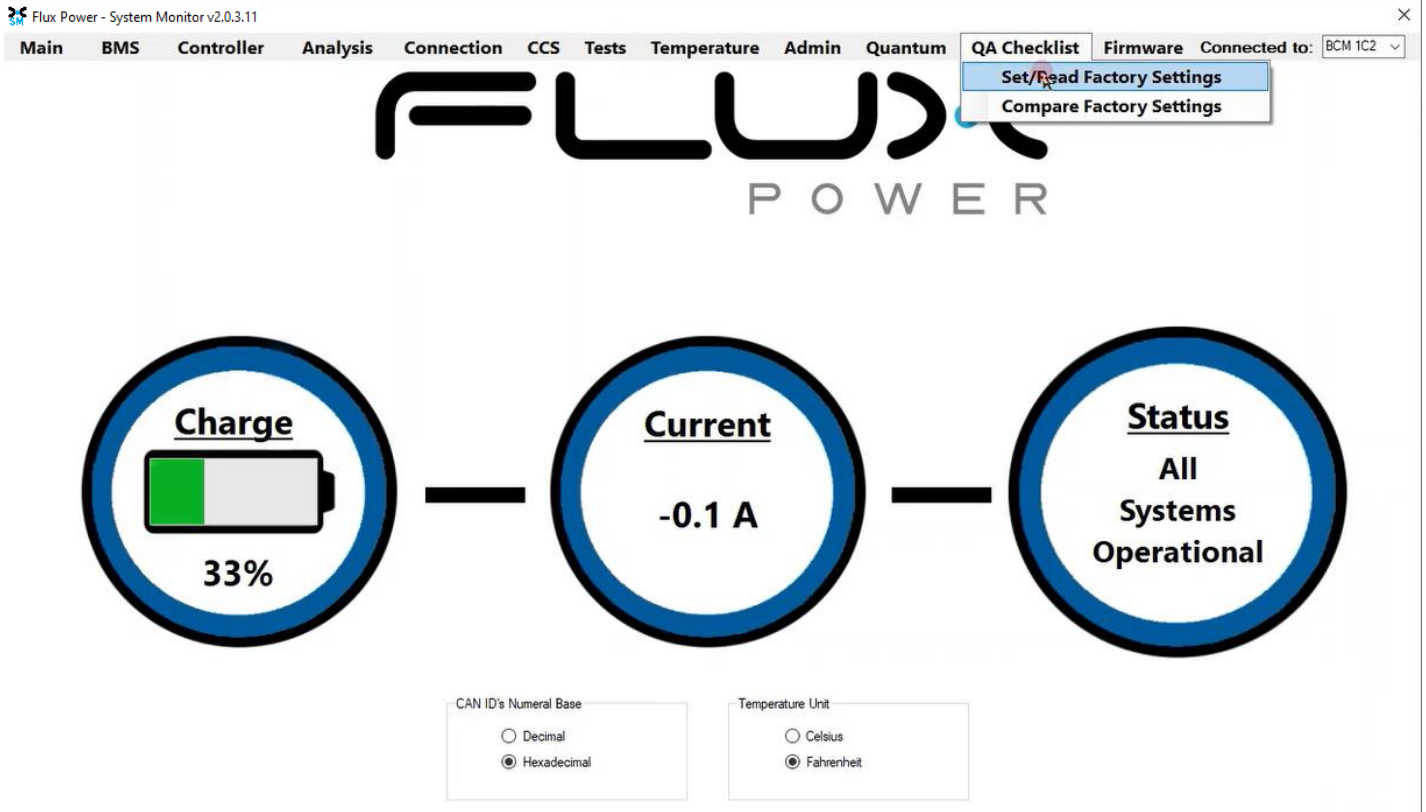


- 6) Once the update finishes, select Ok in the popup window and then double click the Firmware Settings with the matching Serial Number of the battery as there may be multiple in the window, and then select Ok again in the next popup window.

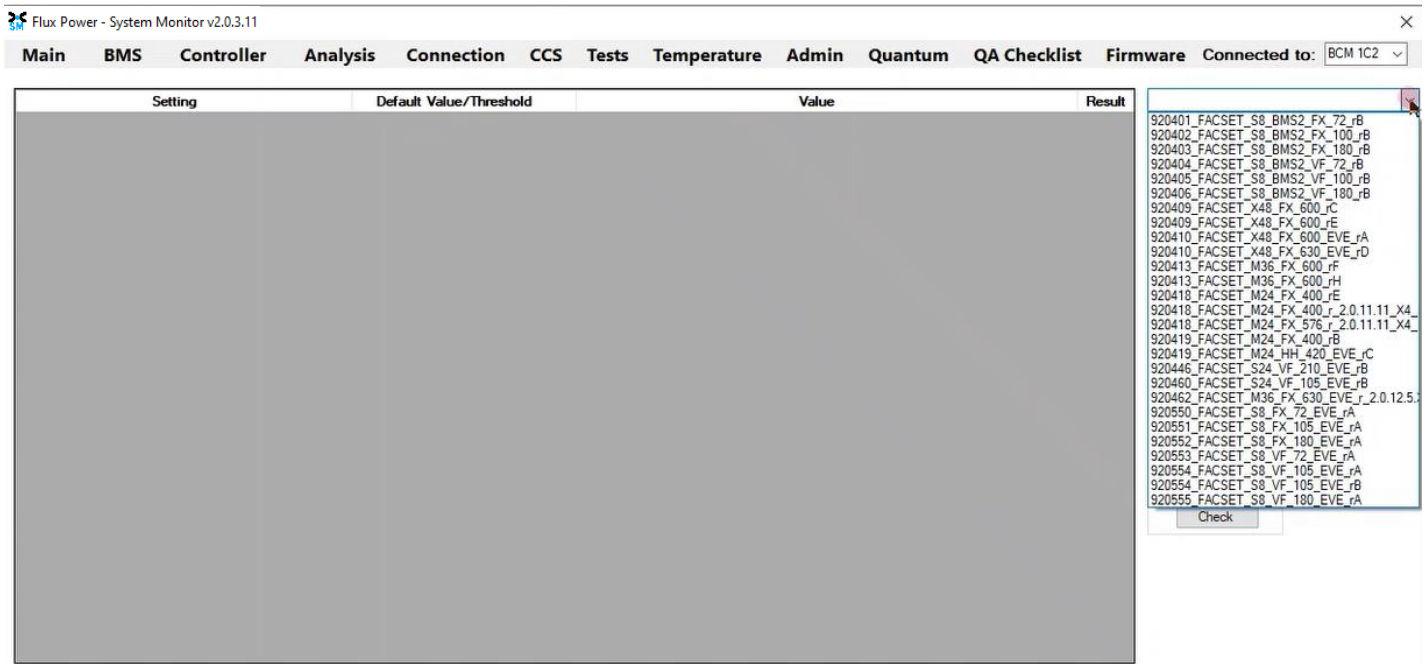


- 7) Once it completes restoring the settings, press the Ok button in the popup window to restart the program.

- 8) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option.



- 9) Select the dropdown highlighted below and choose the Factory Setting file that is needed. (The correct Factory Setting can be found in Appendix B.)



10) After selecting the Factory Setting file that is needed, select the Factory Settings button highlighted below and wait until the green bar under the Factory Settings button completes.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Setting	Default Value/Threshold	Value	Result
Package Version	920410_FACSET_X48_FX_630_E		
CAN ID	N/A		
Firmware	2.0.12.5		
Board Temperature (F)	140		
Pack Capacity (Ah)	567		
Pack Type	X48		
Charger Type	Manual		
Parasitic Drain (mA)	122		
Top Off Cell Voltage	3.43		
Max Cell Voltage	3.60		
Balance Voltage	3.55		
100% SOC Cell Voltage	3.42		
Warning Cell Voltage	2.95		
0% SOC Cell Voltage	2.80		
Latch 0 SOC on Low Voltage	0		
Sensor Polarity	Reversed		
Transducer Value	500		
Ignore Current Level (A)	2		
Sleep Mode	Enabled		
Sleep Mode Voltage	3.20		
Sleep Mode Timeout Below (min)	24000		
Sleep Mode Timeout Above (min)	43200		
Thermal Calibration Offset Tolerance	8		
Buzzer Duration (min)	60		
Buzzer Sound Every (sec)	15		

920410_FACSET_X48_FX_630_EVE_rD

Change Bcm Id
 1C2 102
 112 122

Factory Settings

Validate

Print

Save As...

Validation Enabled

Test External CAN
0x730: N/A

After the battery finishes Step 10, please use Appendix C. to recalibrate the SOC to what it was before the update. Then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.

5 M-Series (M36)



Flux Power M36

Software Required:

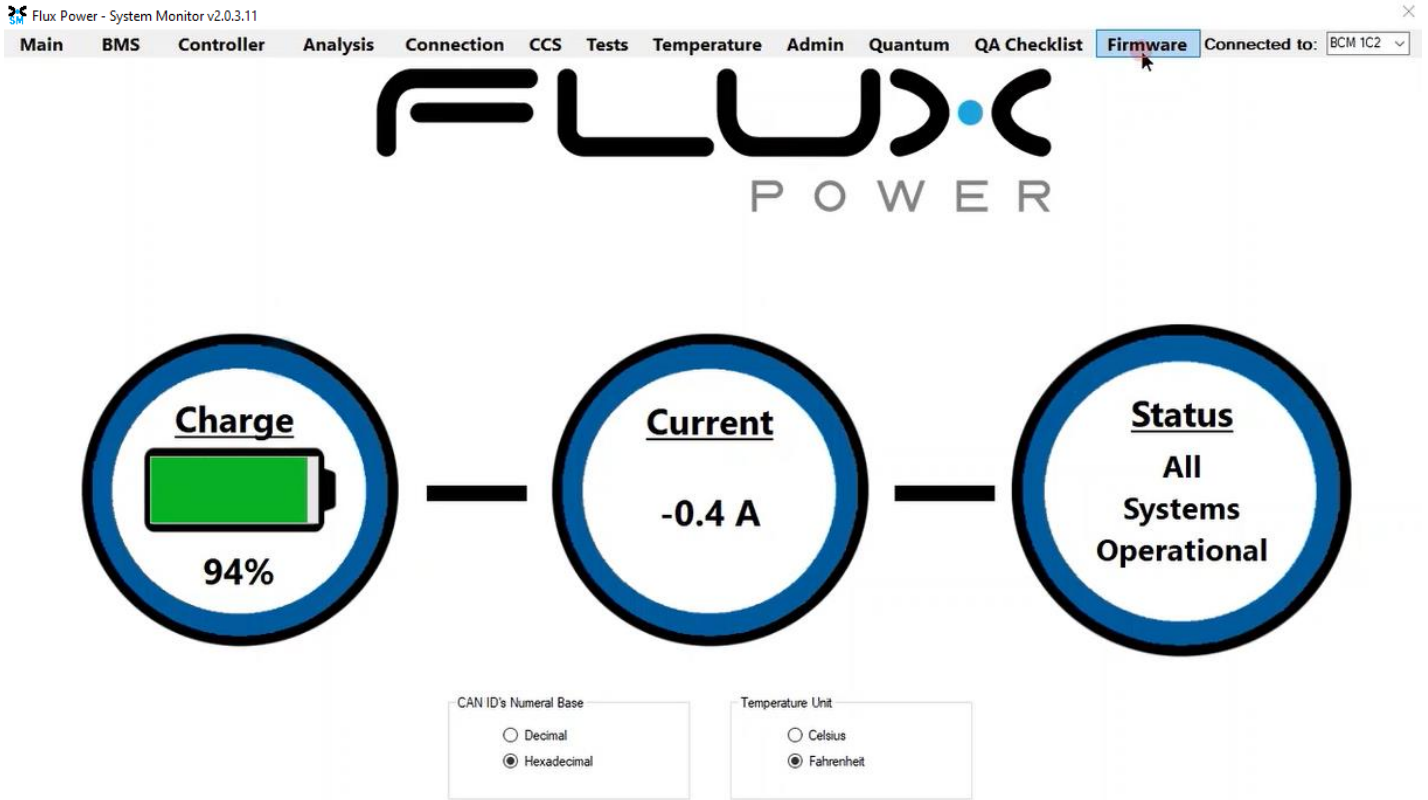
- Flux Connect System Monitor v2.0.3.11



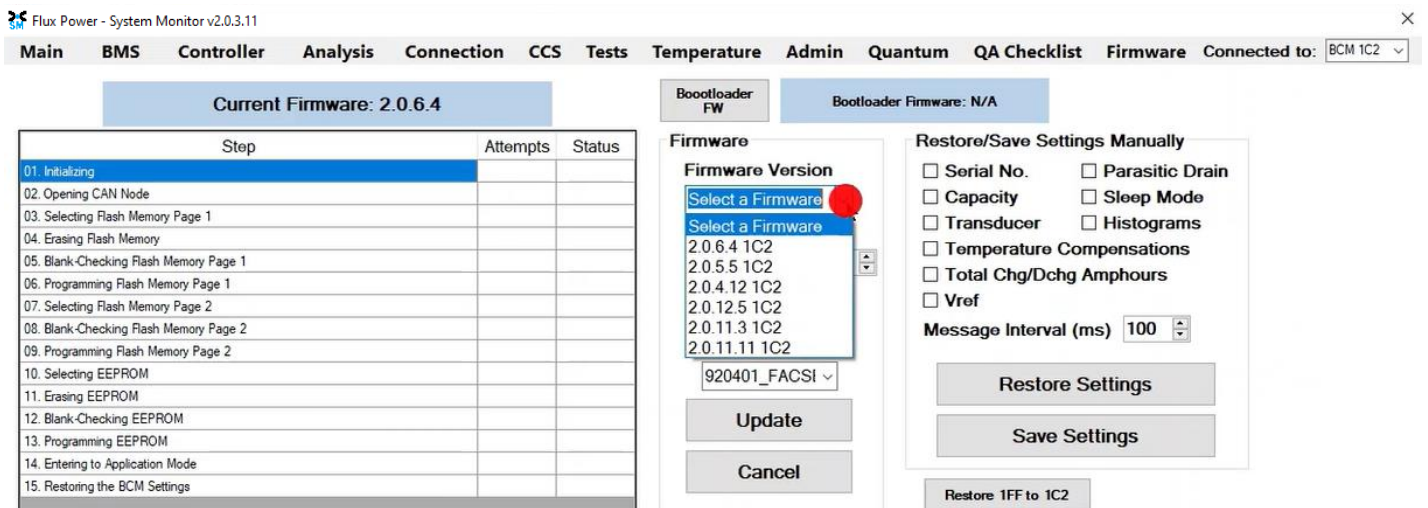
Below are the steps for updating the software on the Flux Power Battery

- 1) Connect the computer to the battery via the Diagnostic cable.
- 2) Open the Flux Connect System Monitor 2 program.
 - a. Please note the Charge (SOC%) of the battery.

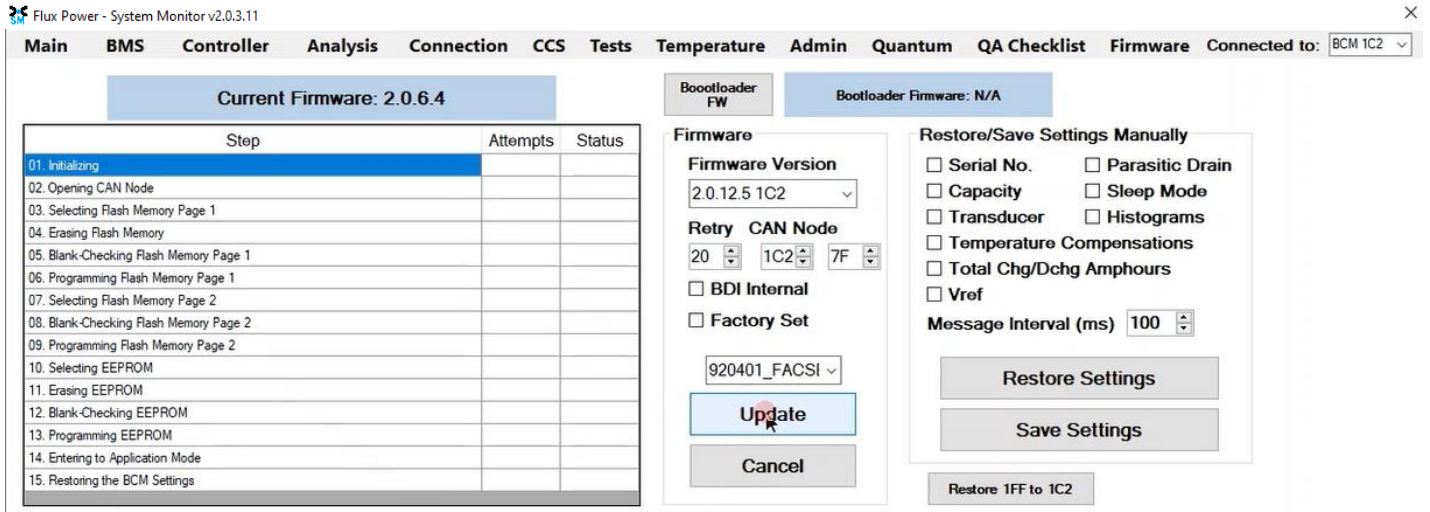
3) Select the Firmware Tab highlighted below.



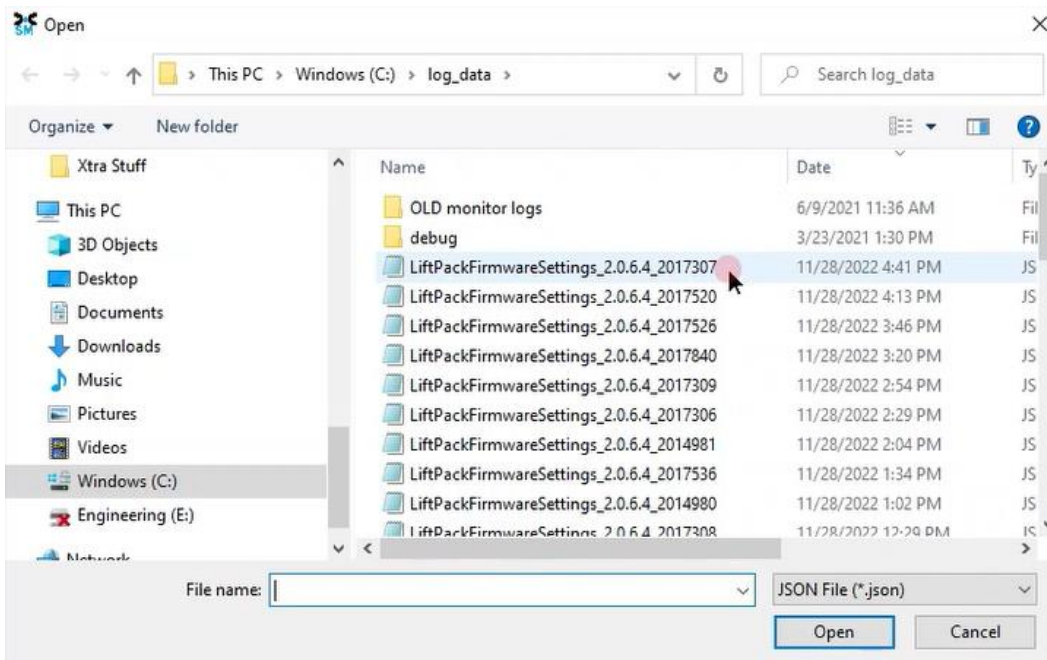
4) Select the Firmware Version dropdown highlighted below and select the required Firmware. (The correct Firmware can be found in Appendix B.)



- 5) Make sure the BDI Internal and Factory Setting checkboxes are **UNCHECKED**, and then select Update.

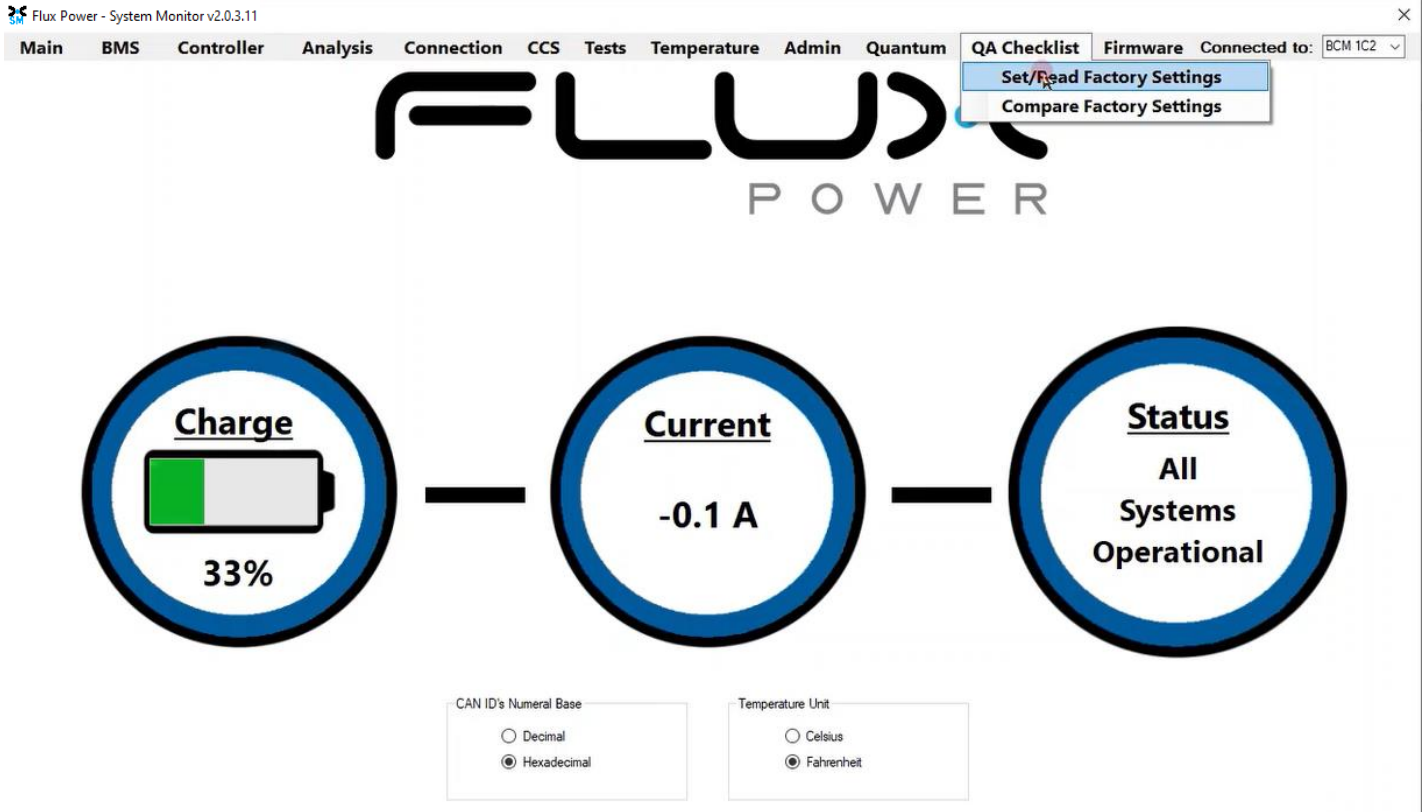


- 6) Once the update finishes, select Ok in the popup window and then double click the Firmware Settings with the matching Serial Number of the battery as there may be multiple in the window, and then select Ok again in the next popup window.

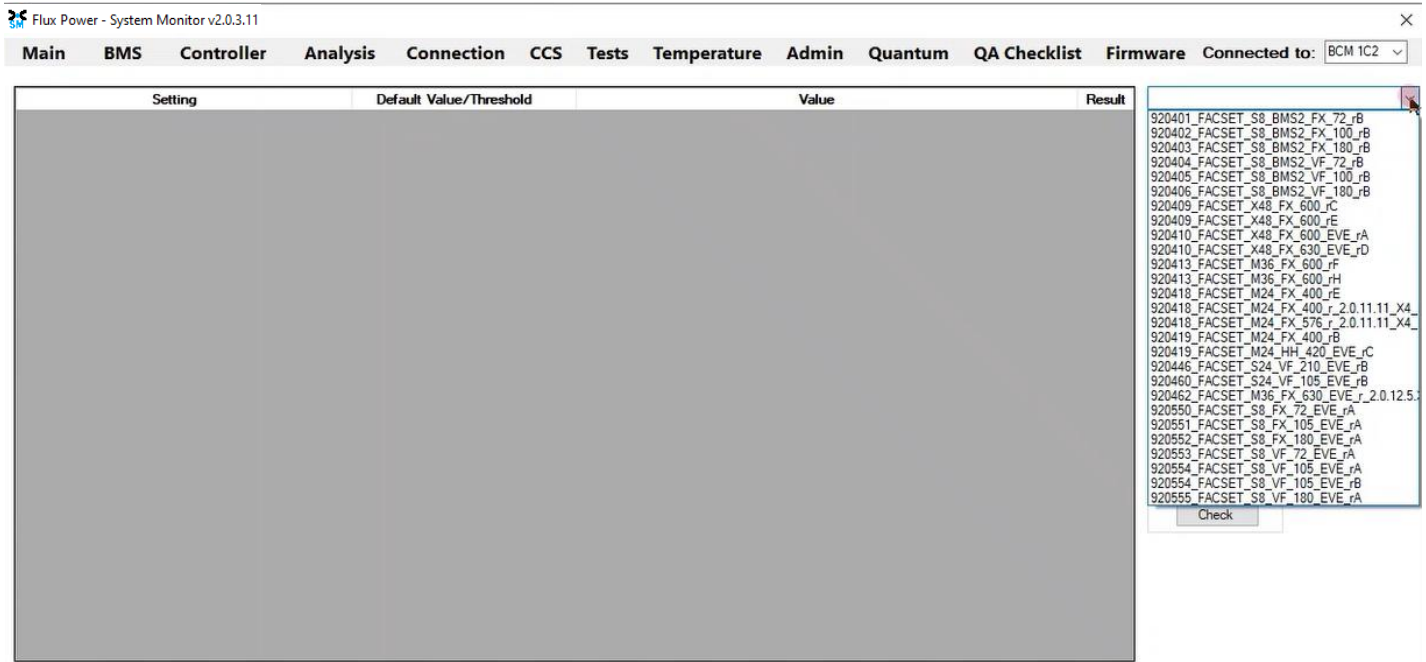


- 7) Once it completes restoring the settings, press the Ok button in the popup window to restart the program.

- 8) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option.



- 9) Select the dropdown highlighted below and choose the Factory Setting file that is needed. (The correct Factory Setting can be found in Appendix B.)



10) After selecting the Factory Setting file that is needed, select the Factory Settings button highlighted below and wait until the green bar under the Factory Settings button completes.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Setting	Default Value/Threshold	Value	Result
Package Version	920410_FACSET_X48_FX_630_E		
CAN ID	N/A		
Firmware	2.0.12.5		
Board Temperature (F)	140		
Pack Capacity (Ah)	567		
Pack Type	X48		
Charger Type	Manual		
Parasitic Drain (mA)	122		
Top Off Cell Voltage	3.43		
Max Cell Voltage	3.60		
Balance Voltage	3.55		
100% SOC Cell Voltage	3.42		
Warning Cell Voltage	2.95		
0% SOC Cell Voltage	2.80		
Latch 0 SOC on Low Voltage	0		
Sensor Polarity	Reversed		
Transducer Value	500		
Ignore Current Level (A)	2		
Sleep Mode	Enabled		
Sleep Mode Voltage	3.20		
Sleep Mode Timeout Below (min)	24000		
Sleep Mode Timeout Above (min)	43200		
Thermal Calibration Offset Tolerance	8		
Buzzer Duration (min)	60		
Buzzer Sound Every (sec)	15		

920410_FACSET_X48_FX_630_EVE_rD

Change Bcm Id
 1C2 102
 112 122

Factory Settings

Validate

Print

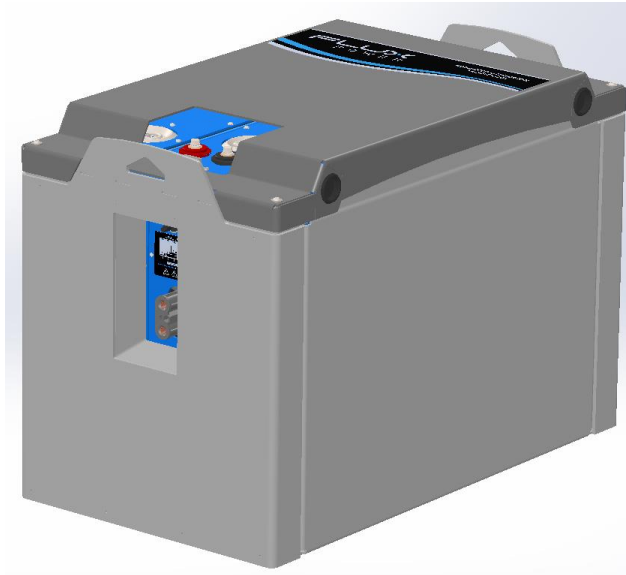
Save As...

Validation Enabled

Test External CAN
0x730: N/A

After the battery finishes Step 10, please use Appendix C. to recalibrate the SOC to what it was before the update. Then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.

6 L-Series (L48)



Flux Power L48 First Gen (Mechanical Switch)



Flux Power L48 New Gen (BDI Power Switch)

Software Required:

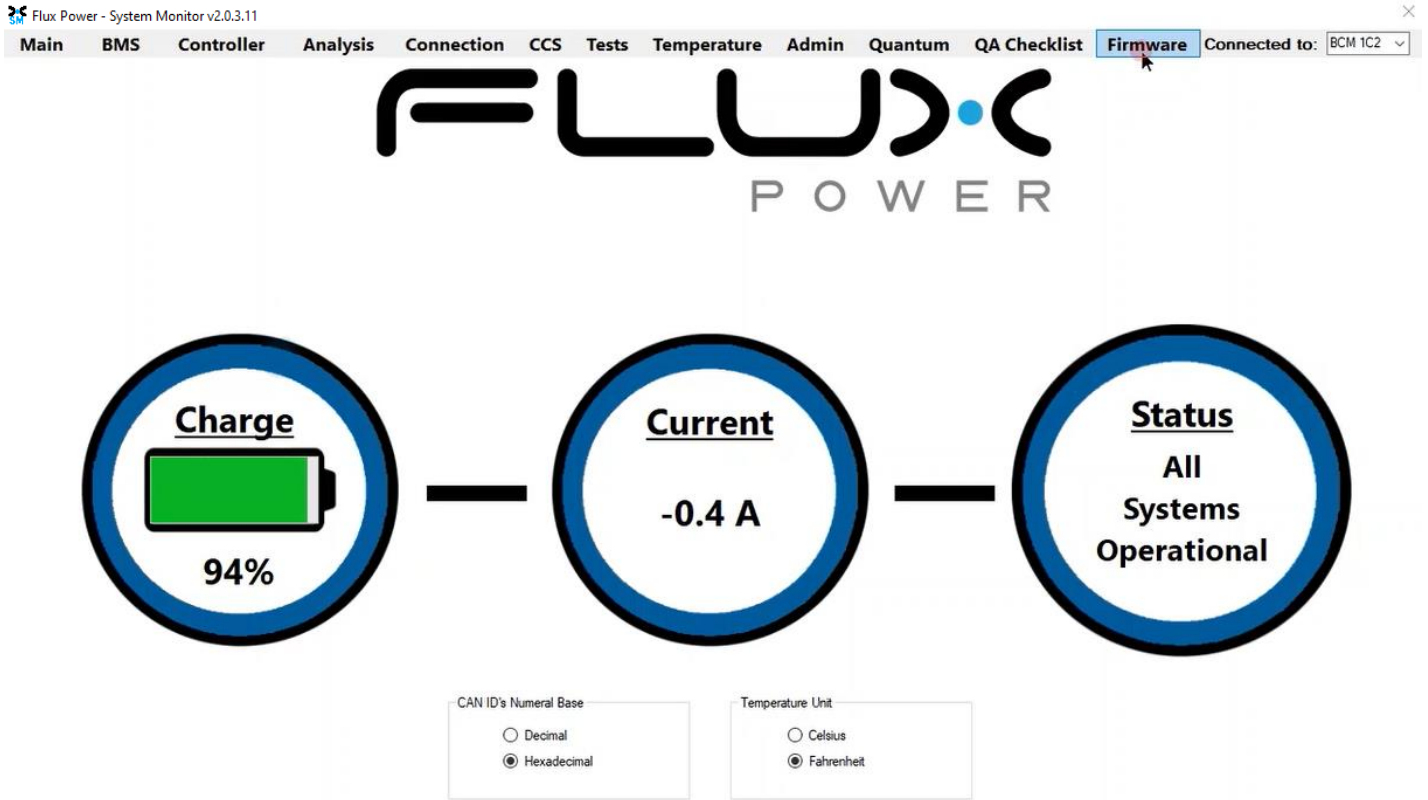
- Flux Connect System Monitor v2.0.3.11



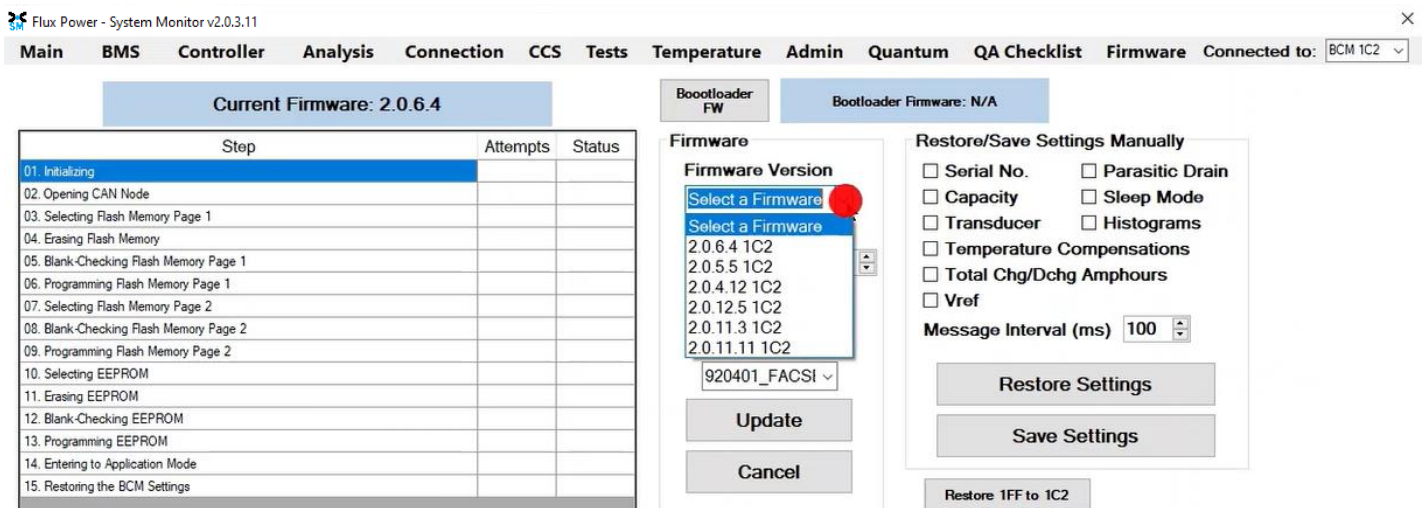
Below are the steps for updating the software on the Flux Power Battery

- 1) Connect the computer to the battery via the Diagnostic cable.
- 2) Open the Flux Connect System Monitor 2 program.
 - a. Please note the Charge (SOC%) of the battery.

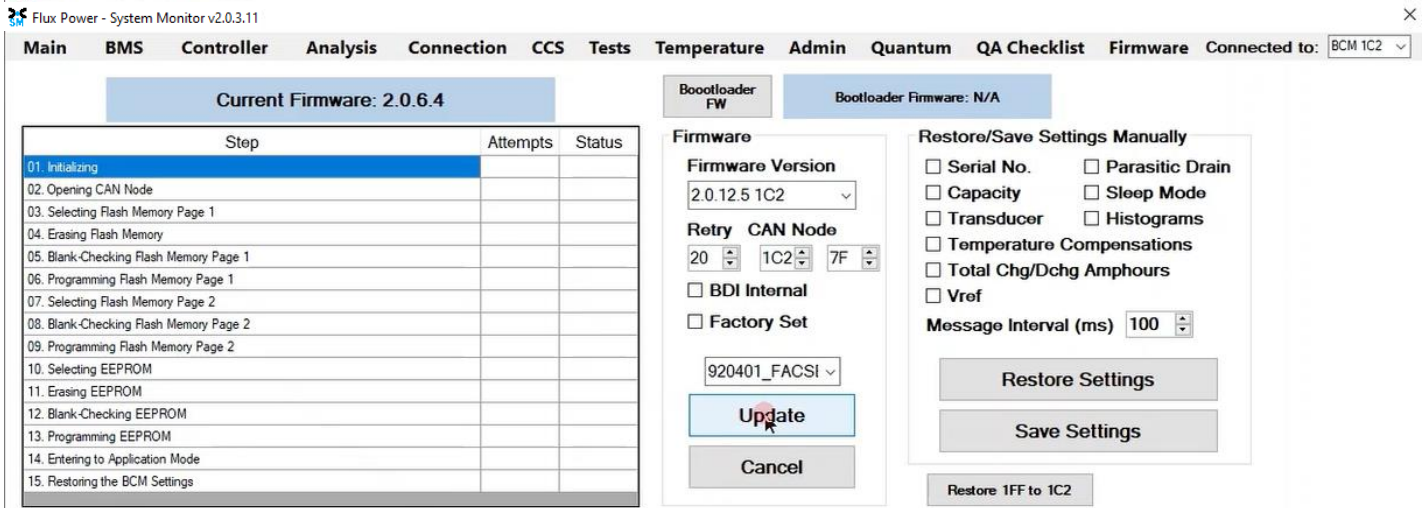
3) Select the Firmware Tab highlighted below.



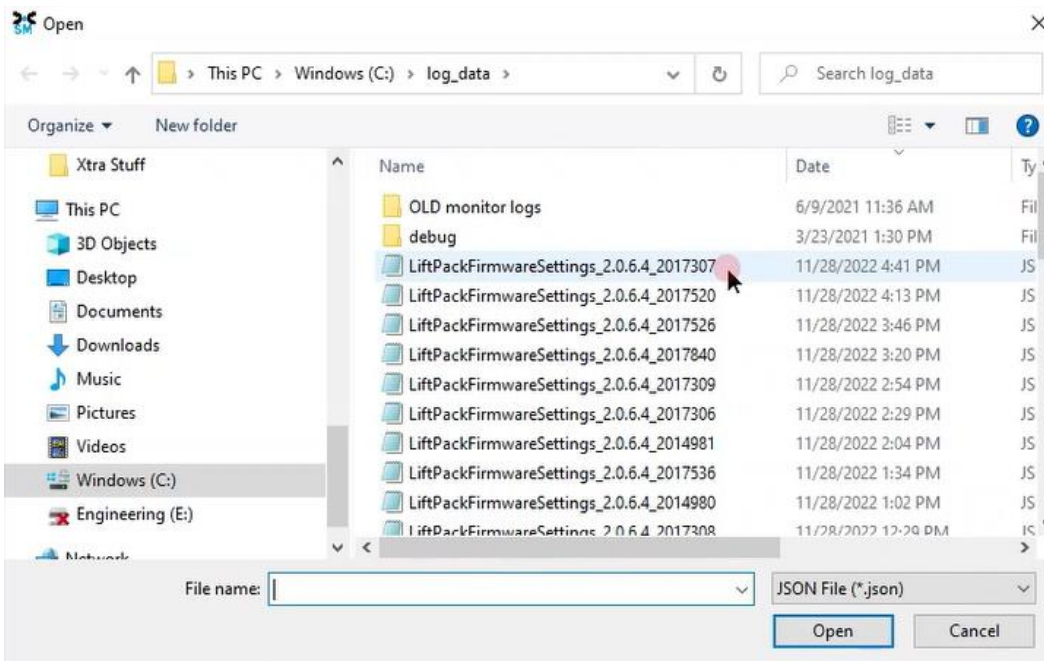
4) Select the Firmware Version dropdown highlighted below and select the required Firmware. (The correct Firmware can be found in Appendix B.)



- 5) If the battery is an L48 New Gen, make sure the BDI Internal checkbox is **CHECKED** and the Factory Setting checkbox is **UNCHECKED**. If the battery is an L48 First Gen, make sure the BDI Internal and Factory Setting checkboxes are **UNCHECKED**. Select Update once they are set properly.

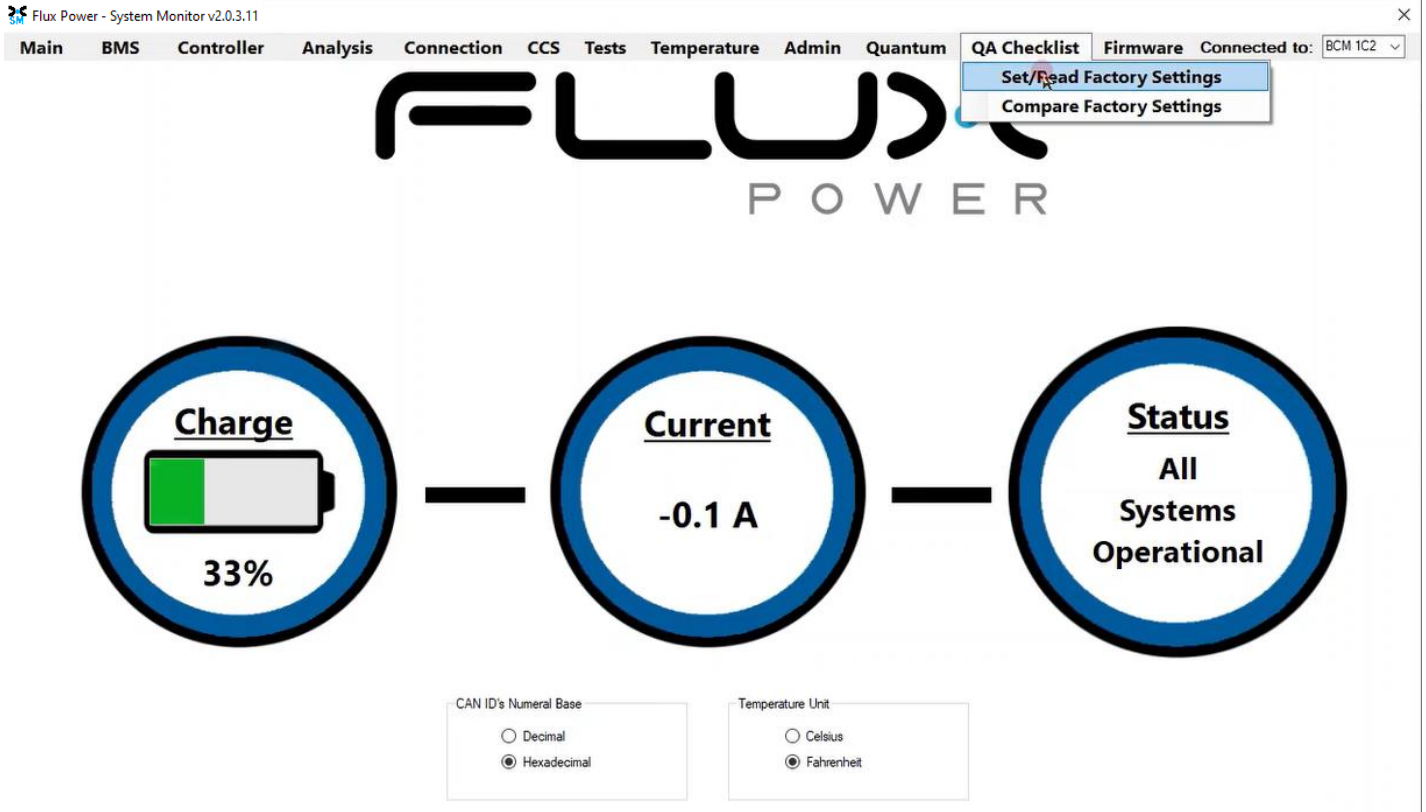


- 6) Once the update finishes, select Ok in the popup window and then double click the Firmware Settings with the matching Serial Number of the battery as there may be multiple in the window, and then select Ok again in the next popup window.

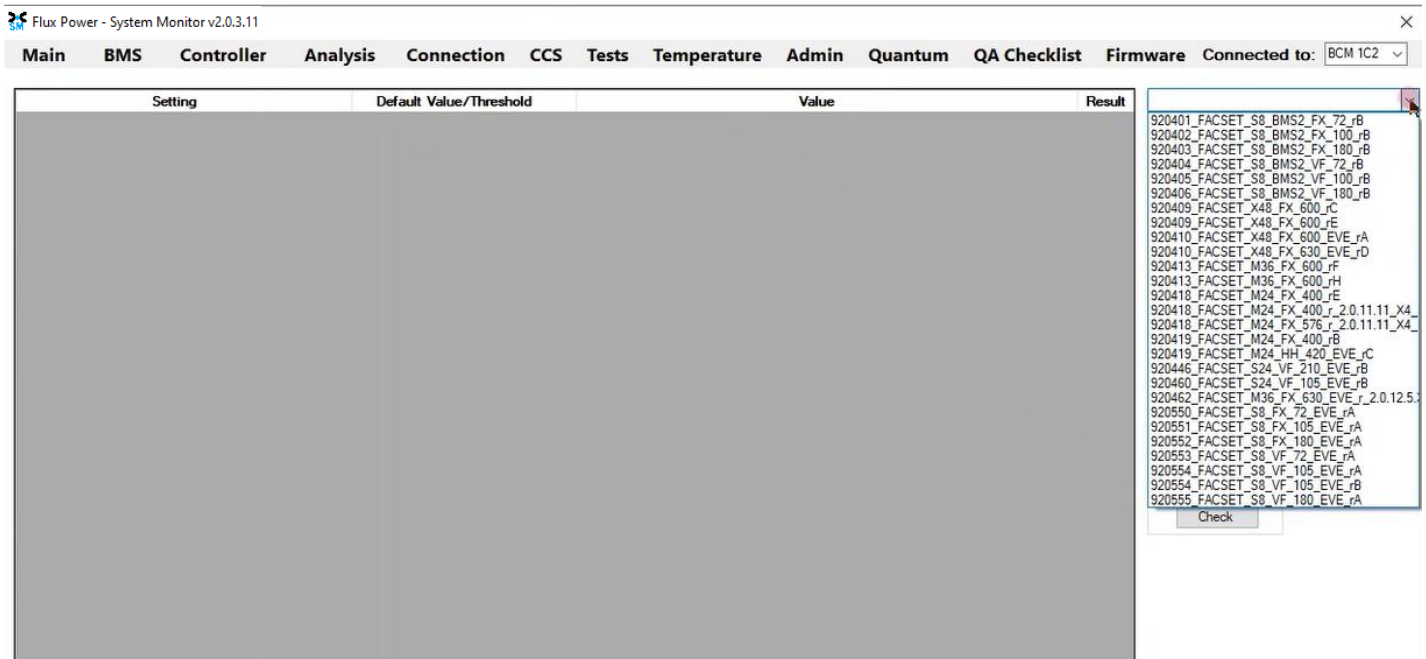


- 7) Once it completes restoring the settings, press the Ok button in the popup window to restart the program.

- 8) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option.



- 9) Select the dropdown highlighted below and choose the Factory Setting file that is needed. (The correct Factory Setting can be found in Appendix B.)



- After selecting the Factory Setting file that is needed, select the Factory Settings button highlighted below and wait until the green bar under the Factory Settings button completes.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Setting	Default Value/Threshold	Value	Result
Package Version	920410_FACSET_X48_FX_630_E		
CAN ID	N/A		
Firmware	2.0.12.5		
Board Temperature (F)	140		
Pack Capacity (Ah)	567		
Pack Type	X48		
Charger Type	Manual		
Parasitic Drain (mA)	122		
Top Off Cell Voltage	3.43		
Max Cell Voltage	3.60		
Balance Voltage	3.55		
100% SOC Cell Voltage	3.42		
Warning Cell Voltage	2.95		
0% SOC Cell Voltage	2.80		
Latch 0 SOC on Low Voltage	0		
Sensor Polarity	Reversed		
Transducer Value	500		
Ignore Current Level (A)	2		
Sleep Mode	Enabled		
Sleep Mode Voltage	3.20		
Sleep Mode Timeout Below (min)	24000		
Sleep Mode Timeout Above (min)	43200		
Thermal Calibration Offset Tolerance	8		
Buzzer Duration (min)	60		
Buzzer Sound Every (sec)	15		

920410_FACSET_X48_FX_630_EVE_rD

Change Bcm Id
 1C2 102
 112 122

Factory Settings

Validate

Print

Save As...

Validation Enabled

Test External CAN
 0x730: N/A

Check

- Once step 10 is complete, select the Firmware tab again and hit the Connected to: dropdown shown below. Select the BCM 102 and repeat Steps 4-7.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Current Firmware: 2.0.12.5

Bootloader FW Bootloader Firmware: N/A

Step	Attempts	Status
01. Initializing		
02. Opening CAN Node		
03. Selecting Flash Memory Page 1		
04. Erasing Flash Memory		
05. Blank-Checking Flash Memory Page 1		
06. Programming Flash Memory Page 1		
07. Selecting Flash Memory Page 2		
08. Blank-Checking Flash Memory Page 2		
09. Programming Flash Memory Page 2		
10. Selecting EEPROM		
11. Erasing EEPROM		
12. Blank-Checking EEPROM		
13. Programming EEPROM		
14. Entering to Application Mode		
15. Restoring the BCM Settings		

Firmware

Firmware Version
 Select a Firmware

Retry CAN Node
 20 1C2 7F

BDI Internal
 Factory Set

920401_FACSI

Update

Cancel

Restore/Save Settings Manually

Serial No. Parasitic Drain
 Capacity Sleep Mode
 Transducer Histograms
 Temperature Compensations
 Total Chg/Dchg Amphours
 Vref

Message Interval (ms) 100

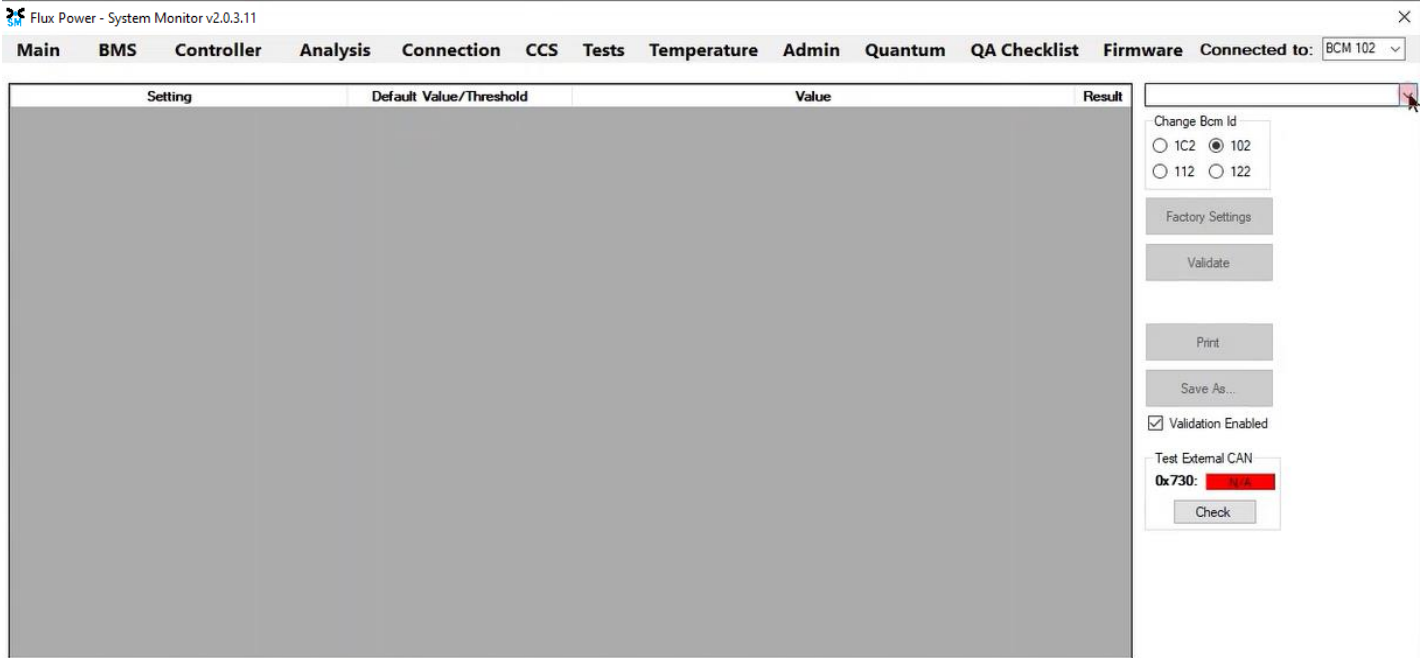
Restore Settings

Save Settings

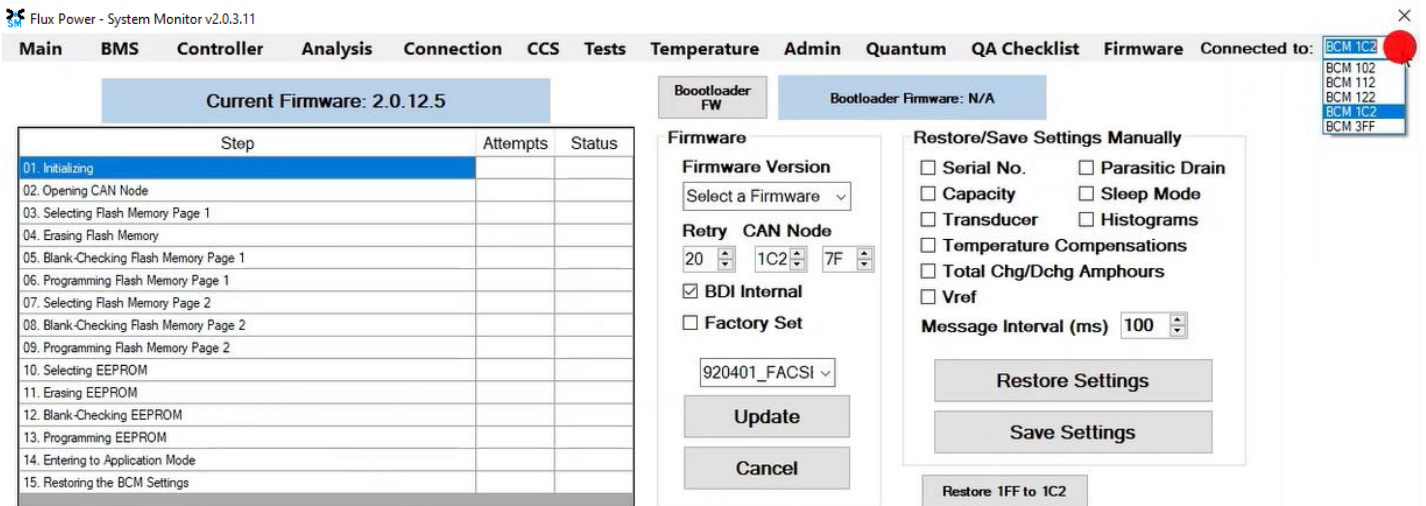
Restore 1FF to 1C2

BCM 1C2
 BCM 102
 BCM 112
 BCM 122
 BCM 1C2
 BCM 3FF

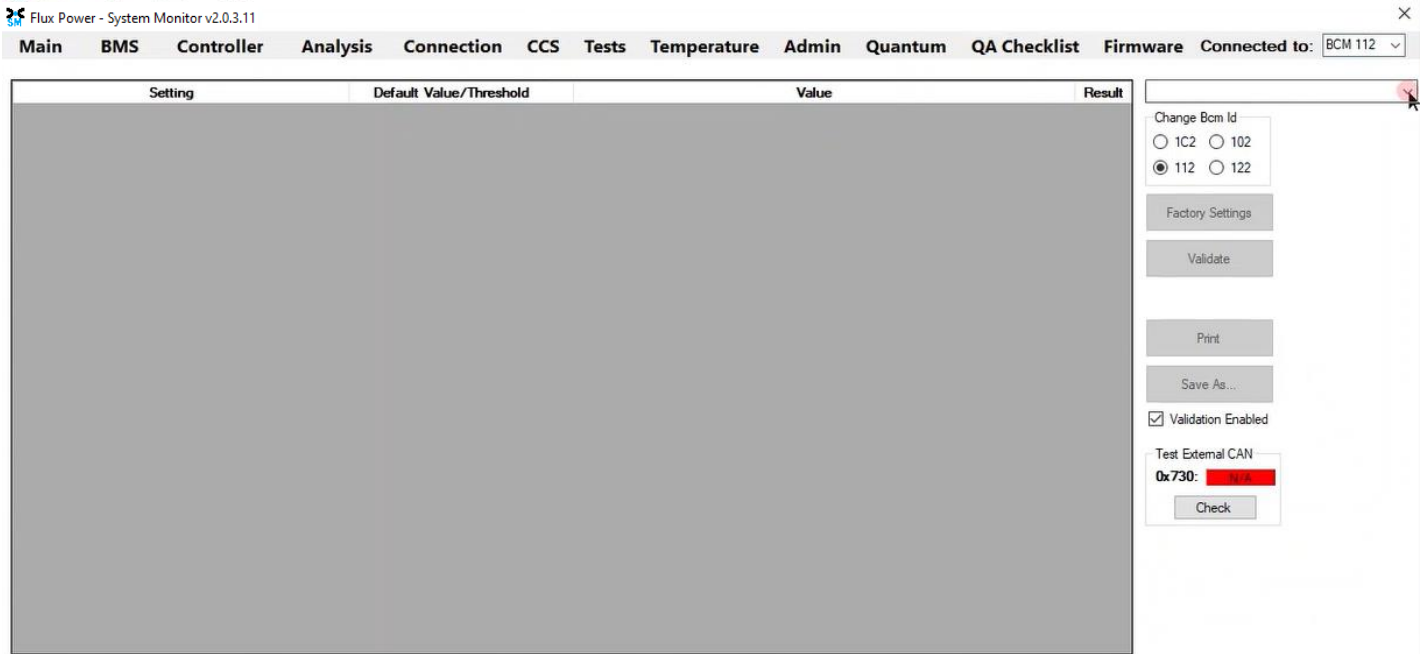
- After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option. Open the Connected to: dropdown and select the BCM 102, and make sure the Change Bcm Id box also shows 102 as seen below, and then repeat Steps 9-10.



- Once step 12 is complete, select the Firmware tab again and hit the Connected to: dropdown shown below. Select the BCM 112 and repeat Steps 4-7.

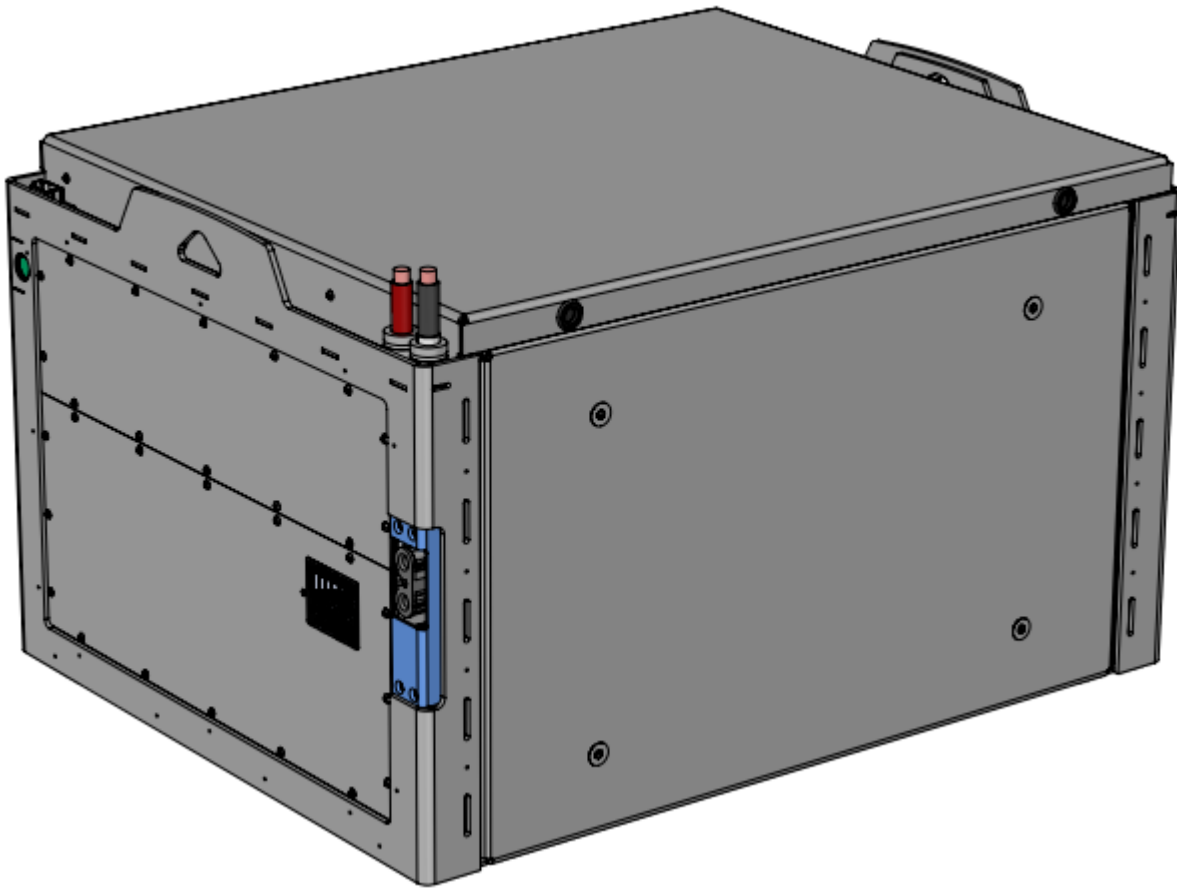


14) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option. Open the Connected to: dropdown and select the BCM 112, and make sure the Change Bcm Id box also shows 112 as seen below, and then repeat Steps 9-10.



After the battery finishes Step 14, please use Appendix C. to recalibrate the SOC to what it was before the update. Then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.

7 X-Series (X36 & X80)



Flux Power X36/X80

Software Required:

- Flux Connect GSE Pack 12.12 v1.1.0.13



Below are the steps for updating the software on the Flux Power Battery

- 1) Connect the computer to the battery via the Diagnostic cable.
- 2) Open the Flux Connect GSE Pack 12.12 program.
 - a. Please note the Charge (SOC%) of the battery.

3) Select the Firmware Tab highlighted below.

Flux Power - GSE Pack 12.12 v1.1.0.13

Main Blade Charger Analysis Connection CCS Temperature Admin Quantum QA Checklist **Firmware** Board Tester Connected to: 1C2

FLUX
POWER

Current: 0.0 A
Voltage: 0.00 V
Temperature: 0 °F
0%
Total Cycles: 0
Total Energy Used: 0
Average Capacity Used: N/A

Read Cycle Data Reset Cycle Data Save Histograms

Cycle #	Start SOC	End SOC	Depth of Discharge	kWh / Ah Used	kWh / Ah Recharged
---------	-----------	---------	--------------------	---------------	--------------------

4) Select the Firmware dropdown highlighted below, then choose the required Firmware, and select Update. (The correct Firmware can be found in Appendix B.)

Flux Power - GSE Pack 12.12 v1.1.0.13

Main Blade Charger Analysis Connection CCS Temperature Admin Quantum QA Checklist **Firmware** Board Tester Connected to: 1C2

Current Firmware: N/A

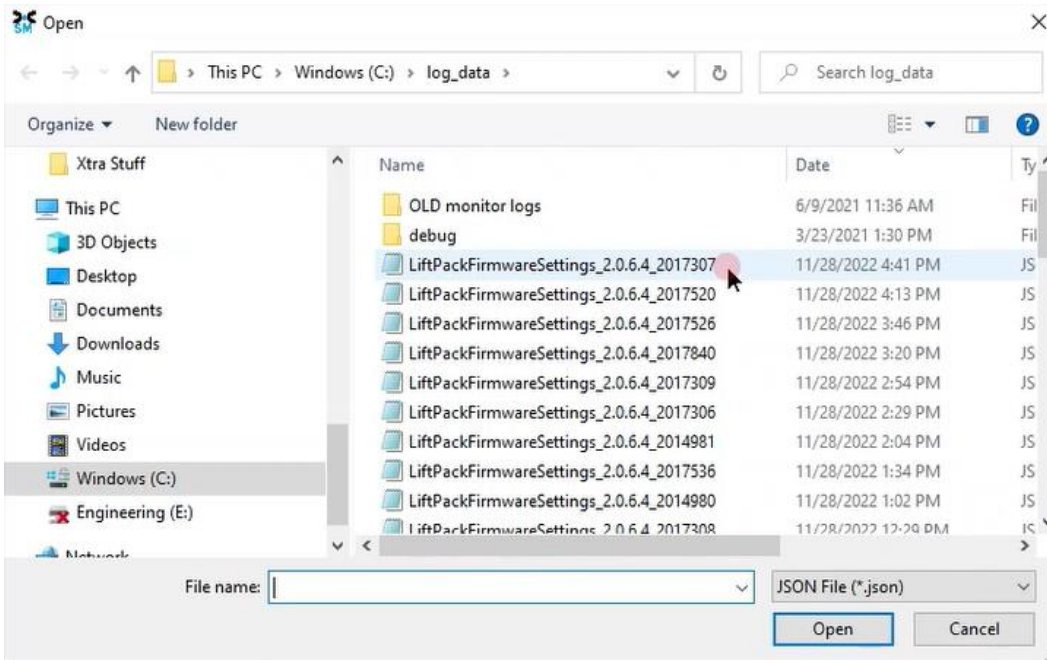
Step	Attempts	Status
01. Initializing		
02. Opening CAN Node		
03. Selecting Flash Memory Page 1		
04. Erasing Flash Memory		
05. Blank-Checking Flash Memory Page 1		
06. Programming Flash Memory Page 1		
08. Selecting Flash Memory Page 2		
09. Blank-Checking Flash Memory Page 2		
10. Programming Flash Memory Page 2		
11. Selecting EEPROM		
12. Erasing EEPROM		
13. Blank-Checking EEPROM		
14. Programming EEPROM		
15. Entering to Application Mode		
16. Loading the BCM Settings		

Firmware: Select a Firmware

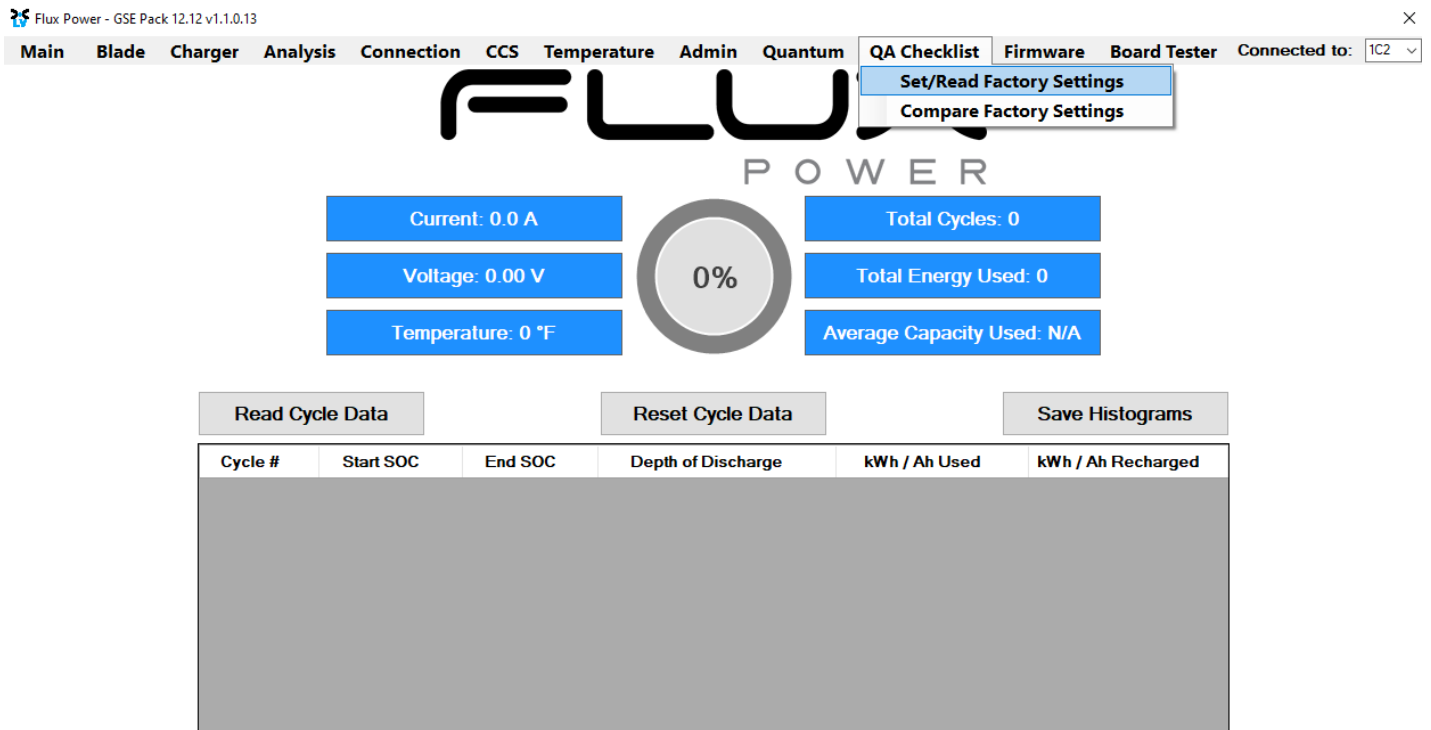
Retry: 20

Update
Cancel

- 5) Once the update finishes, select Ok in the popup window and then double click the Firmware Settings with the matching Serial Number of the battery as there may be multiple in the window, and then select Ok again in the next popup window.



- 6) Once it completes restoring the settings, press the Ok button in the popup window to restart the program.
- 7) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option.



- 8) Select the dropdown highlighted below and choose the Factory Setting file that is needed. (The correct Factory Setting can be found in Appendix B.)

Flux Power - GSE Pack 12.12 v1.1.0.13

Main Blade Charger Analysis Connection CCS Temperature Admin Quantum QA Checklist Firmware Board Tester Connected to: 1C2

Setting	Default Value/Threshold	Value	Result

Factory Settings
Validate
Print
Save As...
 Validation Enabled

- 9) After selecting the Factory Setting file that is needed, select the Factory Settings button highlighted below and wait until the green bar under the Factory Settings button completes.

Flux Power - GSE Pack 12.12 v1.1.0.13

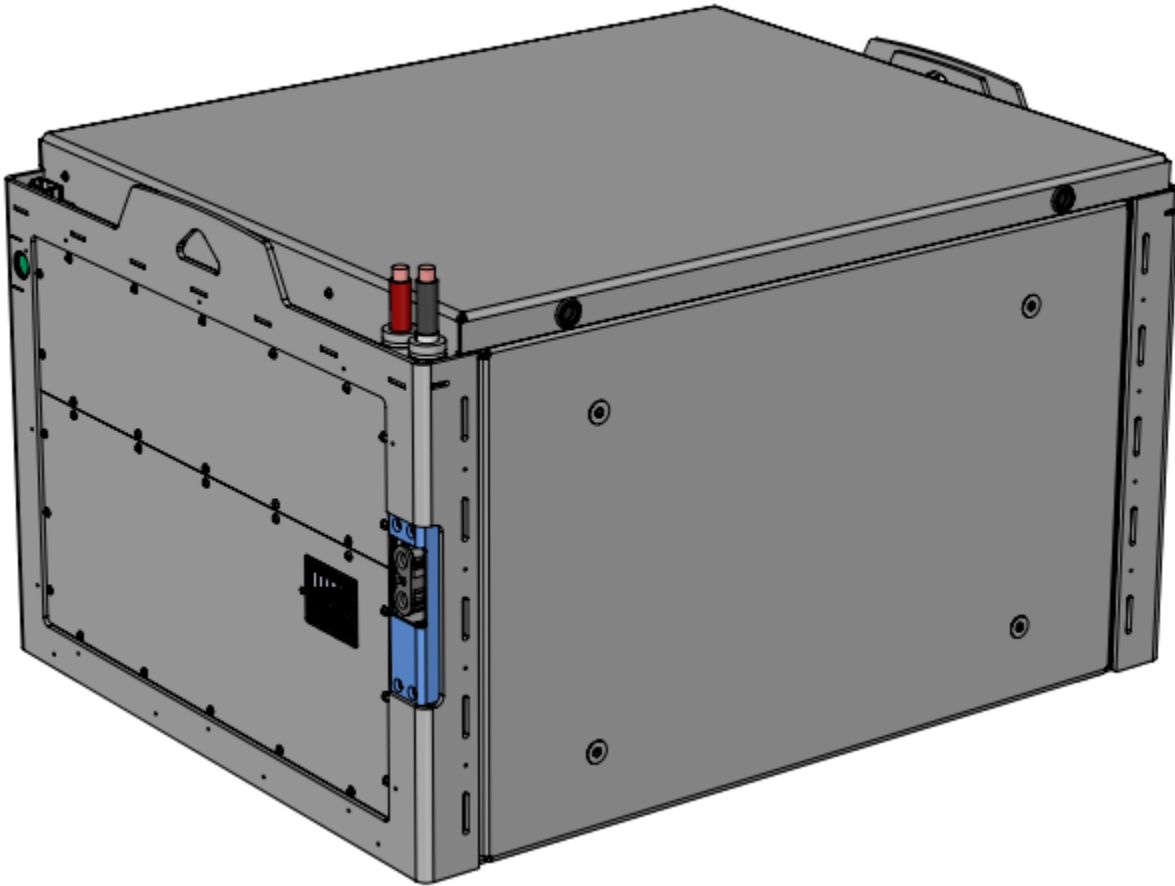
Main Blade Charger Analysis Connection CCS Temperature Admin Quantum QA Checklist Firmware Board Tester Connected to: 1C2

Setting	Default Value/Threshold	Value	Result

Factory Settings
Validate
Print
Save As...
 Validation Enabled

After the battery finishes Step 9, please use Appendix C. to recalibrate the SOC to what it was before the update. Then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.

8 X-Series (X48)



Flux Power X48

Software Required:

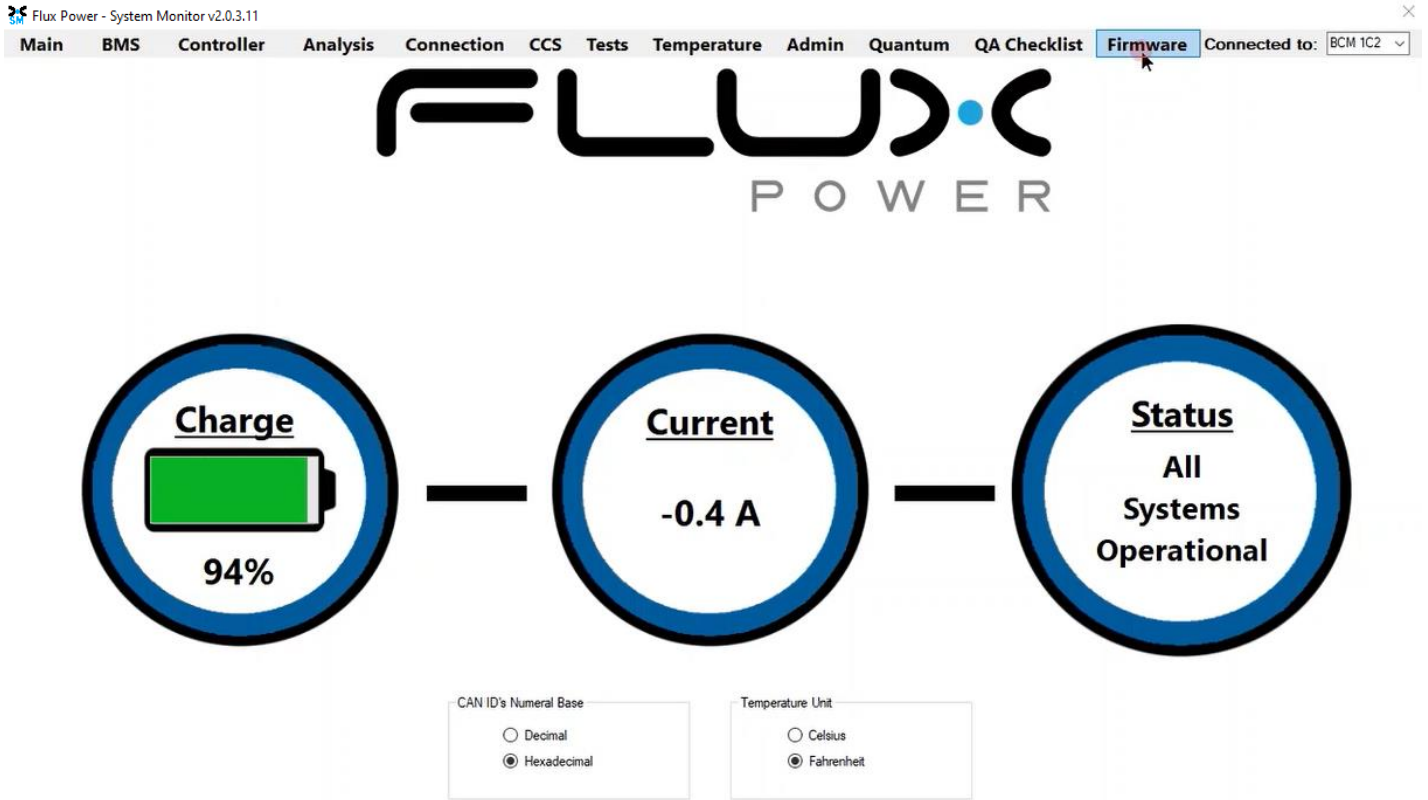
- Flux Connect System Monitor v2.0.3.11



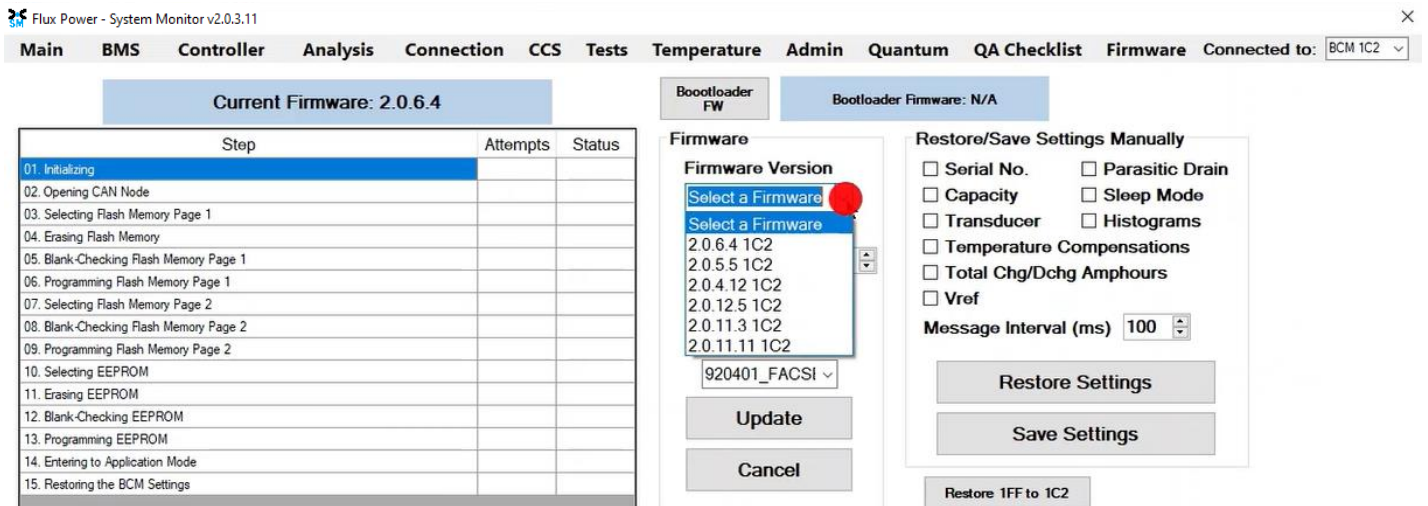
Below are the steps for updating the software on the Flux Power Battery

- 1) Connect the computer to the battery via the Diagnostic cable.
- 2) Open the Flux Connect System Monitor 2 program.
 - a. Please note the Charge (SOC%) of the battery.

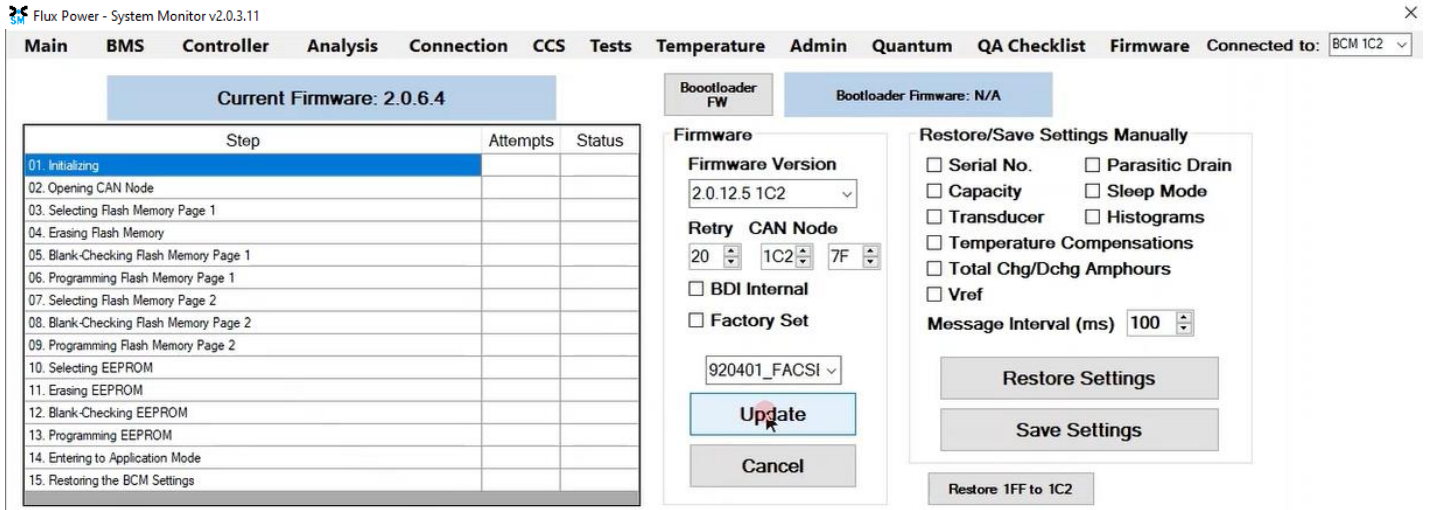
3) Select the Firmware Tab highlighted below.



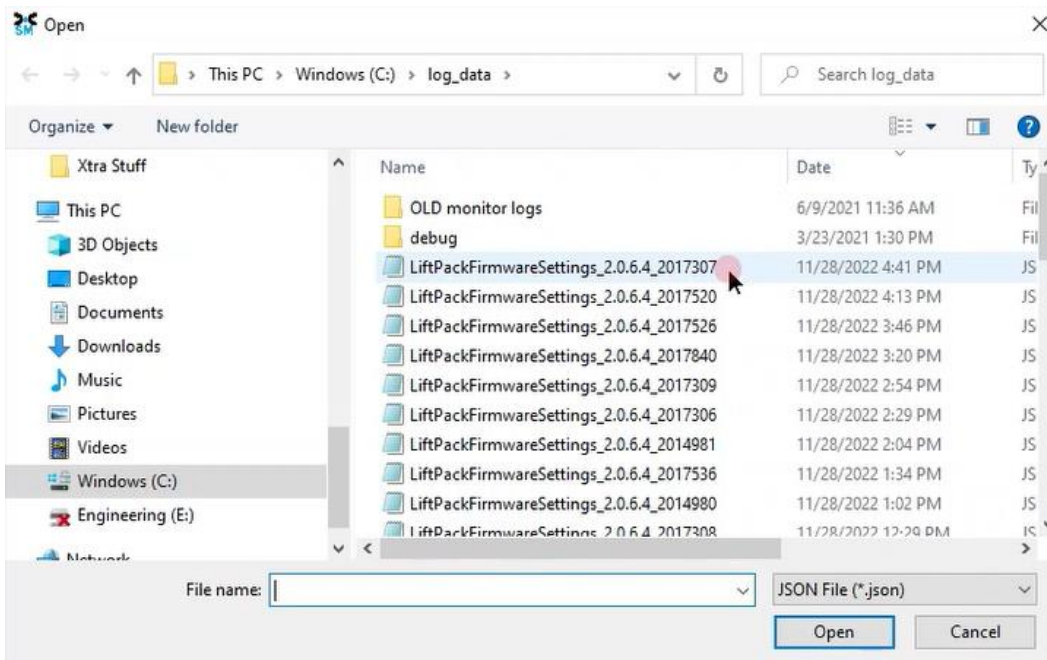
4) Select the Firmware Version dropdown highlighted below and select the required Firmware. (The correct Firmware can be found in Appendix B.)



- 5) Make sure the BDI Internal and Factory Setting checkboxes are **UNCHECKED**, and then select Update.

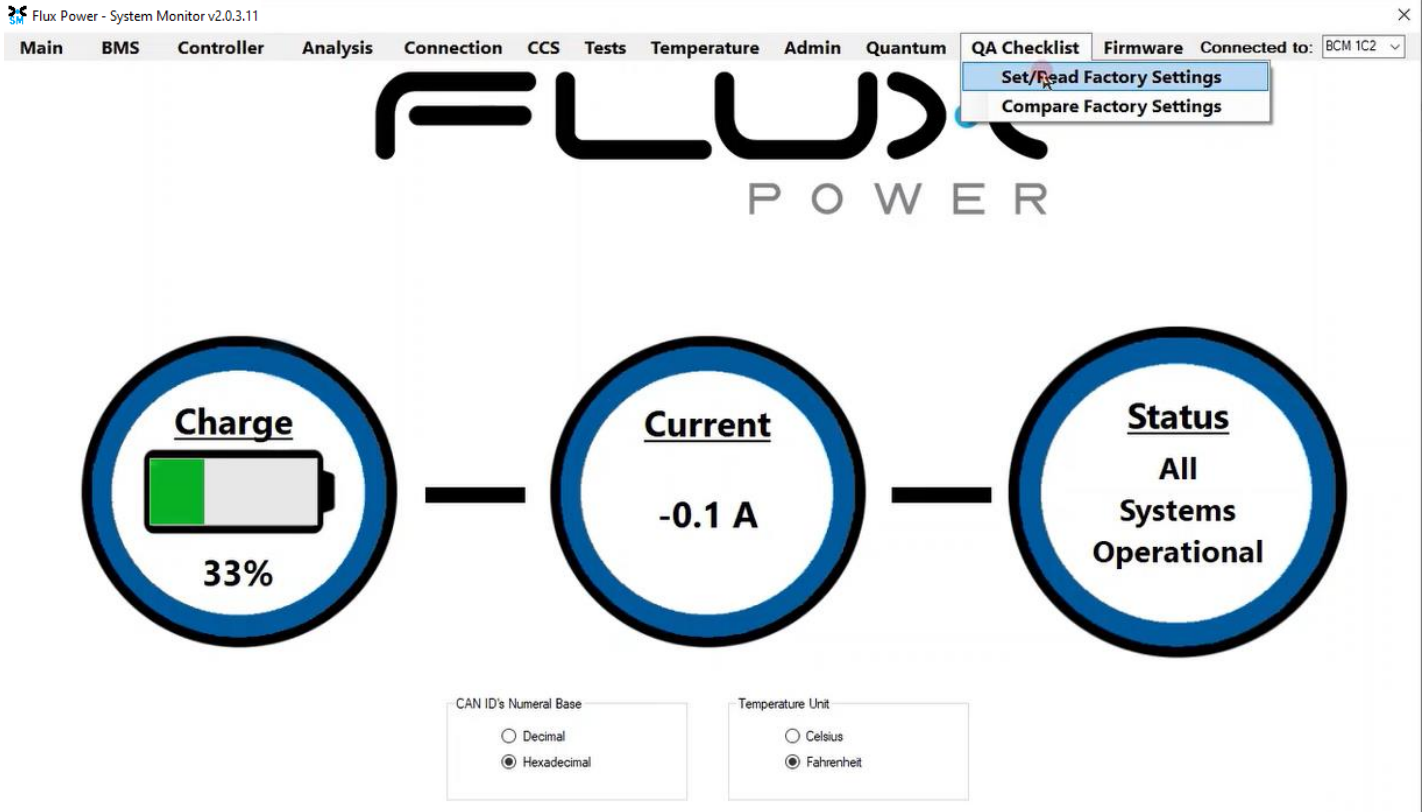


- 6) Once the update finishes, select Ok in the popup window and then double click the Firmware Settings with the matching Serial Number of the battery as there may be multiple in the window, and then select Ok again in the next popup window.

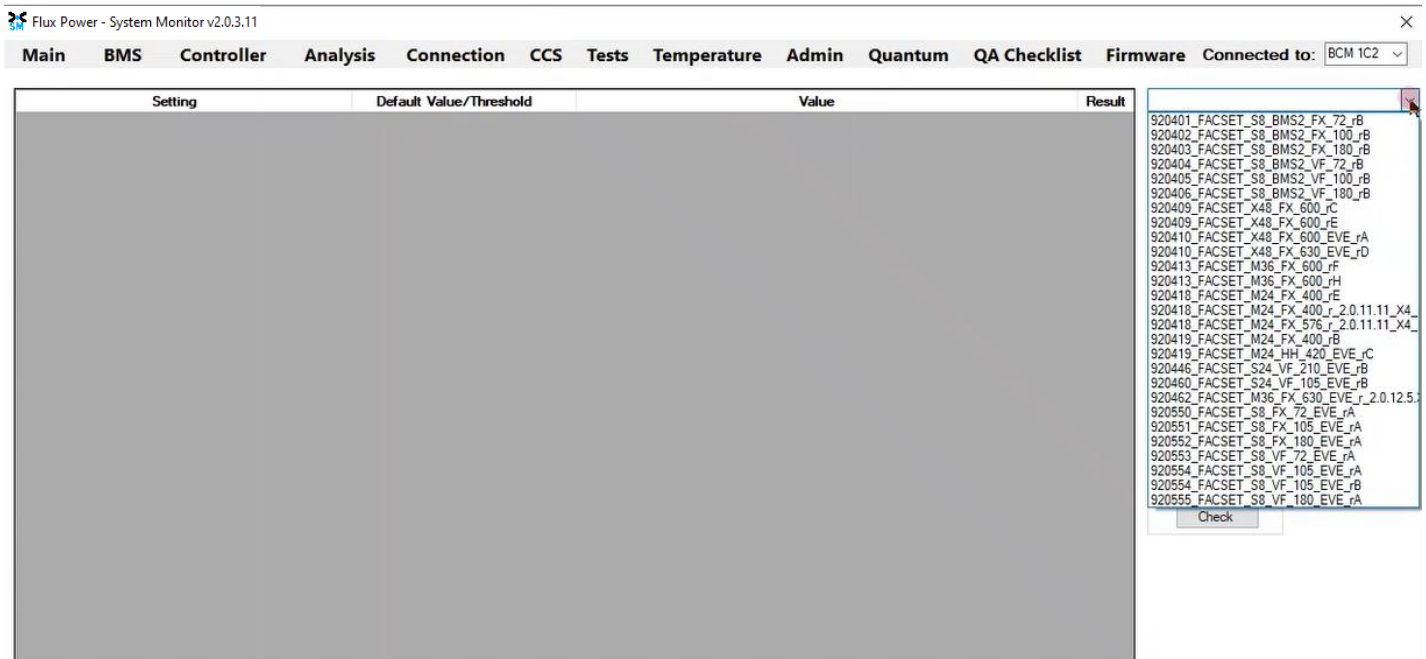


- 7) Once it completes restoring the settings, press the Ok button in the popup window to restart the program.

- 8) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option.



- 9) Select the dropdown highlighted below and choose the Factory Setting file that is needed. (The correct Factory Setting can be found in Appendix B.)



- 10) After selecting the Factory Setting file that is needed, select the Factory Settings button highlighted below and wait until the green bar under the Factory Settings button completes.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Setting	Default Value/Threshold	Value	Result
Package Version	920410_FACSET_X48_FX_630_E		
CAN ID	N/A		
Firmware	2.0.12.5		
Board Temperature (F)	140		
Pack Capacity (Ah)	567		
Pack Type	X48		
Charger Type	Manual		
Parasitic Drain (mA)	122		
Top Off Cell Voltage	3.43		
Max Cell Voltage	3.60		
Balance Voltage	3.55		
100% SOC Cell Voltage	3.42		
Warning Cell Voltage	2.95		
0% SOC Cell Voltage	2.80		
Latch 0 SOC on Low Voltage	0		
Sensor Polarity	Reversed		
Transducer Value	500		
Ignore Current Level (A)	2		
Sleep Mode	Enabled		
Sleep Mode Voltage	3.20		
Sleep Mode Timeout Below (min)	24000		
Sleep Mode Timeout Above (min)	43200		
Thermal Calibration Offset Tolerance	8		
Buzzer Duration (min)	60		
Buzzer Sound Every (sec)	15		

920410_FACSET_X48_FX_630_EVE_rD

Change Bcm Id
 1C2 102
 112 122

Factory Settings

Validate

Print

Save As...

Validation Enabled

Test External CAN
 0x730: N/A

Check

- 11) Once step 10 is complete, select the Firmware tab again and hit the Connected to: dropdown shown below. Select the BCM 102 and repeat Steps 4-7.

Flux Power - System Monitor v2.0.3.11

Main BMS Controller Analysis Connection CCS Tests Temperature Admin Quantum QA Checklist Firmware Connected to: BCM 1C2

Current Firmware: 2.0.12.5

Bootloader FW Bootloader Firmware: N/A

Step	Attempts	Status
01. Initializing		
02. Opening CAN Node		
03. Selecting Flash Memory Page 1		
04. Erasing Flash Memory		
05. Blank-Checking Flash Memory Page 1		
06. Programming Flash Memory Page 1		
07. Selecting Flash Memory Page 2		
08. Blank-Checking Flash Memory Page 2		
09. Programming Flash Memory Page 2		
10. Selecting EEPROM		
11. Erasing EEPROM		
12. Blank-Checking EEPROM		
13. Programming EEPROM		
14. Entering to Application Mode		
15. Restoring the BCM Settings		

Firmware

Firmware Version
 Select a Firmware

Retry CAN Node
 20 1C2 7F

BDI Internal

Factory Set

920401_FACSI

Update

Cancel

Restore/Save Settings Manually

Serial No. Parasitic Drain
 Capacity Sleep Mode
 Transducer Histograms
 Temperature Compensations
 Total Chg/Dchg Amphours
 Vref

Message Interval (ms) 100

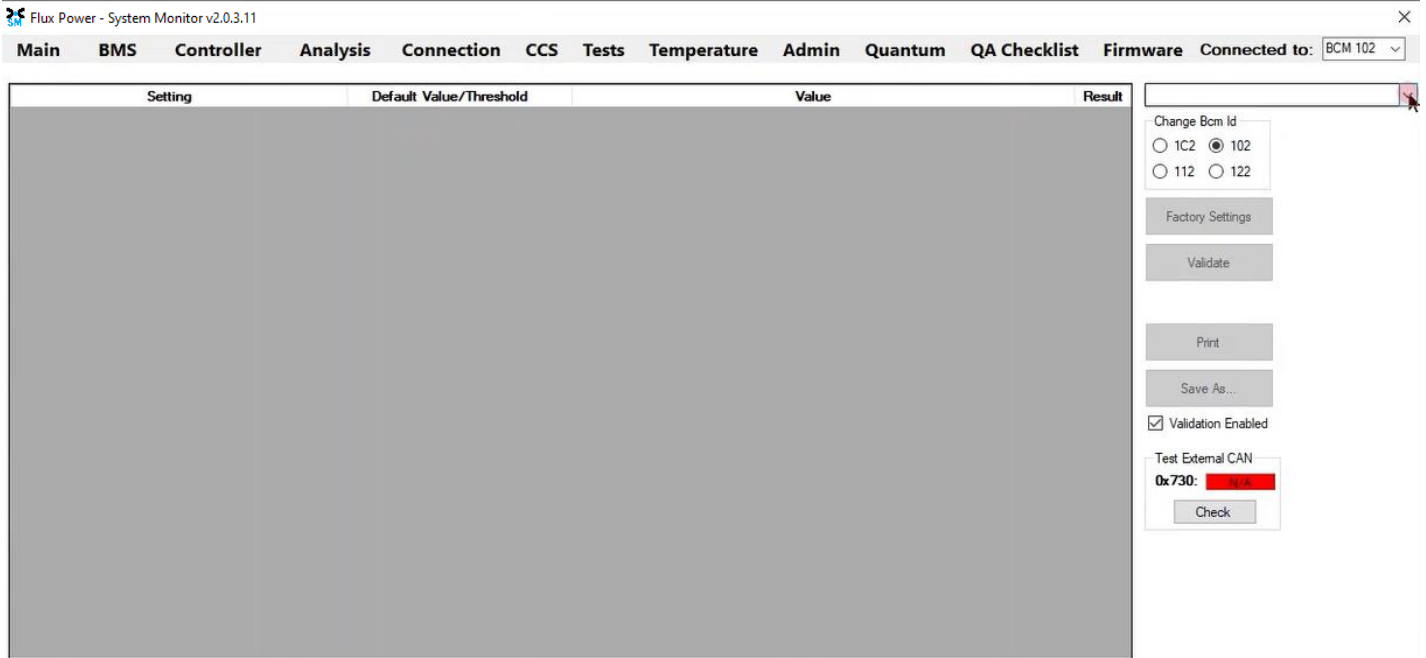
Restore Settings

Save Settings

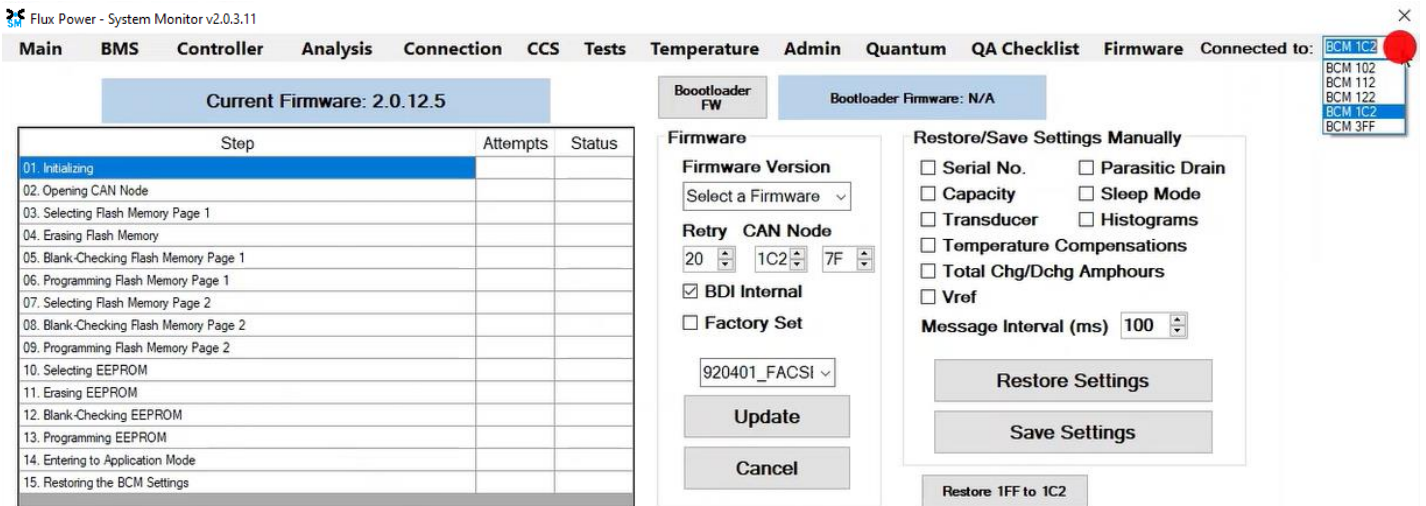
Restore 1FF to 1C2

BCM 1C2
 BCM 102
 BCM 112
 BCM 122
 BCM 1C2
 BCM 3FF

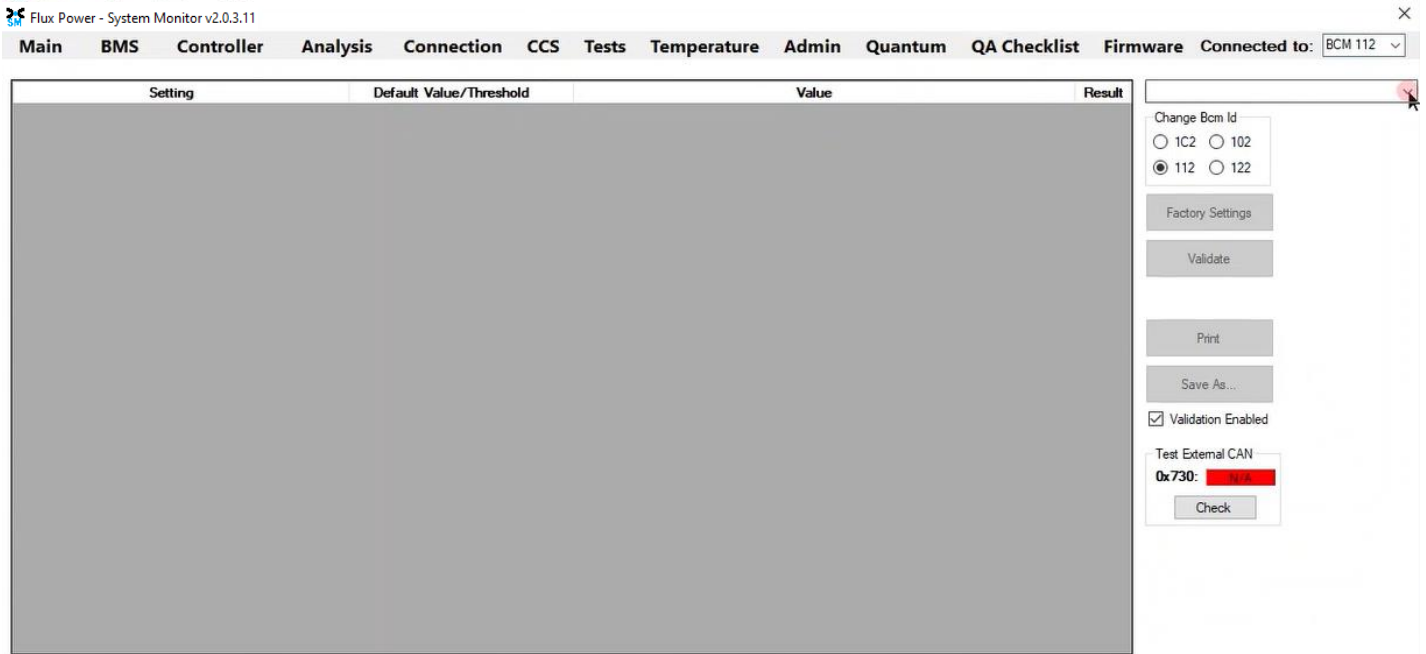
- After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option. Open the Connected to: dropdown and select the BCM 102, and make sure the Change Bcm Id box also shows 102 as seen below, and then repeat Steps 9-10.



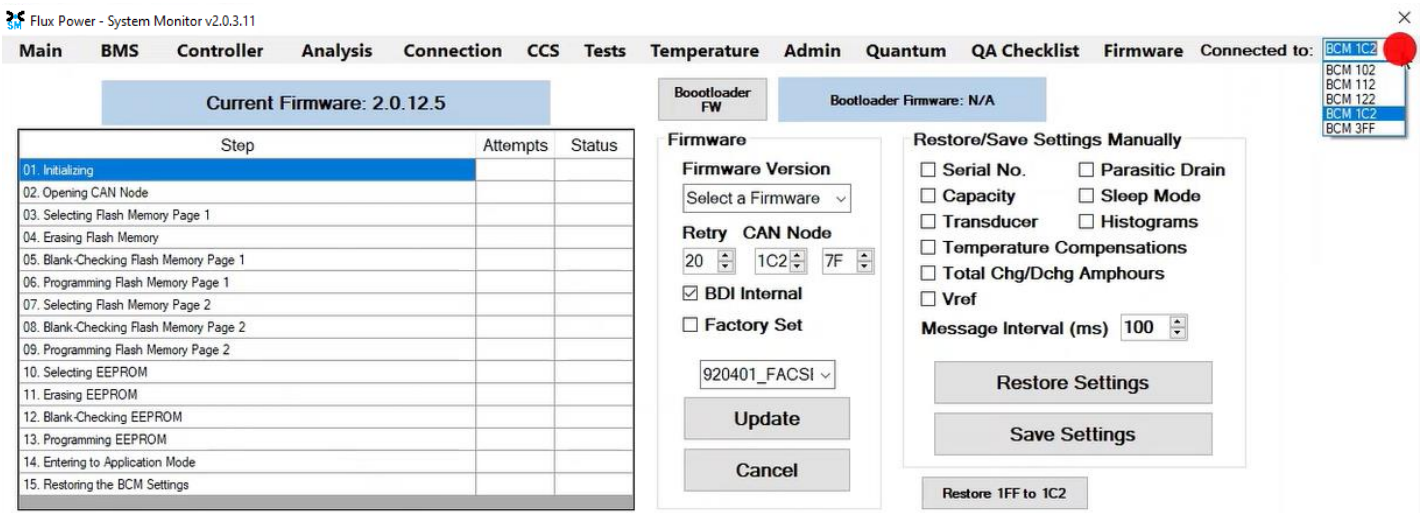
- Once step 12 is complete, select the Firmware tab again and hit the Connected to: dropdown shown below. Select the BCM 112 and repeat Steps 4-7.



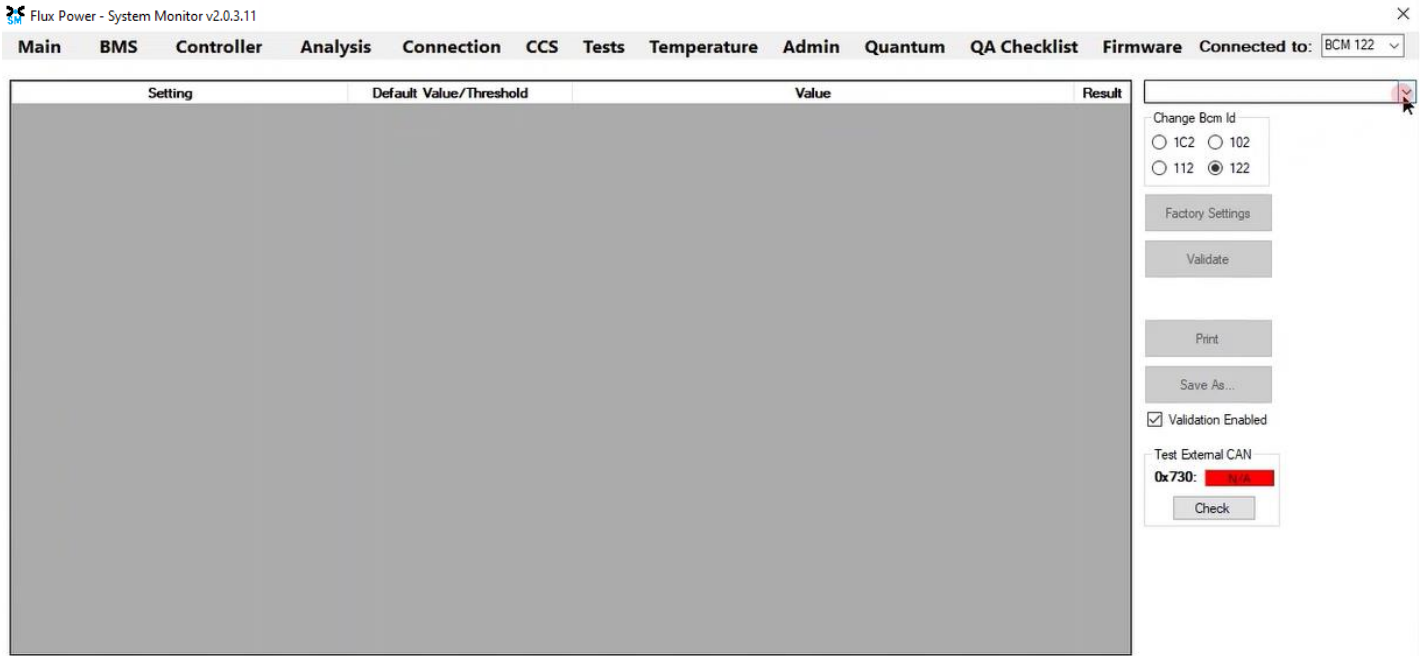
- 14) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option. Open the Connected to: dropdown and select the BCM 112, and make sure the Change Bcm Id box also shows 112 as seen below, and then repeat Steps 9-10.



- 15) Once step 14 is complete, select the Firmware tab again and hit the Connected to: dropdown shown below. Select the BCM 122 and repeat Steps 4-7.



16) After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option. Open the Connected to: dropdown and select the BCM 112, and make sure the Change Bcm Id box also shows 122 as seen below, and then repeat Steps 9-10.



After the battery finishes Step 16, please use Appendix C. to recalibrate the SOC to what it was before the update. Then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.

9 GSE-Series (G80)



Flux Power GSE

Software Required:

- Flux Connect GSE Pack 12.12 v1.1.0.13



Below are the steps for updating the software on the Flux Power Battery

- 1) Connect the computer to the battery via the Diagnostic cable.
- 2) Open the Flux Connect GSE Pack 12.12 program.
 - a. Please note the Charge (SOC%) of the battery.

3) Select the Firmware Tab highlighted below.

Flux Power - GSE Pack 12.12 v1.1.0.13

Main Blade Charger Analysis Connection CCS Temperature Admin Quantum QA Checklist **Firmware** Board Tester Connected to: 1C2

FLUX POWER

Current: 0.0 A Total Cycles: 0
Voltage: 0.00 V Total Energy Used: 0
Temperature: 0 °F Average Capacity Used: N/A

0%

Read Cycle Data Reset Cycle Data Save Histograms

Cycle #	Start SOC	End SOC	Depth of Discharge	kWh / Ah Used	kWh / Ah Recharged
---------	-----------	---------	--------------------	---------------	--------------------

4) Select the Firmware dropdown highlighted below, then choose the required Firmware, and select Update. (The correct Firmware can be found in Appendix B.)

Flux Power - GSE Pack 12.12 v1.1.0.13

Main Blade Charger Analysis Connection CCS Temperature Admin Quantum QA Checklist **Firmware** Board Tester Connected to: 1C2

Current Firmware: N/A

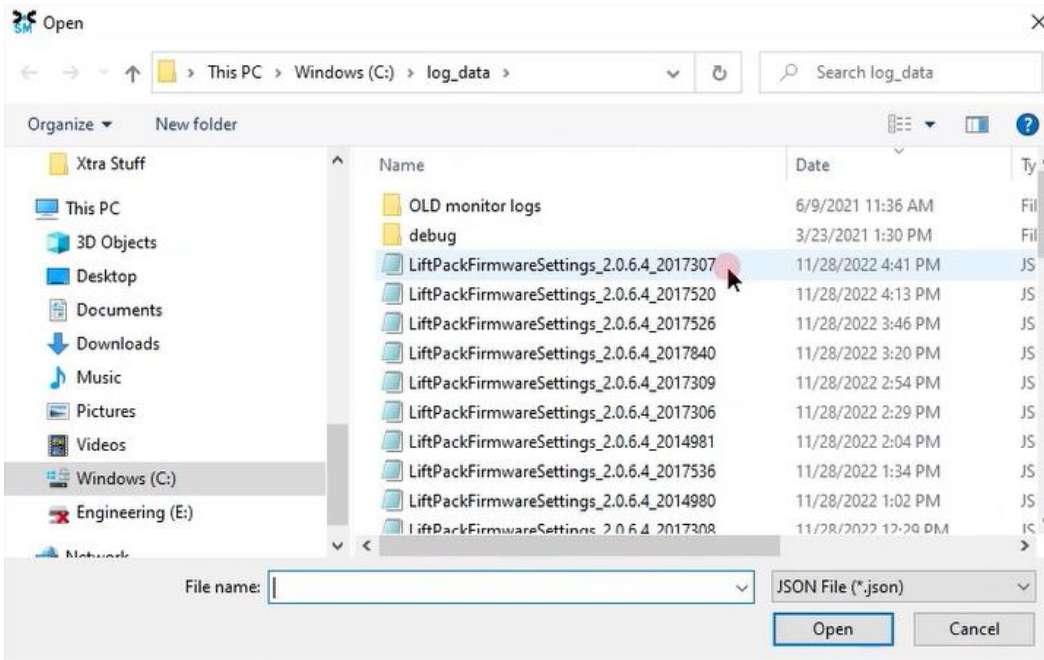
Step	Attempts	Status
01. Initializing		
02. Opening CAN Node		
03. Selecting Flash Memory Page 1		
04. Erasing Flash Memory		
05. Blank-Checking Flash Memory Page 1		
06. Programming Flash Memory Page 1		
08. Selecting Flash Memory Page 2		
09. Blank-Checking Flash Memory Page 2		
10. Programming Flash Memory Page 2		
11. Selecting EEPROM		
12. Erasing EEPROM		
13. Blank-Checking EEPROM		
14. Programming EEPROM		
15. Entering to Application Mode		
16. Loading the BCM Settings		

Firmware: Select a Firmware

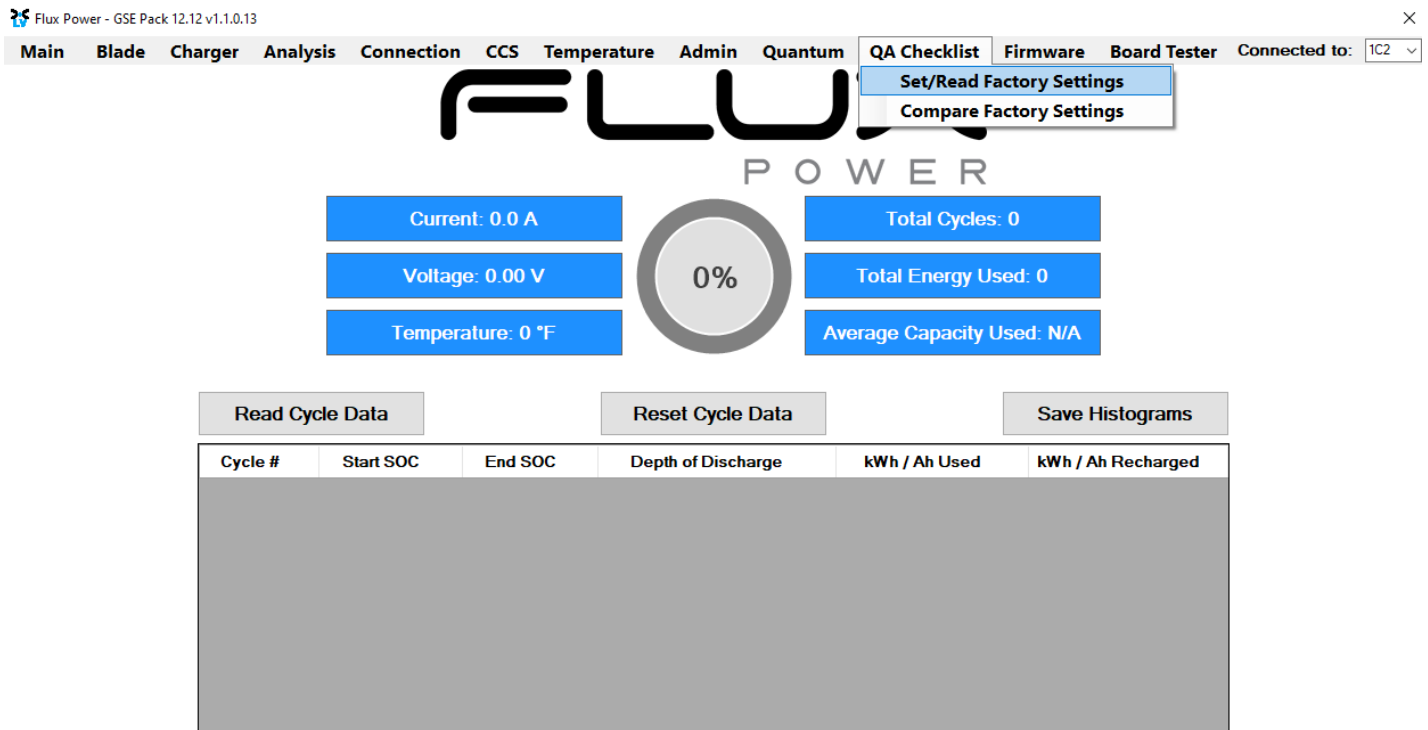
Retry: 20

Update Cancel

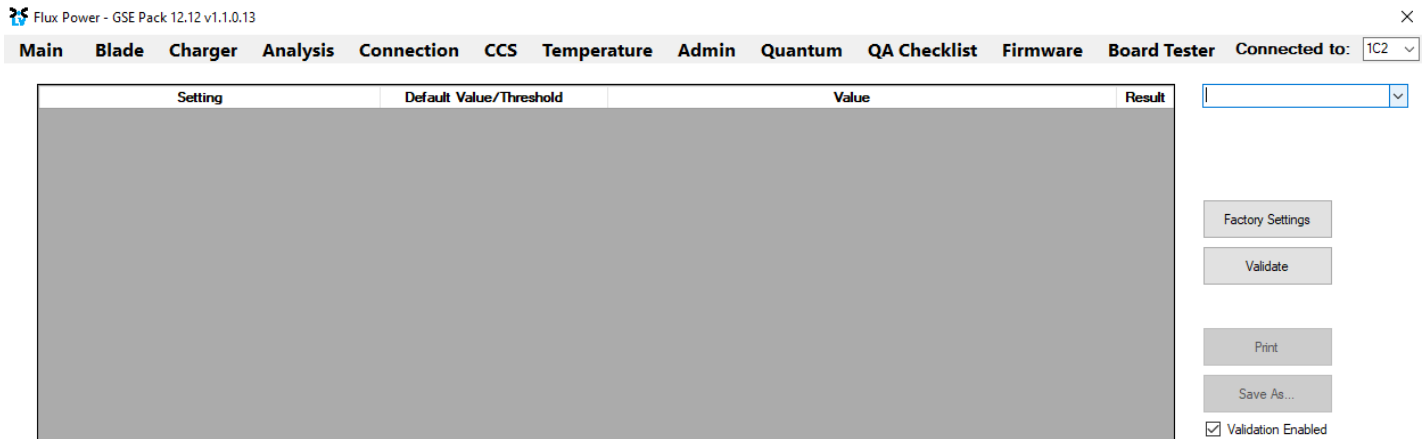
- Once the update finishes, select Ok in the popup window and then double click the Firmware Settings with the matching Serial Number of the battery as there may be multiple in the window, and then select Ok again in the next popup window.



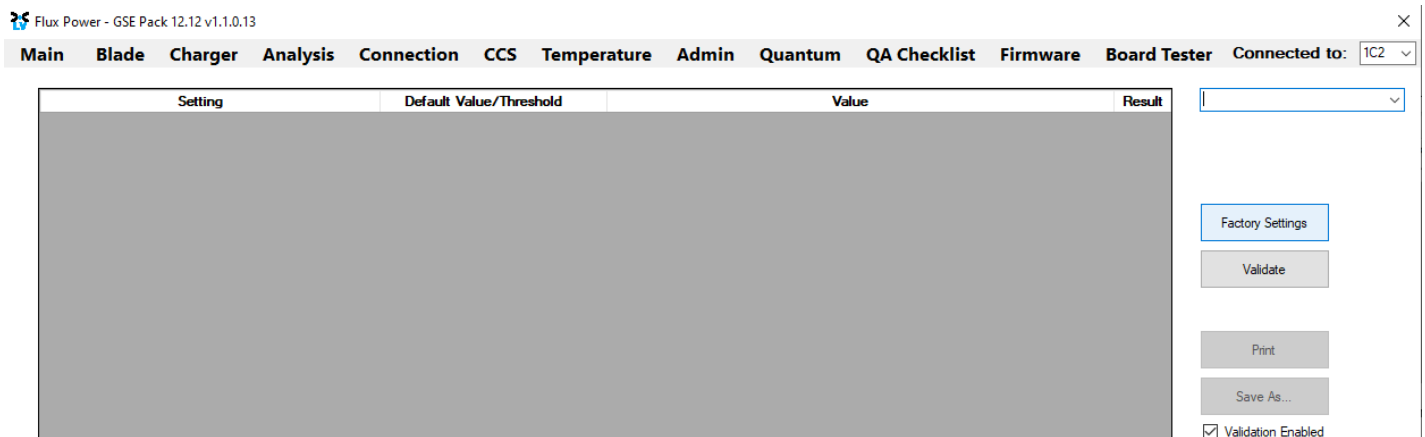
- Once it completes restoring the settings, press the Ok button in the popup window to restart the program.
- After it restarts and reopens the program, select the QA Checklist Tab, and then the Set/Read Factory Settings option.



- 8) Select the dropdown highlighted below and choose the Factory Setting file that is needed. (The correct Factory Setting can be found in Appendix B.)



- 9) After selecting the Factory Setting file that is needed, select the Factory Settings button highlighted below and wait until the green bar under the Factory Settings button completes.



After the battery finishes Step 9, please use Appendix C. to recalibrate the SOC to what it was before the update. Then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.

10 Flux Power Contact Details

Flux Power Inc.

Address: 2685 South Melrose Drive,

Vista, CA 92081

Tel: 877-505-3589

Fax: 760-741-3535

Email: Support@fluxpower.com

Web: www.fluxpower.com

WARNING – Risk of Fire – No User Serviceable Parts

11 Appendix

Appendix A. – PEAK OEM DRV Installer Instructions

This section will detail the steps to download all of the software that will be needed for each battery, specifically the PEAK OEM DRV. The location to download the Flux Power GUI can be found in this section as well.

- 1) Open your internet browser and go to <https://www.fluxpower.com/support>.
- 2) Then select the 'Click Here' button under the Product Technical Information
 - a. If you are prompted to enter a password, type **flux4all** and select Submit.
- 3) On the left-hand side of the page, select the Series Battery (S, C, L, M, X, GSE) that you need the software for.
 - a. The PEAK OEM DRV is the same for all battery types so any page can be selected, however the GUI is different based on the battery model type.
- 4) Once on the battery type needed, select the software tab on the right side of the page.
- 5) Here you should see a couple of things
 - a. Flux Power Connect System Monitor – This is the GUI that is specific to the battery model and will be used to troubleshoot or update the software.
 - b. Peak OEM DRV – This is the software that needs to be downloaded for the computer/tablet to read the battery
- 6) Select the PEAK OEM DRV to start the download, and then open once it is complete. In the folder you will see a few documents, please select, and run the .exe file highlighted below.

Name	Size	Packed Size	Modified	Created	Accessed
PCAN-Basic API	20 136 200	9 273 204	2017-01-31 19:13	2017-08-22 10:50	2017-08-22 10:50
PCAN-View	6 322 881	3 408 214	2015-03-09 21:43	2017-08-22 10:50	2017-08-22 10:50
LiesMich.txt	5 341	2 220	2017-01-25 13:23	2017-08-22 10:50	2017-08-22 10:50
PCAN-USB_UserMan_d...	2 224 400	2 061 279	2016-04-07 09:37	2017-08-22 10:50	2017-08-22 10:50
PCAN-USB_UserMan_e...	2 193 895	2 031 190	2016-07-07 09:37	2017-08-22 10:50	2017-08-22 10:50
PeakOemDrv.exe	46 997 584	40 518 136	2017-02-08 10:44	2017-08-22 10:50	2017-08-22 10:50
ReadMe.txt	5 596	2 259	2017-01-25 13:23	2017-08-22 10:50	2017-08-22 10:50

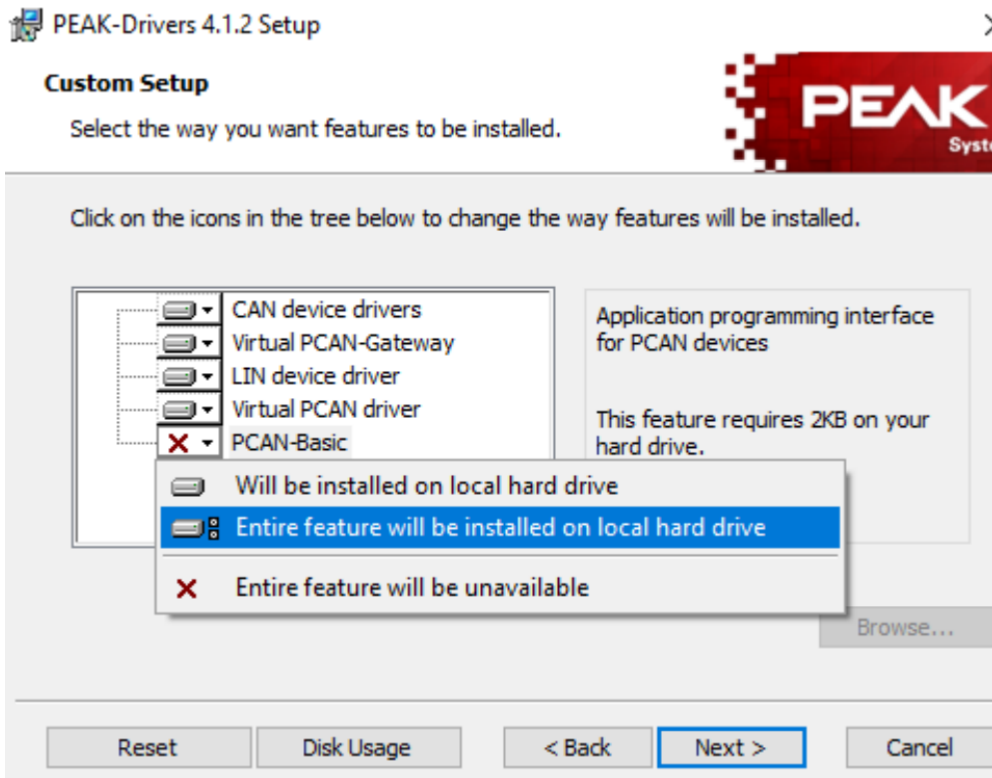
- 7) The "PEAK-Drivers 4.1.2 Setup Wizard" window will appear. Select "Next >".



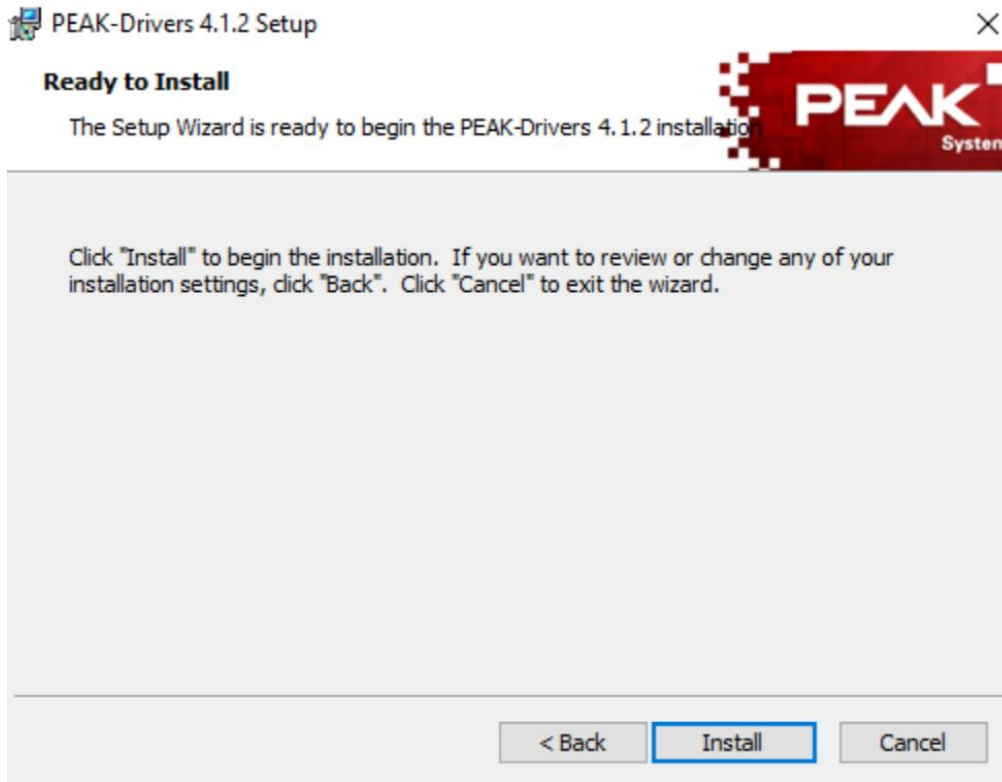
8) Select the "I accept the terms in the License Agreement" option. Select "Next >".



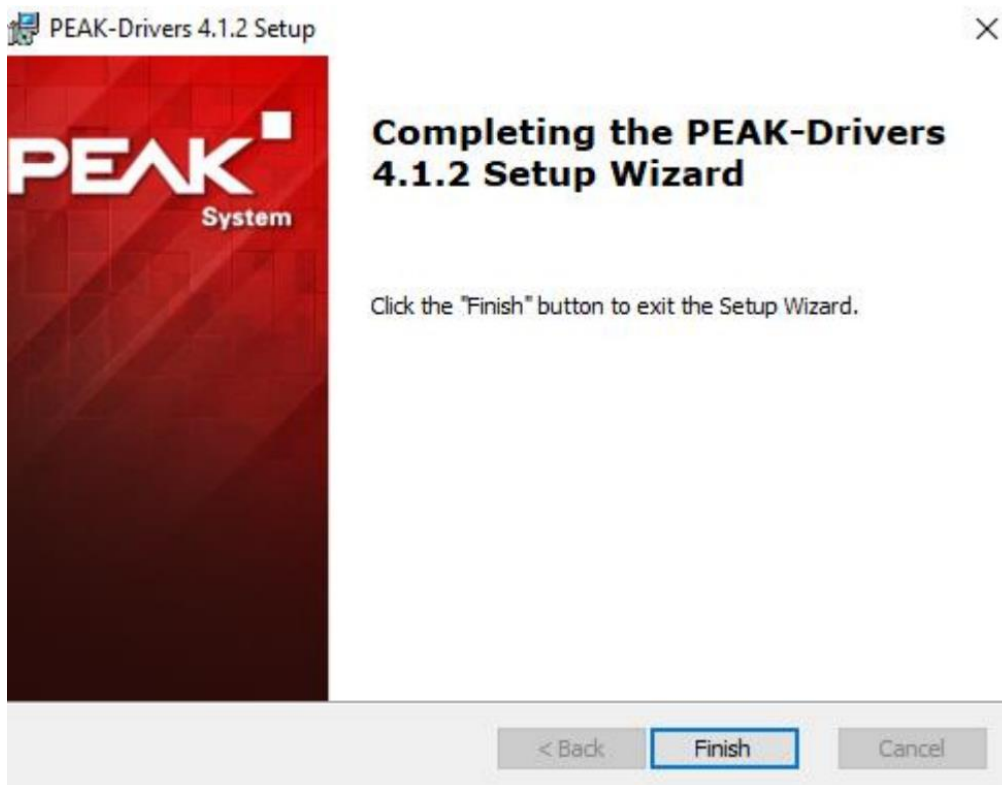
9) Each icon (the 5 rectangular gray boxes) will have a drop-down arrow on the bottom right. Click on the dropdown arrow. Select the "Entire feature will be installed on local hard drive". Select this feature for each icon. Once all icons have been selected with this feature, click on "Next >".



10) Click on "Install". This may take a few minutes.



11) Click on "Finish".



Appendix B. – Current Firmware and Factory Settings Table

Battery Model (Item Number)	Firmware	Factory Settings
S8 72 Ah (1000[70/72/73] - 04)	2.0.12.11	920401_FACSET_S8_BMS2_FX_72_r_2.0.12.11_rA
S8 100 Ah (1000[70/72/73] - [01/02])	2.0.12.11	920402_FACSET_S8_BMS2_FX_100_r_2.0.12.11_rA
S8 180 Ah (1000[70/72/73] - 03)	2.0.12.11	920403_FACSET_S8_BMS2_FX_180_r_2.0.12.11_rA
S8 75 Ah (1000[80/82/83] - 04)	2.0.12.11	TBA
S8 105 Ah (1000[80/82/83] - [01/02])	2.0.12.11	920454_FACSET_S8_BMS2_FX_105_EVE_rB
S24 100 Ah (1007[52/53/54] - [01/02])	2.0.12.11	920407_FACSET_S24_FX_100_rC
S24 105 Ah (1007[62/63/64/65] - [01/02])	2.0.12.11	920460_FACSET_S24_VF_105_EVE_rD
S24 210 Ah (1007[62/63/64/65] - [03/04])	2.0.12.11	920446_FACSET_S24_VF_210_EVE_rD
M24 Legacy 400 Ah (100260 - [01/02/03/04])	2.0.12.11	920418_FACSET_M24_FX_400_LEGACY_rE
M24 Legacy 576 Ah (100245 - [01/02/04])	2.0.12.11	920399_FACSET_M24_FX_600_LEGACY_rA
M24 New Gen (100280 - 01)	2.0.12.11	920419_FACSET_M24_HH_420_EVE_rE
M36 (100310 - [01/02/03/04])	2.0.12.11	920413_FACSET_M36_FX_600_rJ
M36 (100320 - [01/03/04/07/08])	2.0.12.11	920462_FACSET_M36_FX_630_EVE_rC
L48 First Gen (100220 - XX)	2.0.12.11	TBA
L48 (1002[25/26] - [00/01/03/05/10])	2.0.12.11	920422_FACSET_L48_NO_BMID_rH
L48 CAN (1002[25/26] - [04])	2.0.12.11	920423_FACSET_L48+POSICAN_rC
X36 600 Ah (100[160/341/343] - XX)	2.0.4.5	920416_FACSET_X36_FX_600_rF
X36 800 Ah (100[160/340/342] - XX)	2.0.4.5	920415_FACSET_X36_FX_800_rF
X48 600 Ah (100165 - [00/01/02/03/04/10/20])	2.0.12.11	920409_FACSET_X48_FX_600_rG
X48 630 Ah (1003[45/46/47/48/49] - [00/02])	2.0.12.11	920410_FACSET_X48_FX_630_EVE_rF
X80 400 Ah (100[166/167/350] - XX)	2.0.5.1	920439_FACSET_X80_FX_400_rC
X80 400 Ah w/ BMID (100[168/351] - XX)	2.0.5.1	920440_FACSET_X80_FX_400_rA_w_BMID
GSE 300 (1001[52/53/58] - 01)	2.0.6.15	920431_FACSET_GSE3_rH
GSE 315 Trepel Config (100158 - 03)	2.0.6.15	920435_FACSET_TREPEL_Dual_GSE3_rC
GSE 420 (100156 - XX)	2.0.6.13	920468_FACSET_GSE4_CAT_EVE_rA

Appendix C. – State of Charge (SOC) Recalibration

This section will detail the steps to recalibrate the SOC in the battery, specifically after a FW update.

- 1) Open your Flux Connect System Monitor program.
- 2) Select the Admin tab highlighted below.

The screenshot shows the Flux Power System Monitor v2.0.3.11 interface. The 'Admin' tab is selected and highlighted. The 'Set SoC (%)' button is highlighted with a red circle. The interface displays various battery parameters such as Pack Voltage (53.44 V), State of Charge (33%), Remaining Capacity (189.90 Ah), and Max D/Chg SOC Time (0 hrs). The 'Set SoC (%)' button is currently set to 10.

- 3) Input the SOC% number that the battery was at before the software update in the text box to the right of the highlighted Set SOC% button. Once the number has been input in the box, select the Set SOC% button.

The screenshot shows the Flux Power System Monitor v2.0.3.11 interface. The 'Admin' tab is selected and highlighted. The 'Set SoC (%)' button is highlighted with a red circle, and the value '90' is entered in the adjacent text box. The interface displays various battery parameters such as Pack Voltage (53.42 V), State of Charge (33%), Remaining Capacity (189.90 Ah), and Max D/Chg SOC Time (0 hrs). The 'Set SoC (%)' button is currently set to 90.

- 4) You should then see the State of Charge on the battery change. Then hit the Read Values button in the top left of the Admin page to save the setting.

The screenshot shows the Flux Power System Monitor v2.0.3.11 interface. The 'Admin' tab is selected and highlighted. The 'Read Values' button is highlighted with a red circle. The interface displays various battery parameters such as Pack Voltage (53.43 V), State of Charge (90%), Remaining Capacity (189.90 Ah), and Max D/Chg SOC Time (0 hrs). The 'Set SoC (%)' button is currently set to 90.

- 5) If the software update has been completed and nothing else needs to be done for the battery, then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support-0@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.

Appendix D. – Software Power Override

This section will detail the steps to Enable the Software Power Override, specifically after a FW update, which will prevent the battery from turning off after a few seconds.

- 1) Turn the battery OFF.
- 2) Open your Flux Connect System Monitor program.
- 3) The next few steps will need to be completed during the period of time that the battery is ON.
- 4) Turn the battery ON, and note that the rest of the steps will need to be completed before the battery turns back OFF.
- 5) Select the Admin tab highlighted below, and then select the Settings tab that is right below the BMS tab in the top left.

- 6) Check the box below Software Power Override to 'Enable', and then hit the Read Values button in the top left.

- 7) If the software update still needs to be completed, please begin the next step of the update. If the software update has been completed and nothing else needs to be done for the battery, then please turn the battery off, remove the Diagnostic cable, reattach any external connections and power the battery back on. Ensure that everything is working correctly, and then put the battery on the charger to charge to 100% before putting in service. Please email support@fluxpower.com the Serial Number of the battery, and the new Firmware put on it.