**User Guide** 

# 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 <u>www.fluxpower.com</u>.

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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.
  - $_{\odot}$  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 (<u>https://www.fluxpower.com/support</u>) 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.



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

Flux Pov	wer - System	Monitor v2.0.3.11											
Main	BMS	Controller	Analysis	Connecti	on CC	S Tests	Temperature	Admin	Quan	tum QA Check	ist Firmware	Connected to:	BCM 1C2
		Current	Firmware: 2	.0.6.4			Boootloader FW	Boo	otloader F	irmware: N/A			
		Step			Attempts	Status	Firmware			Restore/Save Set	ttings Manually		
01. Initializir	ng						Firmware	Version		Serial No.	Parasitic E	Drain	
02. Openin	g CAN Node						Select a Fir	mware		Capacity	Sleep Mod	e	
03. Selectin	ng Flash Mem	ory Page 1					Select a Fir		- I		Histogram	8	
04. Erasing	Flash Memory	y					2064103				Compensations		
05. Blank-C	Checking Flash	n Memory Page 1					2055102	- )	-		compensations		
06. Program	mming Flash M	lemory Page 1					2.0.4.12.10	2	- Second Street	Total Chg/Dcl	ng Amphours		
07. Selectin	ng Flash Mem	ory Page 2					2.0.12.5 10	2		Vref			
08. Blank-C	Checking Flash	n Memory Page 2					2.0.11.3 10	2		Message Interva	l (ms) 100 ≑		
09. Program	mming Flash M	lemory Page 2					2.0.11.111	C2			t the second		
10. Selectin	ng EEPROM						920401	FACSI		Destas	0		
11. Erasing	EEPROM						[*****			Restor	e Settings		
12. Blank-C	ank-Checking EEPROM					Upd	late						
13. Program	ogramming EEPROM						500050 J		Save	Settings			
14. Entering	Entering to Application Mode					Cor	aal						
15. Restori	ng the BCM S	ettings					Car	icei		D . 155. 10			



5) Make sure the BDI Internal and Factory Setting checkboxes are **<u>UNCHECKED</u>**, and then select Update.

🕈 Flux Powe	er - System N	Nonitor v2.0.3.11											>
Main	BMS	Controller	Analysis	Connect	on CC	5 Tests	Temperature	Admin	Quantum	QA Checkli	st Firmware	Connected to:	BCM 1C2 v
		Current	Firmware: 2	2.0.6.4			Boootloader FW	Bo	otloader Firmwa	are: N/A			
01. Initializin 02. Opening 03. Selectin 04. Erasing 05. Blank-Cl 06. Program 07. Selectin 08. Blank-Cl 09. Program 10. Selectin 11. Erasing 12. Blank-Cl 13. Program	g (CAN Node g Rash Memory hecking Rash Memory hecking Rash Ming Rash Memor hecking Rash Ming BEPROM EEPROM hecking EEPR ming EEPROM	Step iny Page 1 Memory Page 1 iny Page 2 Memory Page 2 emory Page 2 emory Page 2 emory Page 2 emory Page 2 emory Page 2 emory Page 1 iny Page 2 emory Page 3 emory Page 3 emory Page 4 emory			Attempts	Status	Firmware Firmware 2.0.12.5 10 Retry CA 20 11 BDI Inte Factory 920401_	Version <sup>12</sup> V N Node C2 7 7F rmal Set FACSI V [ate	Re:	store/Save Sett Serial No. Capacity Transducer Temperature C Total Chg/Dch Vref essage Interval Restore Save S	ings Manually Parasitic I Sleep Mod Histogram compensations g Amphours (ms) 100  Settings Settings	Drain le s	
15. Restorin	g the BCM Se	ettings					Car	ncel		Restore 1FF to 1C2			

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.

Copen						>
$\leftrightarrow \rightarrow \neg \uparrow \square$ > This PC	> Window	s (C:) → log_data →	~	ō	. ○ Search log_data	
Organize 👻 New folder						2
🔜 Xtra Stuff	^	Name			Date	Ty
🛄 This PC		OLD monitor logs			6/9/2021 11:36 AM	Fil
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Deskton		LiftPackFirmwareSettings	_2.0.6.4_20173	307	11/28/2022 4:41 PM	JS
Desumente		LiftPackFirmwareSettings	_2.0.6.4_20175	520	11/28/2022 4:13 PM	JS
Documents		LiftPackFirmwareSettings	_2.0.6.4_20175	526	11/28/2022 3:46 PM	JS
- Downloads		LiftPackFirmwareSettings	_2.0.6.4_20178	340	11/28/2022 3:20 PM	JS
👌 Music		LiftPackFirmwareSettings	_2.0.6.4_20173	309	11/28/2022 2:54 PM	JS
E Pictures		LiftPackFirmwareSettings	_2.0.6.4_20173	306	11/28/2022 2:29 PM	JS
Videos		LiftPackFirmwareSettings	2.0.6.4_20149	981	11/28/2022 2:04 PM	JS
Windows (C:)		LiftPackFirmwareSettings	2.0.6.4_20175	536	11/28/2022 1:34 PM	JS
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A Notwork	*	<				>
File name:	1			Y	JSON File (*.json)	~

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.)

🚮 Flux Pov	ver - System	Monitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to: BCM 1C2	~
Main	Setting		Analysis	Connection efault Value/Thresh	CCS old	Tests	Temperature	Admin Value	Quantum	QA Checklist	Firmware 920401 920403 920403 920403 920403 920406 920406 920406 920406 920410 920413 920413 920413 920413 920418 920468 92048 9204	Connected to: BCM 102 FACSET_S8_BMS2_FX_72_B FACSET_S8_BMS2_FX_100_F8 FACSET_S8_BMS2_FX_100_F8 FACSET_S8_BMS2_VF_72_F8 FACSET_S8_BMS2_VF_70_F8 FACSET_S8_BMS2_VF_100_F8 FACSET_S8_BMS2_VF_100_F8 FACSET_S8_BMS2_VF_100_F6 FACSET_X88_FX_600_F6 FACSET_X88_FX_600_F6 FACSET_X88_FX_600_F6 FACSET_X88_FX_600_F6 FACSET_X88_FX_600_F7 FACSET_X88_FX_70_F7 FACS FX	11_X4_ 11_X4_ 0.12.5.:
											92055 920552 920533 920554 920555 920555	T-ACSET'S8_FX-T05_EVE_rA FACSET'S8_FX-180_EVE_rA FACSET'S8_VF-72_EVE_rA FACSET'S8_VF-105_EVE_rA FACSET'S8_VF-105_EVE_rB FACSET'S8_VF-180_EVE_rA FACSET'S8_VF-180_EVE_rA	



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 Po	wer - System N	Aonitor v2.0.3.11													×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Check	list F	irmware	Connected	to: BCM 1C2	2 ~
	Se	etting	D	efault Value/Thresh	old			Value			Result	<b>^</b> 9204	10_FACSET_X48_FX	_630_EVE_rD	v
Package	e Version		9204	10_FACSET_X48_I	X_630_E							Cha	nge Bcm Id		
CAN ID			N/A										IC2 () 102		
Firmware	9		2.0.1	2.5								0	112 0 122		
Board Te	emperature (F	)	140												
Pack Ca	pacity (Ah)		567									Fa	ctory Settings		
Pack Ty	pe		X48										R.		
Charger	Туре		Man	Jal									Validata		
Parasitic	Drain (mA)		122										Validate		
Top Off (	Cell Voltage		3.43												
Max Cell	Voltage		3.60												
Balance	Voltage		3.55										Print		
100% SC	C Cell Voltag	le	3.42												
Warning	Cell Voltage		2.95										Save As		
0% SOC	Cell Voltage		2.80												
Latch 0 S	SOC on Low V	oltage	0										alidation Enabled		
Sensor F	olarity		Reve	ersed								Test	External CAN		
Transdu	cer Value		500									0x7	30: N/A		
Ignore C	urrent Level (A	<del>\</del> )	2									1	C 1		
Sleep M	ode		Enab	oled									LNECK		
Sleep M	ode Voltage		3.20												
Sleep M	ode Timeout	Below (min)	2400	0											
Sleep M	ode Timeout	Above (min)	4320	0											
Thermal	Calibration O	ffset Tolerance	8												
Buzzer D	uration (min)		60												
BuzzorS	ound Evony (g	(202	15									~			

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 <u>support@fluxpower.com</u> 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.)

Flux Pov	ver - System	Monitor v2.0.3.11													×
Main	BMS	Controller	Analysis	Connect	on CC	S Tests	Temperature	Admin	Qua	ntum	QA Checklist	Firmware	Connected to:	BCM 1C2	~
		Current	Firmware: 2	2.0.6.4			Boootloader FW	Bo	otloader	Firmware	: N/A				
01. Initializi 02. Openin 03. Selectir 04. Erasing 05. Blank-C 06. Program 07. Selectir 08. Blank-C 09. Program 10. Selectir	ng g CAN Node ng Rash Memon Thecking Rash mming Rash Memu Checking Rash mming Rash Memu Checking Rash mming Rash M ng EEPROM	Step			Attempts	Status	Firmware Firmware Select a Fi 2.0.6.4 102 2.0.5.4 102 2.0.5.10 2.0.4.12 10 2.0.4.12 10 2.0.12.5 10 2.0.11.3 10 2.0.11.11 1 920401_	Version rmware 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	•	Resto Se Ca Tr Tr Tr Vr Mess	pre/Save Settin prial No. apacity ansducer properature Co otal Chg/Dchg of sage Interval ( Restore 3	ngs Manually Parasitic D Sleep Mod Histograms Inpensations Amphours ms) 100 ‡ Settings	brain e S		
12. Blank-C 13. Program	Erasing EEPROM Blank-Checking EEPROM Programming EEPROM						Upo	late			Save S	ettings			
14. Enterin 15. Restori	g to Applicatio ng the BCM S	n Mode ettings					Car	ncel		Re	store 1FF to 1C2	1			



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 **<u>UNCHECKED</u>**. Select Update once they are set properly.

Flux Pow	er - System N	Monitor v2.0.3.11											>
Main	BMS	Controller	Analysis	Connect	ion CC	Tests	Temperature	Admin	Quantum	QA Checklis	st Firmware	Connected to	: BCM 1C2 ~
		Current	Firmware: 2	2.0.6.4			Boootloader FW	Boo	otloader Firmwa	are: N/A			
01 Initializi 02. Opening 03. Selectin 04. Erasing 05. Blank-C 06. Program 07. Selectin 08. Blank-C 09. Program 10. Selectin 11. Erasing 12. Blank-C 13. Program	g GAN Node g Rash Memo hecking Rash Memo hecking Rash M g Rash Memo hecking Rash Memo hecking Rash Meg EPROM hecking EEPROM	Step sny Page 1 4 Memory Page 1 emory Page 1 ny Page 2 Memory Page 2 emory Page 2 emory Page 2 emory Page 2 emory Page 2 emory Page 1 Memory Page 1 Memory Page 1 emory Page 1 Memory Page 1 emory Page 1 Memory Page 1 emory Page 2 emory Page 3 emory P			Attempts	Status	Firmware Firmware 2.0.12.5 1C Retry CAI 20 ÷ 11 BDI Inte Factory 920401_1	Version 2 \vee N Node C2 \vee 7F mal Set ACSI \vee ate	Res	store/Save Sett Serial No. Capacity Transducer Temperature C Total Chg/Dchg Vref essage Interval Restore Save S	ings Manually Parasitic E Sleep Mod Histogram ompensations Amphours (ms) 100  Settings	Drain le s	
14. Entering 15. Restorir	to Applications the BCM S	n Mode ettings				_	Can	cel		Restore 1FF to 1C2			

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.

Copen					×
← → ~ ↑ 🔚 → This P	C > Windows (	C:) → log_data →	ٽ ~	,	
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🔜 Xtra Stuff	^	Name		Date	Ty
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Desktop		LiftPackFirmwareSettings_	2.0.6.4_2017520	11/28/2022 4:13 PM	JS
Documents		LiftPackFirmwareSettings_	2.0.6.4_2017526	11/28/2022 3:46 PM	JS
		LiftPackFirmwareSettings_	2.0.6.4_2017840	11/28/2022 3:20 PM	JS
Music		LiftPackFirmwareSettings_	2.0.6.4_2017309	11/28/2022 2:54 PM	JS
E Pictures		LiftPackFirmwareSettings_	2.0.6.4_2017306	11/28/2022 2:29 PM	JS
Videos		LiftPackFirmwareSettings_	2.0.6.4_2014981	11/28/2022 2:04 PM	JS
Windows (C:)		LiftPackFirmwareSettings_	2.0.6.4_2017536	11/28/2022 1:34 PM	JS
- Engineering (E:)		LiftPackFirmwareSettings_	2.0.6.4_2014980	11/28/2022 1:02 PM	JS
A Natural	~ <	I iftDackFirmwareSettings	2 0 6 4 2017308	11/28/2022 12-29 PM	> <
File nam	e:			✓ JSON File (*.json)	~
				Open Canc	el

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.)

🚮 Flux Pov	ver - System	Monitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to: BCM 1C2	~
Main	Setting		Analysis	Connection	old	Tests	Temperature	Admin Value	Quantum	QA Checklist	Firmware	Connected to: BCM 1C2 FACSET \$8, BMS2 FX, 72, r8 FACSET \$8, BMS2 FX, 180, r8 FACSET \$8, BMS2 VF, 180, r8 FACSET \$8, FX, 600, r4 FACSET \$8, FX, 600, FY, FX, FX, FX, FX, FX, FX, FX, FX, FX, FX	1_X4_ 1_X4_ 1_X4_
											920554 920555 920555	_FACSET_S8_VF_105_EVE_rA FACSET_S8_VF_105_EVE_rB 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 Po	wer - System N	Aonitor v2.0.3.11													×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Check	list F	irmware	Connected	to: BCM 1C2	2 ~
	Se	etting	D	efault Value/Thresh	old			Value			Result	<b>^</b> 9204	10_FACSET_X48_FX	_630_EVE_rD	v
Package	e Version		9204	10_FACSET_X48_I	X_630_E							Cha	nge Bcm Id		
CAN ID			N/A										IC2 () 102		
Firmware	9		2.0.1	2.5								0	112 0 122		
Board Te	emperature (F	)	140												
Pack Ca	pacity (Ah)		567									Fa	ctory Settings		
Pack Ty	ре		X48										R.		
Charger	Туре		Man	Jal									Validata		
Parasitic	Drain (mA)		122										vanuate		
Top Off (	Cell Voltage		3.43												
Max Cell	Voltage		3.60												
Balance	Voltage		3.55										Print		
100% SC	C Cell Voltag	le	3.42												
Warning	Cell Voltage		2.95										Save As		
0% SOC	Cell Voltage		2.80												
Latch 0 S	SOC on Low V	oltage	0										alidation Enabled		
Sensor F	olarity		Reve	ersed								Test	External CAN		
Transdu	cer Value		500									0x7	30: N/A		
Ignore C	urrent Level (A	<del>\</del> )	2									1	C 1		
Sleep M	ode		Enab	oled									LNECK		
Sleep M	ode Voltage		3.20												
Sleep M	ode Timeout	Below (min)	2400	0											
Sleep M	ode Timeout	Above (min)	4320	0											
Thermal	Calibration O	ffset Tolerance	8												
Buzzer D	uration (min)		60												
BuzzorS	ound Evony (g	(202	15									~			

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 <u>support@fluxpower.com</u> 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.)

Flux Pov	ver - System	Monitor v2.0.3.11													×
Main	BMS	Controller	Analysis	Connect	on CC	S Tests	Temperature	Admin	Qua	ntum	QA Checklist	Firmware	Connected to:	BCM 1C2	~
		Current	Firmware: 2	2.0.6.4			Boootloader FW	Bo	otloader	Firmware	: N/A				
01. Initializi 02. Openin 03. Selectir 04. Erasing 05. Blank-C 06. Program 07. Selectir 08. Blank-C 09. Program 10. Selectir	ng g CAN Node ng Rash Memon Thecking Rash mming Rash Memu Checking Rash mming Rash Memu Checking Rash mming Rash M ng EEPROM	Step			Attempts	Status	Firmware Firmware Select a Fi 2.0.6.4 102 2.0.5.4 102 2.0.5.10 2.0.4.12 10 2.0.4.12 10 2.0.12.5 10 2.0.11.3 10 2.0.11.11 1 920401_	Version rmware 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	•	Resto Se Ca Tr Tr Tr Vr Mess	pre/Save Settin prial No. apacity ansducer properature Co otal Chg/Dchg of sage Interval ( Restore 3	ngs Manually Parasitic D Sleep Mod Histograms Inpensations Amphours ms) 100 ‡ Settings	brain e S		
12. Blank-C 13. Program	Erasing EEPROM Blank-Checking EEPROM Programming EEPROM						Upo	late			Save S	ettings			
14. Enterin 15. Restori	g to Applicatio ng the BCM S	n Mode ettings					Car	ncel		Re	store 1FF to 1C2	1			



5) Make sure the BDI Internal and Factory Setting checkboxes are **<u>UNCHECKED</u>**, and then select Update.

🚮 Flux Powe	er - System N	Ionitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connecti	on CCS	Tests	Temperature	Admin	Quantum	QA Checkl	ist Firmware	Connected to:	BCM 1C2 v
		Current	Firmware: 2	2.0.6.4			Boootloader FW	Bo	otloader Firmwa	nre: N/A			
01 Initializi 02. Opening 03. Selectin 04. Erasing 05. Blank-C 06. Program 07. Selectin 08. Blank-C 09. Program 10. Selectin 11. Erasing 12. Blank-C 13. Program	g J CAN Node g Rash Memo Rash Memo hecking Rash ming Rash Memo hecking Rash Memo hecking Rash Memo g EEPROM EEPROM hecking EEPROI	Step ny Page 1 Memory Page 1 amory Page 1 ny Page 2 Memory Page 2 amory Page 2 amory Page 2 amory Page 2			Attempts	Status	Firmware Firmware 2.0.12.5 10 Retry CA 20 2 1 BDI Inte Factory 920401_	Version 22 V N Node C2 7 7F ormal 2 Set FACSI V 4ate	Res	store/Save Set Serial No. Capacity Transducer Temperature ( Total Chg/Dcf Vref essage Interva Restore Save	tings Manually Parasitic D Sleep Mod Histogram Compensations ag Amphours I (ms) 100  E Settings Settings	Drain le S	
14. Entering 15. Restorin	to Application g the BCM Se	n Mode ttlings				_	Car	ncel		Restore 1FF to 1C	2		

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.

Copen						×
$\leftarrow$ $\rightarrow$ $\sim$ $\uparrow$ $\square$ $\rightarrow$ This PC $\rightarrow$ V	Vindows (	C:) → log_data →	~	Ō	○ Search log_data	
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3D Objects		ebug			3/23/2021 1:30 PM	Fil
Derkton		LiftPackFirmwareSettings_2	.0.6.4_2017	307	11/28/2022 4:41 PM	JS
Desktop		LiftPackFirmwareSettings_2	.0.6.4_2017	520	11/28/2022 4:13 PM	JS
Documents		LiftPackFirmwareSettings_2	.0.6.4_2017	526	11/28/2022 3:46 PM	JS
🔶 Downloads		LiftPackFirmwareSettings_2	.0.6.4_2017	840	11/28/2022 3:20 PM	JS
Music		LiftPackFirmwareSettings_2	.0.6.4_2017	309	11/28/2022 2:54 PM	JS
E Pictures		LiftPackFirmwareSettings_2	.0.6.4_2017	306	11/28/2022 2:29 PM	JS
📕 Videos		LiftPackFirmwareSettings_2	.0.6.4_2014	981	11/28/2022 2:04 PM	JS
Windows (C:)		LiftPackFirmwareSettings_2	.0.6.4_2017	536	11/28/2022 1:34 PM	JS
Engineering (E:)		LiftPackFirmwareSettings_2	.0.6.4_2014	980	11/28/2022 1:02 PM	JS
		I iftPackFirmwareSettings	064 2017	รกร	11/28/2022 12-29 PM	IC ¥
- Matuada	v <				-	>
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					Open Cance	el

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.)

Flux Pov	ver - System I	Monitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to	: BCM 1C2 🗸
	S	etting	De	efault Value/Thresh	old			Value		F	Result 92040 92040 92040 92040 92040 92040	1_FACSET_S8_BMS2 FACSET_S8_BMS2 3_FACSET_S8_BMS2 4_FACSET_S8_BMS2 5_FACSET_S8_BMS2	FX_72_r8 FX_100_r8 FX_180_r8 FX_180_r8 VF_72_r8 VF_100_r8
											32040 92040 92041 92041 92041 92041 92041 92041 92041 92041 92046 92046 92046 92046 92046 92046 92055 92055 92055 92055 92055	6. FACSET S8. BM/S2 9. FACSET X48, FX. 6( 0. FACSET X48, FX. 6( 0. FACSET X48, FX. 6( 0. FACSET X48, FX. 6( 0. FACSET X48, FX. 6( 8. FACSET M24, FX. 48, FACSET M24, FX. 48, FACSET M24, FX. 48, FACSET M24, FX. 49, FACSET M24, FX. 49, FACSET M24, FX. 49, FACSET M24, FX. 49, FACSET M36, FX. 60, FACSET S8, FX. 108, FACSET S8, FX. 108, FX. 108,	VF_180_rB 00_rC 10_rE 10_rE 00_rF 00_rH 00_rH 00_r-2.0.11.11_X4_ 75_r_2.0.11.11_X4_ 00_rB 10_EVE_rB 15_EVE_rB 15_EVE_rA 15_EVE_rA 20_EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA EVE_rA



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 Po	ower - System I	Monitor v2.0.3.11													×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Check	dist F	irmwar	Connected	to: BCM 1C	2 ~
	S	etting	D	efault Value/Thresh	old			Value			Result	<b>^</b> 9204	10_FACSET_X48_F)	(_630_EVE_rD	Ŷ
Package	e Version		9204	10_FACSET_X48_	FX_630_E							Cha	nge Bcm Id		
CAN ID			N/A									(0)	1C2 () 102		
Firmware	9		2.0.1	2.5		1						0	112 0 122		
Board Te	emperature (	F)	140												
Pack Ca	pacity (Ah)		567									E	actory Sattings		
Pack Ty	ре		X48										Kungo		
Charger	Туре		Man	ual									Validata		
Parasitic	Drain (mA)		122										Validate		
Top Off (	Cell Voltage		3.43												
Max Cell	Voltage		3.60												
Balance	Voltage		3.55										Print		
100% SC	OC Cell Volta	ge	3.42												
Warning	Cell Voltage		2.95										Save As		
0% SOC	Cell Voltage		2.80												
Latch 0 S	SOC on Low \	/oltage	0										alidation Enabled		
Sensor F	olarity		Reve	ersed								Tes	t External CAN		
Transdu	cer Value		500									0x7	30: N/A		
Ignore C	urrent Level (	A)	2										CL 1		
Sleep M	ode		Enab	oled									Спеск		
Sleep M	ode Voltage		3.20												
Sleep M	ode Timeout	Below (min)	2400	0											
Sleep M	ode Timeout	Above (min)	4320	0											
Thermal	Calibration C	Offset Tolerance	8												
Buzzer D	ouration (min)		60												
BuzzorS	ound Evon	(coc)	15									~			

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 <u>support@fluxpower.com</u> 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.)

Flux Powe	er - System N	Ionitor v2.0.3.11												>
Main	BMS	Controller	Analysis	Connect	on Co	S Tests	Temperature	Admin	Qua	ntum	QA Checkli	st Firmware	Connected to:	BCM 1C2 v
		Current	Firmware: 2	.0.6.4			Boootloader FW	Bo	otloader	Firmware	:: N/A			
01 1 3 4		Step		_	Attempts	Status	Firmware	Version		Resto	ore/Save Sett	tings Manually	) in	
02. Opening 03. Selecting	CAN Node Rash Memor	v Page 1					Select a Fir	mware			apacity		le	
04. Erasing F 05. Blank-Ch	lash Memory ecking Flash I	Memory Page 1					2.0.6.4 1C2	mware	Ð		emperature C	Compensations	5	
06. Programn 07. Selecting	ning Flash Mei I Flash Memor	mory Page 1 y Page 2					2.0.4.12 10 2.0.12.5 10	2	- Land		ref	g Amphours		
08. Blank-Ch 09. Programn	ecking Flash I ning Flash Me	Memory Page 2 mory Page 2					2.0.11.3 10	2 C2		Mes	sage Interval	(ms) 100 🖨		
10. Selecting 11. Erasing E	EEPROM	20.76.9					920401_	FACSI ~	1		Restore	Settings		
12. Blank-Ch 13. Programn	ecking EEPR ning EEPRON	ом I					Upd	late			Save	Settings		
14. Entering t 15. Restoring	to Application the BCM Set	Mode tings					Car	ncel		Re	store 1FF to 1C2			



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 **<u>UNCHECKED</u>**. Select Update once they are set properly.

Flux Powe	er - System N	Monitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connect	ion CC	S Tests	Temperature	Admin	Quantum	QA Checkli	st Firmware	Connected to:	BCM 1C2 v
		Current	Firmware: 2	2.0.6.4			Boootloader FW	Boo	otloader Firmwa	ne:N/A			
01. Initializin 02. Opening	g CAN Node	Step			Attempts	Status	Firmware Firmware V	ersion	Res	tore/Save Sett Serial No. Capacity	tings Manually	)rain e	
03. Selectin 04. Erasing 05. Blank-Cl 06. Program	g Flash Memo Flash Memory necking Flash ming Flash M	ny Page 1 Memory Page 1 emory Page 1					Retry CAN	Node 2 🗘 7F		Transducer Temperature C Total Chg/Dch	Histogram compensations g Amphours	s	
07. Selectin 08. Blank-Cl	g Flash Memo necking Flash	ny Page 2 Memory Page 2					BDI Inter	nal Set	□ \ Me	Vref ssage Interval	(ms) 100 🛓		
10. Selectin 11. Erasing	ming Flash M g EEPROM EEPROM	emory Page 2					920401_F/	ACSI ~		Restore	Settings		
12. Blank-Cl 13. Program	mecking EEPF	ROM M					Upga	ite		Save	Settings		
14. Entering 15. Restorin	to Application g the BCM Se	n Mode ettings					Cano	el		Restore 1FF to 1C2			

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.

Copen						×
$\leftarrow$ $\rightarrow$ $\sim$ $\uparrow$ $\square$ $\rightarrow$ This PC $\rightarrow$ V	Vindows	(C:) → log_data →	~	Ō	✓ Search log_data	
Organize 👻 New folder						0
Xtra Stuff	^	Name			Date	Ty ^
🛄 This PC		OLD monitor logs			6/9/2021 11:36 AM	Fil
3D Objects		debug			3/23/2021 1:30 PM	Fil
		LiftPackFirmwareSettings_2.	0.6.4_2017	307	11/28/2022 4:41 PM	JS
		LiftPackFirmwareSettings_2.	0.6.4_2017	520	11/28/2022 4:13 PM	JS
Documents		LiftPackFirmwareSettings_2.	0.6.4_2017	526	11/28/2022 3:46 PM	JS
		LiftPackFirmwareSettings_2.	0.6.4_2017	840	11/28/2022 3:20 PM	JS
Music		LiftPackFirmwareSettings_2.	0.6.4_2017	309	11/28/2022 2:54 PM	JS
E Pictures		LiftPackFirmwareSettings_2.	0.6.4_2017	306	11/28/2022 2:29 PM	JS
Videos		LiftPackFirmwareSettings_2.	0.6.4_2014	981	11/28/2022 2:04 PM	JS
Windows (C:)		LiftPackFirmwareSettings_2.	0.6.4_2017	536	11/28/2022 1:34 PM	JS
Engineering (E:)		LiftPackFirmwareSettings_2.	0.6.4_2014	980	11/28/2022 1:02 PM	JS
- Motwork	~ <	I iftPackFirmwareSettings 2	0 6 4 2017	RUNK	11/28/2022 12-29 PM	>
File name:				~	JSON File (*.json)	~
					Open Cance	8

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.)

Flux Pov	ver - System I	Monitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connection	ccs	Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to	: BCM 1C2 ~
	5	Setting	D	efault Value/Thresh	old			Value		F	Result		
											32040 92040 92040 92040 92040 92040 92041 92041 92041 92041 92041 92041 92041 92041 92044 92046 92046 92046 92046 92046 92046 92046 92045 92055	I_FACSET_S8_BMS2_ J_FACSET_S8_BMS2_ J_FACSET_S8_BMS2_ J_FACSET_S8_BMS2_ J_FACSET_S8_BMS2_ J_FACSET_S8_BMS2_ J_FACSET_S8_BMS2_ J_FACSET_M38_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_M36_FX_6 J_FACSET_S8_FX_72 J_FACSET_S8_FX_10 J_FACSET_S8_VF_10 J_FACSET_S8_V	FX_72_r6 FX_100_r6 FX_100_r6 VF_100_r6 VF_100_r6 VF_100_r6 00_r7 0



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 Po	ower - System	Monitor v2.0.3.11													×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checkli	st Fi	rmware	Connected	to: BCM 1C2	~
	5	Setting	D	efault Value/Thresh	old			Value			Result	920410	_FACSET_X48_FX	_630_EVE_rD	~
Package	e Version		9204	10_FACSET_X48_	FX_630_E							Chang	ge Bom Id		
CAN ID			N/A									(10) 10	2 102		
Firmware	9		2.0.1	2.5								0.11	2 0 122		
Board Te	emperature	(F)	140									0.11	2 0 122		
Pack Ca	pacity (Ah)		567									Fac	ton Gattings		
Pack Ty	pe		X48									- ac	tory seconds		
Charger	Туре		Man	ual									Malidate		
Parasitic	Drain (mA)		122										Validate		
Top Off (	Cell Voltage		3.43												
Max Cell	Voltage		3.60												
Balance	Voltage		3.55										Print		
100% SC	OC Cell Volta	ige	3.42												
Warning	Cell Voltage	9	2.95									5	Save As		
0% SOC	Cell Voltage	9	2.80									-			
Latch 0 S	SOC on Low	Voltage	0									⊡ Val	idation Enabled		
Sensor F	olarity		Reve	ersed								Test E	External CAN		
Transdu	cer Value		500									0x73	0: N/A		
Ignore C	urrent Level	(A)	2										a 1		
Sleep M	ode		Enab	oled									Спеск		
Sleep M	ode Voltage	1	3.20												
Sleep M	ode Timeou	t Below (min)	2400	0											
Sleep M	ode Timeou	t Above (min)	4320	0											
Thermal	Calibration (	Offset Tolerance	8												
Buzzer D	ouration (min)	)	60												
BuzzorS	ound Evon	(coc)	15									~			

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.

ain	BMS	Controller	Analysis	Connectio	n CCS	Tests	Temperature	Admin	Quantum	QA Checklis	t Firmware	Connected to:	BCN
		Current	Firmware: 2	0.12.5			Boootloader FW	Boo	tloader Firmwa	are: N/A			BCN BCN
11. Initializin	ng	Step		1	ttempts	Status	Firmware Firmware	Version	Res	store/Save Setti Serial No.	ings Manually	Drain	BCM
2. Opening 3. Selectin 4. Erasing	g CAN Node ng Flash Memo Flash Memory	ory Page 1					Select a Fir	mware v N Node		Capacity Transducer Temperature C	Sleep Moo	de 1s	
5. Blank-Ch 6. Program 7. Selection	hecking Flash ming Flash M ng Flash Memo	Memory Page 1 emory Page 1					20 🐳 10	C2 <mark>÷</mark> 7F rnal		Total Chg/Dchg Vref	Amphours	,	
8. Blank-Cl 9. Program	hecking Flash nming Flash M	Memory Page 2 emory Page 2					Factory	Set	Me	essage Interval	(ms) 100 🛟		
0. Selectin 1. Erasing	g EEPROM EEPROM						920401_1	FACSI ~		Restore	Settings		
2. Blank-Cl 3. Program	hecking EEPI ming EEPRO	ROM M					Upd	ate		Save S	ettings		
<ol> <li>Entering</li> <li>Restorin</li> </ol>	ng the BCM Se	ettings					Can	cel		Restore 1FF to 1C2			





12) 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.

Flux Pov	ver - System	Monitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connection	ccs	Tests	Temperature	Admin	Quantum	QA Checklist	Firm	ware Connected	to: BCM 102 🗸
	S	Setting	D	efault Value/Thresh	old	ĺ).		Value		1	Result		Y
												Change Bom Id ○ 1C2 ● 102 ○ 112 ○ 122 Factory Settings Validate Print Save As Validation Enabled Test External CAN 0x730: Check	

13) 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.

lain BMS Controller Analysis C	onnection CCS	Tests Temperature Admin Qua	antum QA Checklist Firmware Connected to:
Current Firmware: 2.0.1	2.5	Boootloader FW Bootloader	er Firmware: N/A
Step 1. Initializing 2. Opening CAN Node 3. Selecting Flash Memory Page 1 4. Erasing Flash Memory Page 1 6. Programming Flash Memory Page 1 7. Selecting Flash Memory Page 2 8. Blank-Checking Flash Memory Page 2	Attempts St	tatus       Firmware         Firmware Version         Select a Firmware         Retry       CAN Node         20 ÷       1C2÷       7F ÷         Ø BDI Internal         Factory Set	Restore/Save Settings Manually         Serial No.       Parasitic Drain         Capacity       Sleep Mode         Transducor       Histograms         Temperature Compensations       Total Chg/Dchg Amphours         Vref       Message Interval (ms)
Programming Flash Memory Page 2     Programming Flash Memory Page 2     Selecting EEPROM     Blank-Checking EEPROM     Programming EEPROM     Ertering to Application Mode     Entering to Application Mode		920401_FACSI ~ Update Cancel	Restore Settings Save Settings



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.

ain E	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checklist	Firmwar	e Connected to: BCI	M 112
	Se	atting	De	efault Value/Thresho	bld			Value			Result		_
											Cha ○ ● F □ V Tes 0x7	nge Bom Id 1C2 () 102 112 () 122 actory Settings Validate Print Save As Validation Enabled t External CAN T30: 16.05 Check	

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 <u>support@fluxpower.com</u> the Serial Number of the battery, and the new Firmware put on it.



## 7 X-Series (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.



POWER

3) Select the Firmware Tab highlighted below.



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 Po	wer - GSE Pa	ck 12.12 v1.1.0.1	3											$\times$
Main	Blade	Charger	Analysis	Connection	ccs	Temper	ature	Admin	Quantum	QA Checklist	Firmware	Board Tester	Connected to:	1C2 ~
			Curren	t Firmware: N	/A									
			Step				Attempts	Status	Firmware					
01. Initialia	zing								Select a F	irmware 🗸				
02. Openi	ng CAN Node													
03. Select	ting Flash Mem	ory Page 1							Retry					
04. Erasin	g Flash Memor	у							20 🛟					
05. Blank	Checking Flas	h Memory Page 1												
06. Progra	amming Flash M	lemory Page 1												
08. Select	ting Flash Mem	ory Page 2												
09. Blank	-Checking Flas	h Memory Page 2	2											
10. Progra	amming Flash M	lemory Page 2												
11. Select	ting EEPROM													
12. Erasin	g EEPROM													
13. Blank	Checking EEP	ROM							Upo	late				
14. Progra	amming EEPRC	M												
15. Enteri	ng to Applicatio	n Mode							Car	ncel				
16. Loadir	ng the BCM Se	ttings												



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.

SM Open						×
$\leftarrow \rightarrow \neg \uparrow$ $\blacksquare$ > This PC > V	Vindows	(C:) → log_data →	~	õ	○ Search log_data	
Organize 🔻 New folder					III • 🛄	?
🔜 Xtra Stuff	^	Name			Date	Ty ^
This PC		OLD monitor logs			6/9/2021 11:36 AM	Fil
3D Objects		📙 debug			3/23/2021 1:30 PM	Fil
Beskton		LiftPackFirmwareSettings_2	.0.6.4_2017	307	11/28/2022 4:41 PM	JS
		LiftPackFirmwareSettings_2	.0.6.4_2017	520	11/28/2022 4:13 PM	JS
Documents		LiftPackFirmwareSettings_2	.0.6.4_2017	526	11/28/2022 3:46 PM	JS
		LiftPackFirmwareSettings_2	.0.6.4_2017	840	11/28/2022 3:20 PM	JS
J Music		LiftPackFirmwareSettings_2	.0.6.4_2017	309	11/28/2022 2:54 PM	JS
E Pictures		LiftPackFirmwareSettings_2	.0.6.4_2017	306	11/28/2022 2:29 PM	JS
🔗 Videos		LiftPackFirmwareSettings_2	.0.6.4_2014	981	11/28/2022 2:04 PM	JS
Windows (C:)		LiftPackFirmwareSettings_2	.0.6.4_2017	536	11/28/2022 1:34 PM	JS
Engineering (F:)		LiftPackFirmwareSettings_2	.0.6.4_2014	980	11/28/2022 1:02 PM	JS
A blabwark	<b>v</b> .	liftPackFirmwareSettings 2	064 2017	202	11/28/2022 12-29 PM	>
File name:				~	JSON File (*.json)	~
					Open Cance	

- 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 Pov	ver - GSE Pa	ck 12.12 v1.1.0.1	3										×
Main	Blade	Charger	Analysis	Connection	ccs	Temperature	Admin	Quantum	QA Checklist	Firmware	Board Tester	Connected to:	1C2 ~
		Setting		Default Va	alue/Thre	shold		Val	lue		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 Po	wer - GSE Pa	ck 12.12 v1.1.0.1	3										×
Main	Blade	Charger	Analysis	Connection	CCS	Temperatu	re Admin	Quantum	QA Checklist	Firmware	<b>Board Tester</b>	Connected to:	1C2 ~
		Setting	·	Default Va	alue/Thre	shold		Val	lue		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 <u>support@fluxpower.com</u> the Serial Number of the battery, and the new Firmware put on it.



## 8 X-Series (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.

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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.)

Flux Pov	ver - System	Monitor v2.0.3.11													×
Main	BMS	Controller	Analysis	Connect	on CC	S Tests	Temperature	Admin	Qua	ntum	QA Checklist	Firmware	Connected to:	BCM 1C2	~
		Current	Firmware: 2	2.0.6.4			Boootloader FW	Bo	otloader	Firmware	: N/A				
01. Initializi 02. Openin 03. Selectir 04. Erasing 05. Blank-C 06. Program 07. Selectir 08. Blank-C 09. Program 10. Selectir	ng g CAN Node ng Rash Memon Thecking Rash mming Rash Memu Checking Rash mming Rash Memu Checking Rash mming Rash M ng EEPROM	Step			Attempts	Status	Firmware Firmware Select a Fi 2.0.6.4 102 2.0.5.4 102 2.0.5.10 2.0.4.12 10 2.0.4.12 10 2.0.12.5 10 2.0.11.3 10 2.0.11.11 1 920401_	Version rmware 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	•	Resto Se Ca Tr Tr Tr Vr Mess	pre/Save Settin prial No. apacity ansducer properature Co otal Chg/Dchg of sage Interval ( Restore 3	ngs Manually Parasitic D Sleep Mod Histograms Inpensations Amphours ms) 100 ‡ Settings	brain e S		
12. Blank-C 13. Program	Checking EEP	ROM					Upo	late			Save S	ettings			
14. Enterin 15. Restori	g to Applicatio ng the BCM S	n Mode ettings					Car	ncel		Re	store 1FF to 1C2	1			



5) Make sure the BDI Internal and Factory Setting checkboxes are **<u>UNCHECKED</u>**, and then select Update.

Flux Pow	ver - System N	Monitor v2.0.3.11											>
Main	BMS	Controller	Analysis	Connectio	n CCS	Tests	Temperature	Admin	Quantum	QA Checklis	st Firmware	Connected to:	BCM 1C2 v
		Current	Firmware: 2	2.0.6.4			Boootloader FW	Bo	otloader Firmwa	re: N/A			
01. Initializ 02. Openin 03. Selecti 04. Erasing 05. Blank 4 06. Program 07. Selecti 08. Blank 4 09. Program 10. Selecti 11. Erasing 12. Blank 4	ng Ig CAN Node ng Rash Memoy Checking Rash Memoy Checking Rash Memory Checking Rash Memory Checking Rash Memory EEPROM Checking EEPI Memory Checking EEPI Memory Checking EEPI Memory Checking Rash	Step any Page 1 / Memory Page 1 emory Page 1 any Page 2 emory Page 1 Memory Page 2 emory Page 1 Memory Page 1 emory Page 1 any Page 2 emory Page 3 emory Page 3 emory Page 4 emory			Attempts	Status	Firmware Firmware 2.0.12.5 10 Retry CA 20 1 1 BDI Inte Factory 920401_ Up;	Version 22 V N Node C2 7 7F ormal Set FACSI V [ate	Res 	tore/Save Setti Serial No. Capacity Fransducer Femperature C Total Chg/Dchg /ref ssage Interval Restore Save S	ings Manually Parasitic D Sleep Mod Histogram ompensations Amphours (ms) 100  Settings Settings	Drain le s	
14. Enterin 15. Restori	g to Application ing the BCM Se	n Mode ettings					Car	ncel	F	Restore 1FF to 1C2			

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.

Copen						×
$\leftarrow$ $\rightarrow$ $\sim$ $\uparrow$ $\square$ $\rightarrow$ This PC $\rightarrow$ V	Vindows (	C:) → log_data →	~	Ō	○ Search log_data	
Organize 🔻 New folder						?
Xtra Stuff	^	Name			Date	Ту ^
🛄 This PC		OLD monitor logs			6/9/2021 11:36 AM	Fil
3D Objects		ebug			3/23/2021 1:30 PM	Fil
Derkton		LiftPackFirmwareSettings_2	.0.6.4_2017	307	11/28/2022 4:41 PM	JS
Desktop		LiftPackFirmwareSettings_2	.0.6.4_2017	520	11/28/2022 4:13 PM	JS
Documents		LiftPackFirmwareSettings_2	.0.6.4_2017	526	11/28/2022 3:46 PM	JS
🔶 Downloads		LiftPackFirmwareSettings_2	.0.6.4_2017	840	11/28/2022 3:20 PM	JS
Music		LiftPackFirmwareSettings_2	.0.6.4_2017	309	11/28/2022 2:54 PM	JS
E Pictures		LiftPackFirmwareSettings_2	.0.6.4_2017	306	11/28/2022 2:29 PM	JS
📕 Videos		LiftPackFirmwareSettings_2	.0.6.4_2014	981	11/28/2022 2:04 PM	JS
Windows (C:)		LiftPackFirmwareSettings_2	.0.6.4_2017	536	11/28/2022 1:34 PM	JS
Engineering (E:)		LiftPackFirmwareSettings_2	.0.6.4_2014	980	11/28/2022 1:02 PM	JS
		I iftPackFirmwareSettings	064 2017	รกร	11/28/2022 12-29 PM	IC ¥
- Matuada	v <				-	>
File name:				~	JSON File (*.json)	~
					Open Cance	el

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.)

Flux Pov	ver - System I	Monitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to	: BCM 1C2 🗸
	s	Setting	D	efault Value/Thresh	old			Value		F	Result		
											82040 92040 92040 92040 92040 92040 92041 92041 92041 92041 92041 92041 92041 92041 92041 92044 92046 92046 92046 92046 92046 92046 92045 92055	1_FACSET_S8_BMS2_ 2_FACSET_S8_BMS2_ 3_FACSET_S8_BMS2_ 5_FACSET_S8_BMS2_ 5_FACSET_S8_BMS2_ 5_FACSET_S8_BMS2_ 9_FACSET_X88_FX_60_ 0_FACSET_X48_FX_60_ 0_FACSET_X48_FX_60_ 0_FACSET_X48_FX_60_ 5_FACSET_M35_FX_6_ 1_FACSET_M35_FX_6_ 1_FACSET_M35_FX_6_ 5_FACSET_M24_FX_4 8_FACSET_M24_FX_4 5_FACSET_M24_FX_4 5_FACSET_M24_FX_4 5_FACSET_M35_FX_62_FX_72_ 1_FACSET_S8_FX_72_ 1_FACSET_S8_FX_72_ 1_FACSET_S8_FX_103_ 5_FACSET_S8_FX_103_ 5_FACSET_S8_FX_103_ 5_FACSET_S8_FX_103_ 5_FACSET_S8_VF_104_\\ 5_FACSET_S8_VF_104_\\ 5_FACSET_S8_VF_104_\\ 5_FACSET_S8_VF_104_\\ 5_FACSET_S8_VF_104_\\ 5_FACSET_S8_VF_104_\\ 5_FACSET_S8_VF_104_\\ 5_FACSET_S8_VF_104_\\ 5_FACSE	FX_72_r8 FX_100_r8 FX_100_r8 VF_100_r8 VF_100_r8 VF_100_r8 00_r6 00_r6 00_r6 00_r7 0



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 Po	wer - System	Monitor v2.0.3.11													$\times$
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checkli	ist F	irmware	Connected	I to: BCM 1C2	2 ~
	5	Setting	D	efault Value/Thresh	old			Value			Result	<b>^</b> 92041	0_FACSET_X48_F	X_630_EVE_rD	~
Package	e Version		9204	10_FACSET_X48_	FX_630_E							Char	ige Bcm Id		
CAN ID			N/A									(ii) 1	C2 () 102		
Firmware	2		2.0.1	2.5								01	12 0 122		
Board Te	emperature	(F)	140										12 0 122		
Pack Ca	pacity (Ah)		567									Fa	ctony Gattings		
Pack Ty	pe		X48									10	citory Runigs		
Charger	Туре		Man	ual									Validata		
Parasitic	Drain (mA)		122										valiuare		
Top Off (	Cell Voltage		3.43												
Max Cell	Voltage		3.60												
Balance	Voltage		3.55										Print		
100% SC	C Cell Volta	ige	3.42												
Warning	Cell Voltage	9	2.95										Save As		
0% SOC	Cell Voltage	9	2.80										N		
Latch 0 S	OC on Low	Voltage	0										alidation Enabled		
Sensor F	olarity		Rev	ersed								Test	External CAN		
Transdu	cer Value		500									0x7	30: N/A		
Ignore C	urrent Level	(A)	2									I I	Charle		
Sleep M	ode		Enat	oled									Check		
Sleep M	ode Voltage	1	3.20												
Sleep M	ode Timeou	t Below (min)	2400	0											
Sleep M	ode Timeou	t Above (min)	4320	0											
Thermal	Calibration (	Offset Tolerance	8												
Buzzer D	uration (min)	)	60									1.11			
BuzzorS	ound Evon	(coc)	15			12						~			

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.

in	BMS	Controller	Analysis	Connectio	n CCS	Tests	Temperature	Admin	Quantum	QA Checklis	t Firmware	Connected to:
		Current	Firmware: 2.	0.12.5			Boootloader FW	Boo	otloader Firmward	e: N/A		
. Initializing 2. Opening 3. Selecting	g CAN Node g Flash Memo	Step wy Page 1			Attempts	Status	Firmware Firmware Select a Fir	Version mware v	Rest	ore/Save Setti erial No. apacity ransducer	ngs Manually  Parasitic [ Sleep Mod Histogram	Drain le s
<ol> <li>Erasing H</li> <li>Blank-Ch</li> <li>Programm</li> <li>Selecting</li> <li>Blank-Ch</li> <li>Blank-Ch</li> <li>Programm</li> </ol>	Flash Memory hecking Flash ming Flash M g Flash Memo hecking Flash ming Flash M	Memory Page 1 emory Page 1 ny Page 2 Memory Page 2 emory Page 2					20 € 10 Ø BDI Inte □ Factory	C2 ⊕ 7F ornal Set	€ T □ T □ V Mes	emperature C otal Chg/Dchg ref ssage Interval	ompensations Amphours (ms) 100 +	
0. Selecting 1. Erasing B 2. Blank-Ch	g EEPROM EEPROM hecking EEPI	ROM					920401_I	FACSI ~		Restore	Settings	
<ol> <li>Programming</li> <li>Entering</li> <li>Restoring</li> </ol>	to Application g the BCM Se	n Mode ettings				_	Car	icel			oung5	



POWER 12) 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.

Flux Pov	ver - System	Monitor v2.0.3.11											×
Main	BMS	Controller	Analysis	Connection	ccs	Tests	Temperature	Admin	Quantum	QA Checklist	Firm	ware Connected	to: BCM 102 ~
	S	Setting	D	efault Value/Thresh	old	ĺ).		Value		1	Result		Y
												Change Bom Id ○ 1C2 ● 102 ○ 112 ○ 122 Factory Settings Validate Print Save As Validation Enabled Test External CAN 0x730: Check	

13) 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.

lain BMS Controller Analysis Co	nnection CCS	Tests	Temperature Admin Qu	antum QA Checklist Firmware Connected to	BCM
Current Firmware: 2.0.12	2.5		Boootloader FW Bootloade	er Firmware: N/A	BCM BCM
Step 1. Initializing 2. Opening CAN Node 3. Selecting Rash Memory Page 1 4. Erasing Rash Memory 5. Blank-Checking Rash Memory Page 1 6. Programming Rash Memory Page 1 6. Programming Rash Memory Page 1	Attempts	Status	Firmware       Firmware Version       Select a Firmware       Retry       CAN Node       20 \$\overlinety       1C2 \$\overlinety	Restore/Save Settings Manually         Serial No.       Parasitic Drain         Capacity       Sleep Mode         Transducer       Histograms         Temperature Compensations       Total Chg/Dchg Amphours	BCM
7. Selecting Flash Memory Page 2 1. Blank-Checking Flash Memory Page 2 1. Programming Flash Memory Page 2			BDI Internal Factory Set	Vref Message Interval (ms) 100 ≑	
). Selecting EEPROM 1. Erasing EEPROM			920401_FACSI ~	Restore Settings	
2. Blank-Checking EEPROM 3. Programming EEPROM			Update	Save Settings	
4. Entering to Application Mode 5. Restoring the BCM Settings			Cancel		



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.

🖌 Flux Pow	er - System I	Monitor v2.0.3.11											>
Main	BMS	Controller	Analysis	Connect	on CC	S Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to:	BCM 102
		Current	Firmware: 2	0.12.5			Boootloader FW	Bo	otloader Firmwa	re: N/A			BCM 102 BCM 112 BCM 122 BCM 122
01. Initialize 02. Opening 03. Selectir 04. Erasing 05. Blank-C 06. Program 08. Blank-C 09. Program 10. Selectir 11. Erasing 12. Blank-C 13. Program	g CAN Node g CAN Node ig Rash Memor Rash Memor hecking Rash ming Rash Memor hecking Rash ming Rash M ig EEPROM EEPROM hecking EEP iming EEPROM	Step ory Page 1 y 1 Memory Page 1 lemory Page 2 Memory Page 2 lemory Page 2 ROM			Attempts	Status	Firmware Firmware Select a Fi Retry CA 20 \$ 1 Ø BDI Inte Factory 920401_ Upp	Version rmware ~ N Node C2 7 F ormal r Set FACSI ~ date	Res	tore/Save Settin Serial No. Capacity Transducer Temperature Co Total Chg/Dchg Vref ssage Interval ( Restore S Save So	ngs Manually Parasitic I Sleep Moc Histogram mpensations Amphours ms) 100 Settings	Drain de is	BCM 3FF
14. Entering 15. Restorir	to Application the BCM Se	n Mode ettings					Car	ncel		Restore 1FF to 1C2	1		



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.

Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checklist	Firn	nware	Connected t	BCM 122	~
	S	etting	De	efault Value/Thresh	bld			Value			Result				1
												Change ○ 1C2 ○ 112 Factor V Sa Sa V Valid Test Ex 0x730	Bom Id 0 102 0 122 ry Settings alidate Print ve As ation Enabled temal CAN Check		

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 <u>support@fluxpower.com</u> 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.



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 Po	wer - GSE Pa	ck 12.12 v1.1.0.1	3											×
Main	Blade	Charger	Analysis	Connection	ccs	Temper	ature	Admin	Quantum	QA Checklist	Firmware	Board Tester	Connected to:	1C2 ~
			Curren	t Firmware: N	/A									
			Step				Attempts	Status	Firmware					
01. Initialia	ing								Select a F	ïrmware 🗸				
02. Openi	ng CAN Node								Data					
03. Select	ing Flash Mem	ory Page 1							Retry					
04. Erasin	g Flash Memor	у							20 🗧					
05. Blank-	Checking Flas	h Memory Page 1												
06. Progra	mming Flash M	lemory Page 1												
08. Select	ing Flash Mem	ory Page 2												
09. Blank-	Checking Flas	h Memory Page 2												
10. Progra	mming Flash M	lemory Page 2												
11. Select	ing EEPROM													
12. Erasin	g EEPROM													
13. Blank-	Checking EEP	ROM							Upo	late				
14. Progra	mming EEPRC	M												
15. Enterir	ng to Applicatio	n Mode							Car	ncel				
16. Loadir	g the BCM Se	ttings												



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.

St Open						×
$\leftrightarrow$ $\rightarrow$ $\uparrow$ $\uparrow$ $\blacksquare$ $\Rightarrow$ This PC $\Rightarrow$ $\uparrow$	Windows (	C:) → log_data →	~	ō	,○ Search log_data	
Organize 👻 New folder					III • 🛄	0
🔜 Xtra Stuff	^	Name			Date	Ty ^
This PC		OLD monitor logs			6/9/2021 11:36 AM	Fil
3D Objects		debug			3/23/2021 1:30 PM	Fil
Beskton		LiftPackFirmwareSetting	s_2.0.6.4_2017	307	11/28/2022 4:41 PM	JS
Pesktop		LiftPackFirmwareSettings	s_2.0.6.4_2017	520	11/28/2022 4:13 PM	JS
		LiftPackFirmwareSettings	s_2.0.6.4_2017	526	11/28/2022 3:46 PM	JS
		LiftPackFirmwareSettings	s_2.0.6.4_2017	840	11/28/2022 3:20 PM	JS
J Music		LiftPackFirmwareSettings	s_2.0.6.4_2017	309	11/28/2022 2:54 PM	JS
E Pictures		LiftPackFirmwareSettings	s_2.0.6.4_2017	306	11/28/2022 2:29 PM	JS
🗑 Videos		LiftPackFirmwareSetting:	s_2.0.6.4_2014	981	11/28/2022 2:04 PM	JS
Windows (C:)		LiftPackFirmwareSettings	s_2.0.6.4_2017	536	11/28/2022 1:34 PM	JS
Engineering (E:)		LiftPackFirmwareSettings	s_2.0.6.4_2014	980	11/28/2022 1:02 PM	JS
A Notwork	~ <	LiftPackFirmwareSetting	2064 2017	202	11/28/2022 12-29 PM	>
File name:				~	JSON File (*.json)	~
					Open Cance	ł

- 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 Po	ower - GSE Pa	ck 12.12 v1.1.0.1	3										×
Main	Blade	Charger	Analysis	Connection	ccs	Temperature	Admin	Quantum	QA Checklist	Firmware	Board Tester	Connected to:	1C2 ~
		Setting		Default Va	alue/Thre	shold		Va	lue		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 Po	wer - GSE Pa	ck 12.12 v1.1.0.1	3										×
Main	Blade	Charger	Analysis	Connection	CCS	Temperature	Admin	Quantum	QA Checklist	Firmware	Board Tester	Connected to:	1C2 ~
		Setting		Default Va	lue/Threa	shold		Valu	ue		Result		~
												Factory Settings	
												Validate	
												Drint	
												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 <u>support@fluxpower.com</u> 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: <u>Support@fluxpower.com</u> Web: <u>www.fluxpower.com</u> Web: <u>www.fluxpower.com</u> 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 <u>https://www.fluxpower.com/support</u>.
- 2) The select the 'Click Here' button under the Product Technical Information
  - a. If you are prompted to enter a password, type <u>flux4all</u> 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.
  - 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.

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

Х

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

#### PEAK-Drivers 4.1.2 Setup





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 >".



Click on the icons in the tree below to change the way features will be installed.

CAN device drivers Virtual PCAN-Gateway LIN device driver Virtual PCAN driver PCAN-Basic	Application programming interface for PCAN devices This feature requires 2KB on your hard drive.
Will be installed on local hard	drive
Entire feature will be installed	on local hard drive
× Entire feature will be unavaila	ble
	Browse
Reset Disk Usage <	Back Next > Cancel



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





## 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	ТВА
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	ТВА
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.

🚮 Flux Powe	er - System M	lonitor v2.0.3.11										×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	n QA Checklist	Firmware	Connected to: BCM 1C2 V
Control Panel	Settings											
Controller Se	ttings	- 10		Pack Status				Main Contactor		EWS Settings		Node Dropoff Tracker
Re	ad Values	Test Fr	amework	Pack Voltage		53.44 V		Manual Mode	Closed	EWS State -	Waiting	BMS 102
		100111	different	State of Charge		33 %		Close	Open	Integrity Signal Prese	nut - True	1 BMS 112
Serial No.	0	<b>2017307</b>				400.00.4		Cycle Count: 5		EWS Timer -	0 ms	2 BMS 122
Pack Type	~	C48		Remaining Cap	acity	189.90 A				Mode -	Disabled	Internal BDI
Node Type		TwoNode		Max D/Chg SOC	Time	0 hrs	c	harge Relay	_	🗹 Integrity Signal	- Enabled	
node type		Tworvoue		Zero Current	-0.60		K 11 [	Manual Mode	Open	Timeout 10 🚖	10 s	
Pack Capac	ity 100 5	67 Ah Parasitic Dra	in /0 122 m/	2010 Gallerit	0.001	TEM	P 61 F	Close	Open	Debounce 2.00 🜩	3.00 s	External BDI
Bmsm Count	1 💠 2	Slave Nodes	s 0 💠 1	Set SoC (%) 10	-		A	C: OFF Output	Voltage: 0.00	Shutdown 0 💠	0 ms	EV ARC

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.

Flux Powe	er - System Mor	itor v2.0.3.11										×
Main	BMS (	Controller	Analysis	Connection	ccs	Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to: BCM 1C2 V
Control Panel	Settings											
Controller Settings Read Values Senal No. 0	2017307 X48	ramework	Pack Status Pack Voltage State of Charge Remaining Capa	acity	53.42 V 33 % 189.90 Ah 0 W	h OW G	in Contactor Manual Mode Close vcle Count: 5	Closed Open	EWS State - Wating Integrity Signal Present - True EWS Timer - Oms Mode - Enabled	Waiting nat - True 0 ms Enabled	Node Dropoff Tracker BMS 102 BMS 112 BMS 122 BMS 122	
Node Type Pack Capaci Bmsm Count	ty 100 567	<ul> <li>FourNode</li> <li>Ah Parasitic Dra Slave Nodes</li> </ul>	ain 70 122 m/ s 0 ‡ 3	Max D/Chg SOC Zero Current - Set SoC (%) 90	Time •0.50 A	0 hrs ID> TEMF	Ch.	arge Relay Manual Mode Close : OFF Output '	Open Open Voltage: 0.00	✓ Integrity Signal Timeout 10 Debounce 2.00 Shutdown 0	Enabled 10 s 3.00 s 0 ms	Internal BDI     CCS     External BDI     EV ARC

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.

👬 Flux Pow	ver - System M	Monitor v2.0.3.11											×
Main Control Panel	BMS Settings	Controller	Analysis	Connection	CCS	Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to: BCM 1C2	~
Controller Se	ettings ead Value	s Test Fi	amework	Pack Status Pack Voltage		53.43	/	lain Contactor ] Manual Mode Close	Closed	EWS Settings EWS State - Integrity Signal Prese	Waiting ent - True	Node Dropoff Tracker           0         BMS 102           1         BMS 112	

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@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 tursn 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.

Flux Powe	er - System Mo	onitor v2.0.3.11									×
Main	BMS	Controller	Analysis	Connection CCS	Tests	Temperature	Admin	Quantum	QA Checklist	Firmware	Connected to: BCM 1C2 ~
Control Panel	Settings						*				
Controller Se	ttings			Pack Status		Ma	in Contactor		EWS Settings		Node Dropoff Tracker
Re	ad Values	Test F	ramework	Pack Voltage	53.44 \		Manual Mode	Closed	EWS State -	Waiting	BMS 102
Serial No. Pack Type	0			State of Charge Remaining Capacity	33 % 189.90 A	4 0 W C	Close	Open	EWS Timer -	nnt - True 0 ms Disabled	BMS 112     BMS 122     Internal BDI
Node Type Pack Capac	ity 100 56	TwoNode	<b>iin</b> 70 122 m/	Max D/Chg SOC Time	0 hrs A ID TEM	Chi X 11 P 61 F	arge Relay Manual Mode Close	Open Open	✓ Integrity Signal Timeout 10 Debounce 2.00 ▲	- Enabled 10 s 3.00 s	CCS     External BDI
Bmsm Count	1 🗘 2	Slave Node	s 0 💠 1	Set SoC (%) 10 🚖		AC	: OFF Output	Voltage: 0.00	Shutdown 0	0 ms	6 EV ARC

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

👬 Flux Power - System Monitor v2.0.3.11													×
Main	BMS	Controller	Analysis	Connection	CCS	Tests	Temperatu	re Admin	Quantum	QA Checklist	Firmware	Connected to	BCM 1C2 🗸
Control Panel	Settings												
		LED SOC Tri	igger Level Settings	Sleep Settings				Dynamic Shunting		Charger Settings		_	
Rea	ad Values	LED 6	N/A	Sleep Mode Sleep	Enable	✓ Disa	abled	~ S	et N/A	Charger	~ N/A		
		LED 5	N/A	Voltage Threshold	3.2	0.0	D V	Shunt High Level	370 N/A				
Res	et Settings	LED 4	N/A	Timeout Above Th	reshold 432	20 🖨 0 M	lin	Shunt Low Level	355 N/A	Max Current 23.0		Set	
Reporting N	Node	LED 3	N/A	Timeout Below Thr	eshold 240	D 🖨 0 M	lin	Shunt Range	6 N/A	Max voltage 27.04			
On -	Disabled	LED 2	N/A	Timeout Counter:	0		in .	Shunt Normal Level	370 N/A	External CAN Msg	s - N/A		
Crown	N/A Se	t LED 1	N/A	Pack Status:	Pa	ck NOT In	Use	Shunt Offset	2 N/A	DeltaQ Ramp Curr      Euro Charge Profe	ent - N/A	0.0.4	
SOC Setting		Se	nd Settings	Wake Up		Send Se	ttings		Send Specs	Charger Detect Settin	1977	0.0 A	
Latch 0	SOC on Low Vo	oltage Current Prote	tion	Contactor Settings		-		Sliding Voltage Settin	gs	Detection Mode -	N/A		
Set	10 🖨	N/A 10s Threshol	<u>d:</u>	Ac L.Temp Ov	erride - N	/A		Low Temp 0% SO	C Override	Debounce Time 2.0	0 🖨 🛛 N	I/A	
SOC Warnin	ng (0 to disable)	Charge		Ac L.Volt Oven	ide-N	/A /A		Cutoff Values:		Detect Level 6.5	i0 🛋 🛛 🔊	I/A	
Set	10 🖨	N/A 1000	N/A Amps					At 30 F 2.16	♣ N/A V	Detect Polarity		1/0	
Software Po	ower Override	Discharge		Charge Contact     Dry Contact	tor - N	/A /A		At 38 F 2.32	♣ N/A V	Detect Foldity	r	VA.	
🗹 On -	Disabled	-1000	N/A Amps	Dry Temp 11	2 🛋 N	/A F		At 46 F 2.45	♣ N/A V	Ser	d Settings		
			C-4	Dig reliip	••••			At 54 F 2.56	🔶 N/A V				

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.

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