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LiFePO₄ – MPLHP-5125528 Battery System

Setup and Configuration Manual



NARADA POWER SOURCE CO., LTDEmail: ups@mpinarada.comWebsite: www.mpinarada.com

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Rev	Date	Change
1.0	5/09/2021	Initial release of V5.0 service tool

Included in this document are instructions for configuring the LiFePO4 MPLHP-5125528 Battery System.

Additionally, instructions for updating the BMS firmware are included, if required.

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Background:

- All LiFePO4 MPLHP-5125528 Battery Systems have a BMS system for control and protection functions
- The BMS consists of the following components
 - Control box contains rack level control and protection components including rack level BMS (BCU)
 - BCU rack level BMS component installed in Control Box
 - o BMU battery module level BMS component installed in each battery module
 - o BAU system level BMS component installed on door of rack/string #1
 - o HMI system level BMS user interface installed on door of rack/string #1

Required Materials:

- HMI password (contact MPINarada representative)
- BMSer software password (contact MPINarada representative)

No.	Items	Usage / notes	Appearance
1	Computer with BMSer software	Used to program battery ID	
2	New BAU/BCU/HMI software (files)	Software for battery system (Contact MPI Narada prior to arriving on site to confirm software version)	
3	USBCAN adapter	Plugs into computer and Control box SRV port (driver also needed on new computer)	
4	Small ladder	To reach upper battery modules & to rest Charger on if leads are too short	
5	50-foot extension cord (one or more)	Needed when for computer (might be needed)	

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Desc	ription / Title	e	MP	LHP-51	25528 Setup and Configuration Man	ual	
	6	"LiFePO4 NE System Installa	ESP Battery ation Manual"	Des &	cribes safety, PPE, battery removal, busbar torques referenced in this manual		

Summary of Configuration Steps:

To setup a system that has not been previously configured or tested, the following basic steps are required after the system has been full installed and assembled including all power and communication connections to the rack level control boxes and HMI/BAU.

- Depending on the configuration of the system the HMI may need to be updated (consult with MPINarada representative)
- Depending on the configuration of the system the BAU may need to be updated (consult with MPINarada representative)
- Depending on the configuration of the system the BCU's may need to be updated (consult with MPINarada representative)
- All control box BCU ID's must be set.
- All racks/strings must be enabled.

The procedures on the following pages describe the required steps for setting up the system.



- 1. **Configuration** The following are the required steps for configuring a system:
 - 1.1 Assign BCU and BMU ID's Each rack has a control box with circuit breaker and inputs for the battery string and outputs for connection to UPS/Inverter, the BCU BMS component is installed inside the control box.



Control Box with internally installed BCU

- 1.2 For every battery bank that consists of multiple strings, each BCU in the bank needs to be assigned a unique BCU ID.
- 1.3 BCU ID's start at 1 (the string which includes the BAU and HMI is #1) and increments by 1 for each additional string.





- 1.4 To assign a BCU ID the following steps should be followed:
 - 1.4.1 Connect to the Control Box using "SRV" port and "USBCAN II" box connected to PC/laptop via USB port.



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1.4.2 Ensure that the BMS is powered on (LED lights are lit)

- 1.4.3 The default BCU ID is "1". If this is the first rack/string in the system (with HMI and BAU), the BCU ID does not likely need to be changed.
- 1.4.4 Open the BMSer "BMS Terminal" V5.0.0

	Name	Status	Date modified	Туре	Size	
	ConfigFile	0	9/27/2023 11:30 PM	File folder		
	i kerneldlis	0	9/27/2023 9:58 PM	File folder		
	Cog	0	9/27/2023 9:58 PM	File folder		
	Resource	0	9/27/2023 9:58 PM	File folder		
i.	Bmser.Core.dll	0	7/14/2022 7:30 AM	Application extension		45 KB
L	Bmser.LuaTest.dll	0	7/14/2022 7:30 AM	Application extension		35 KB
L	II BmsTerminal	0	7/14/2022 7:30 AM	Application		598 KB
L	BmsTerminal.exe.config	0	5/13/2022 4:17 AM	CONFIG File		2 KB

1.4.5 Press **OpenCan** button

🚺 LoginWindo	W	_	
Battery	System Laguage: E	N▼ Software SE IBU	•
	CommType	Can 🔻	
	BaudRate	500K V	
	Index	0	
	Channel	0	
	DeviceType	VCI_USBCAN1	
	Oper	nCan	Home

- 1.4.6 Select **BCU01** at top right pulldown in s/w (Note: new BCU assignments start with BCU01)
- 1.4.7 To change the BCU ID from the default of 1 press the 'Master Config' button

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	MountedMain	Ma	inChrose: BCU01	SlaveChoose: BMU01			
Device Info	Mountedwall	1410		Siavechoose. Bivioo1 +			AutoQue
‡ Multi Info	Run State -	Total Vol	Total Cur A	Max Cell Vol mV	Max Cell Vol Num	Max Vol BMU Num	SaveLog
Passive Balance	e BMU Max Vol Num	Min Cell Vol	Min Cell Vol Num	Min Vol BMU Num	BMU Min Vol Num	Ave Cell Vol	
Active Balance	Max Cell Vol Diff	Max Cell Temp °C	MaxCellTemp Num	MaxTempBMU Num	BMU MaxTempNum	Min Cell Temp °C	
Master Proper	MinCellTemp Num	MinTempBMU Num	BMU MinTempNum	Bat Ave Temp °C	MaxBatTempDiff °C	Max Polarity Temp °C	
Master Config	MaxPolarityT Num	HV Box Max Temp °C	Insulation kΩ	Supply Voltage	Load Total Vol	Nominal Capacity Ah	
	SOH	-500	Inner SOC	TotalDChoEnergy			·
Slave Config	Chg Cur High	DChg Cur High	Pole Temp High	Bat Temp Rise	BatTempDiff High		Norma
	Chg Temp Low	Chg Temp High	Dchg Temp Low	Dchg Temp High	Cell Vol Diff High		Protec
Param Adjust	Cell Vol Low	Cell Vol High	HVB Temp High	SOH Low	SOC High		Alarm
Balance Info	SOC Low	P- Insulation Low	P+ Insulation Low	Insulation Low	TotalVolDiff High		Warni
	Total Vol Low	Total Vol High	Module Vol High	Module Vol Low	BMU Fault	~	
t Tools	2				s	witch BarcodeRW	
Frr Code						Pos Relay Pre Relay	
6 El Code						Neg Relay Disconnector	
Monitor							
ConnSetting							

1.4.8 After pressing 'Master Config' button the software will show the below screen

	laster-Unit Upper Com	puter V5.0							$ \Box$ \times		
_	Davies le fe	MountedMain		Ma	in Choose:	BCU01		SlaveChcose: BMU01 🔻	🗸 AutoQuery		
	Device Info	System Config									
÷÷	Multi Info	Parameter	Value	Unit	Read	Write	State	Instruction			
- 11 -	Wald Into	Reset			1	±.		1:Reset other:No Reset			
•-	Dessive Release	Reset EEPROM		Hex	1	+		Reset EEPROM			
Ŧ	Passive balance	BCU Error Code Enable			1	÷		1:On 2:Off			
		Reset BMU ID Operate			1	+		1:On 2:Off			
t+T	Active Balance	Start Pre-Charge Operate			1	+		1:start Other:Stop			
		Config BCU ID			1	÷		>=1			
\$	Master Property	fan Switch			1	±.		1:On 2:Off			
		SOH Calib Switch		Hex	1	±.		0:Disable;1:Enable			
Ö.	Master Config	Temp Replace Switch		Hex	1	÷		0:Disable;1:Enable			
		Start Insulation Sampleing			1	÷		1:Start			
=	Slave Config	Read IO State		Hex	1	±.		En			
_	charte connig	Set IO State		Hex	1	÷		1 : High Level 2:Low Level			
~	Param Adjust	Year		Year	1	±.		En			
Ψ	Faran Aujust	Month		Month	1	÷		En			
_		Day		Day	1	±.		En			
	Balance Info	Week		Week	1	÷		En			
		Hour		Hour	1	÷		En			
ж	Tools	Minute		Minute	12	±		En			
		Second		Second	1	+		En			
≡,	Err Code	Bank Num			1	÷		1~4			
		IP Offset			1	+		<=60			
\bigcirc	Monitor	Last Byte of IP			1	÷		<=255			

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1.4.8.1 To change the BCU ID

Description / Title

- 1.4.8.2 Enter "**write**" at lower left.
- 1.4.8.3 Enter a value (2, 3, 4, 5, 6, 7, 8, etc.) in the 'BCU ID' field
- 1.4.8.4 Press the 'Write' button.
- 1.4.8.5 Enter a value of '1' in the 'Reset Value' field
- 1.4.8.6 Press the 'Write' button.
- 1.4.8.7 At this point communication with the BCU will be lost since the BCU ID is no longer set to 1

[] N	laster-Unit Upper Comp	puter V5.0						- 🗆 X
_		MountedMain		Ma	inChoose:	BCU01		SlaveChoose: BMU01 V AutoQuery
	Device Info	System Config						
÷÷	Multi Info	Parameter	Value	Unit	Read	Write	State	Instruction
-1-1-	Martinino	Reset			1	±.		1:Reset other:No Reset
• -	Passiva Palanca	Reset EEPROM		Hex	1	Ĺ		Reset EEPROM
Ŧ	Passive Dalance	BCU Error Code Enable			1	÷		1:On 2:Off
		Reset BMU ID Operate			1	±.		1:On 2:Off
†∔T	Active Balance	Start Pre-Charge Operate			1	±.		1:start Other:Stop
		Config BCU ID	2		1	±.		>=1
\$	Master Property	fan Switch			1	Ľ		1:On 2:Off
		SOH Calib Switch		Hex	1	±.		0:Disable;1:Enable
\$	Master Config	Temp Replace Switch		Hex	1	÷		0:Disable;1:Enable
		Start Insulation Sampleing			1	÷		1:Start
\equiv	Slave Config	Read IO State		Hex	1	÷		En
		Set IO State		Hex	1	÷		1 : High Level 2:Low Level
\odot	Param Adjust	Year		Year	1	÷		En
$\mathbf{\mathbf{\nabla}}$	i alam / lajase	Month		Month	1	÷		En
	Ralanca Info	Day		Day	1	÷		En
	Dalarice IIIIO	Week		Week	1	÷		En
56	- 1	Hour		Hour	1	÷		En
R	lools	Minute		Minute	1	÷		En
		Second		Second	1	÷		En
≣_	Err Code	Bank Num			1	÷		1~4
		IP Offset			1	÷		<=60
0	Monitor	Last Byte of IP			1	÷		<=255
	ConnSetting						ort Co	
						limb		Clear All
Can	CanClose Uart : UartCl	ose Tcp : TcpClose Version: HMI: 5.0).8224.3244	5 Config	g: 1.0.0			Hangzhou Xieneng Technology Co.,Ltd

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- 1.4.9 To confirm new BCU ID setting select "**Device Info**" and select the new BCU0x from the pull down to connect.
- 1.4.10 The Data in the fields will populate automatically when the BCU ID is assigned correctly and BCU # selected matches the Control box the system is connected to.
- 1.4.11 Repeat steps in 1.4.8 above for each string/rack in the system.
- 1.4.12 It is not necessary to close the BMSer software on the PC/laptop in-between assigning BCU ID's
- 1.4.13 It is necessary to move the SRV to the debug port of the BCU/Control Box that is being configured.

Master-Unit Upp	r Computer \	V5.0			1946 - 640 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 - 1946 -	-	
Device Info	Mdur	ntedMain	N	lainChoose BCU02	SlaveChoose: BMU01		AutoQue
Hulti Info	Ku	in State	Total Vol	Total Car A	Max Cell Vol mV	Max Cell Vol Nam	
Passive Bal	ance	ax Vol BMU Num	BMU Max Vol Num	Min Cell VolmV	Min Cell Vol Num	Min Vol BMU Num	
↓↓↑ Active Bala	nce	/U Min Vol Num	Ave Cell Vol mV	Max Cell Vol Diff mV	Max Cell Temp °C	MaxCellTemp Num	
Master Pro	perty	axTempBMU Num	BMU MaxTempNum	Min Cell Temp °C	MinCellTemp Num	MinTempBMU Num	
🌣 Master Cor	fig	//U MinTempNum —	Bat Ave Temp °C	MaxBatTempDiff °C	Max Polarity Temp °C	MaxPolarityT Num	
	н	/ Ny May Temp	Insulation	Supply Voltage	Load Total Vol	Nominal Canacity	
Slave Confi	9	Chg Cur High	DChg Cur High	Pole Temp High	Bat Temp Rise		Norma
		BatTempDiff High	Chg Temp Low	Chg Temp High	Dchg Temp Low		Protec
	st 🛛	Dchg Temp High	Cell Vol Diff High	Cell Vol Low	Cell Vol High		Alarm
Balance Inf		HVB Temp High	SOH Low	SOC High	SOC Low		Warnir
		P- Insulation Low	P+ Insulation Low	Insulation Low	TotalVolDiff High	ν.	
¥ Tools						Switch BarcodeRV	v
Err Code						Pos Relay Pr	e Relay
						Neg Relay Disc	onnector
Ø Monitor						24	
ConnSetting							

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1.5 The 1st rack has BCU ID assigned. The rack is showing red as it is in Alarm mode because the busbars are not connected.



1.5.1 Return to the Home screen by pressing the 'Home' button



1.5.1.1 Press the '**R1**' (or **Rx** for whatever rack is being setup) button

- 1.5.1.2 After pressing one of the 'Rx' buttons the rack detail page below will be shown
- 1.5.1.3 Press the '**Module**' button to show individual module data. The screen should look like below for each battery module.

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					E	Time 2 Version	023-10-03 14:21 A0404-105-VI.3
Rack 1	Home	Alarm	Setup	м	odule		Next rack
Rack Status	Prechg	AveVo		Ins.	c	hgCurLmt	DsgCurLmt
Idle	542.6V	3499m	V 21	0000κΩ		100A	380A
558V	Dischg		Pre	NA S	Ch	large	зон
0A	Closed	Sure Me	open		Cl	osed	100%
99.1%	MaxCellVol	3500m∨	1#	MaxCe	IITemp	25.5°C	3#
25.5°C	MinCellVol	3471mV	38#	MinCel	ITemp	24.1°C	18#

- 1.5.1.4 Press the '**Prev**' or '**Next**' button to advance to the next battery module.
- 1.5.1.5 There are 10 modules per rack (M1 thru M10). All module cell boxes should be green.

					- 6	Time 2023 Version AO	-10-03 10:12:51 404-105-V1. 3. 3
Rack 1	MI	Home	Р	rev	Next		Back
C1	C2	C3	C4	C5	C6	C7	C8
3510mV	3502mV	3509mV	3490mV	3496mV	3510mV	3505mV	3493mV
C9	C10	C11	C12	C13	C14	C15	C16
3510mV	3510mV	3503mV	3509mV	3510mV	3510mV	3510mV	3510mV
T1	T2	тз	Т4	Т5	T6	T7	Т8
30°C		30°C	30°C	30°C	30°C	30°C	30°C
Т9	T10						



- 1.5.2 After all the racks in the system have their BCU ID's appropriately assigned, the Home screen would have all the Racks shown in Green.
 - 1.5.2.1 After all the BCU IDs in the system have been successfully set, the power to all rack's BMS power should be cycled to reset the system.
 - 1.5.2.2 After resetting the system, recheck all racks and modules for valid data and communication.
 - 1.5.2.3 To prepare the system for operation the configured racks must be enabled.
- 1.5.3 From the Home screen on the HMI press the 'Config' button



- 1.5.4 Change the Insulation Control to "OFF"
- 1.5.5 Press the '**Rack Enable**' button.

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		-		ranci	-	Time Version	2023-10-03 10:12:22 40404-105-V1.3.3
	Insulation Control	Off C	hange	High CV Alarm	3700	mV K	Home
	Forced Charge	Off	hange		500	0.1°C	Rack Enable
	Over voltage Resume time (h)	1		Low SV Alarm	440	v	Next
				Rack 3	Rack 4	Rack 5	and the second second
- 1	Under V cut off (mV)	2000	2000	2000	2000	2000	
		982	981	978	970	980	
		55	55	55	55		State of the local division of the local div
		1500	1500	1500	1500	1500	1000

- 1.5.6 From the Rack Enable screen, press the '**Enable**' button for each rack that has been configured for the system.
 - 1.5.6.1 When Enabling racks, the contactors will close if there are no active alarms in the system.
 - 1.5.6.2 When Control Box outputs are connected to a common point (DC bus, UPS, etc.), Enabling racks should be done one rack at a time, checking Control Box voltage output before connecting the next rack.
 - 1.5.6.3 If the Control Box circuit breaker is closed, and the contactors close, the output terminals of the Control Box will be energized with 500+VDC. Be sure all appropriate precautions are taken before enabling racks.



1.6 After the system has been fully configured and enabled, be sure to press '**logout**' from the Home screen to avoid inadvertent setting changes by unqualified personnel.

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2. **BMS firmware update** – Depending on system requirements and configuration, it may be required to update the BMS firmware in the HMI, BAU, and/or BCU.

2.1 Updating HMI firmware

- 2.1.1 If an HMI update is required, an MPINarada representative will provide the update files.
- 2.1.2 The update files are contained in a 'tpcbackup' folder.

tpcbackup			v Ö /
Name	Date modified	Туре	Size
LogoBmp	1/29/2021 1:38 PM	File folder	
Mcgs	1/29/2021 6:43 AM	File folder	
Project	1/29/2021 6:43 AM	File folder	
🗐 CeSvr.exe	1/17/2013 5:45 PM	Application	1,349 KB
🔄 System.ini	1/29/2021 1:37 PM	Configuration sett	1 KB
🛃 tpcupdateu.exe	12/27/2011 11:09 AM	Application	283 KB

- 2.1.2.1 Remove power to the HMI by shutting down the BMS power or removing the connector on the back of the HMI supplying power.
- 2.1.2.2 Remove the USB drive from the back of the HMI.
- 2.1.2.3 Connect the USB drive to a laptop or PC and load the '**tpcbackup**' folder and its contents into the root directory of the USB drive.
 - 2.1.2.3.1 Be sure that your laptop/PC does not encrypt the drive or files.
 - 2.1.2.3.2 Be sure the folder and files are not zipped.
 - 2.1.2.3.3 Be sure that the entire '**tpcbackup**' folder and its contents are saved to the USB drive.
- 2.1.2.4 Re-install the USB drive into the back of the HMI.
- 2.1.2.5 Re-apply power to the HMI.
- 2.1.2.6 The following screens will appear, all text is in Chinese, so the buttons to proceed with the upgrade must be pressed in the following order:



Press "Yes"

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	Software vers The unique serial mod- The operating environm Product confi	ion 3 3 1 45 er is 8326913 ent has been ignestion 930	19 371.2 26471305091838495 anthorized (0-0) 1821634		
and the second	megsTpe Proj	eet Vygrade	Fackage	×	
	Deveload Project		Upload Project		
100					

Press "Download Project"

		7im-6Rack-405			×	
	Troject lint Fin-Skath-405	Note: you can t dith during the	at power off or) desaled process	pull out the V		
d the ser		Babert		Duenload	ca	libratic

Press "Download"





Press "Yes"

	ergaTyr app update teel	•B
nerer, Cannot pul mgrada process! Total program	T out a mine smill re-	Labort
Regs-kpp 1007 x Regs-kpp 1007 x Regs-kpp 1007 x Regs-kpp 1007 x	le /metetrl_app de /megs_app de /libutils_se 1 de /libutils_se 1	
Rep:-422 10074 Begs-422 10074 Rep:-422 10074 Rep:-422 10074	de Albertgene te l de Albertgene 1 de Albertgene 1 de Alberts en 1 de Alberts en 1	
Mega-499 1947	de Alberge so I	

Screen showing status updates

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Description

Time !!	7in-6Each-485	
	Notes: you see all ports off or pull our the W disk dura	ng the download
	process!	
	creating new project data of it's complete.	*
	reoloci abilade ancosztartó.	allous and the second
	Deleting rempe data	111111111111111111111111111111111111111
	Dalate recipe data successfully	and the second second
	Deleting history data	
	Delete history data successfully	the longest regulation of
	Project upgrade complete!	
	Auto reboot after 10 seconds	
	Auto reboot after 9 seconds	
	Auto reboot after 8 seconds	
	Auto reboot after 7 seconds	
	Auto reboot after 6 seconds	
	Auto reboot after 5 seconds	and the second se
	Auto reboot after 4 seconds.	Contraction of the local division of the loc
	Auto reboot after 3 seconds	
	Auto reboot after 2 seconds	-
	Reboot	Dama Barra

Press "Reboot" or wait for HMI to reboot on its own.

Even	t Data lo	Pvotemp	Config
Status	R1	R2	R3
	You are using the sor	nīpo project upgrade packag	285 ~ ¹ A e 2.4.
	Click "Yes" to o	entinus Click "No" to exit	c
	0.04	0.0A	O V ADD
	0%	0%	ON

Press "No" after the system reboots. At this point the update is compete.

- i. To avoid the below screen every time the HMI restarts, the 'tpcbackup' folder should be removed from the HMI USB drive or renamed
 - a. It is preferable to rename the folder and leave on USB drive so the HMI can be reprogramed later if needed.
 - i. The folder can be renamed anything, it is suggested to use the date in the new name for record keeping purposes.



2.2 Updating BAU firmware

- 2.2.1 There is one BAU per system
- 2.2.2 Connect to Control Box #1 (with HMI and BAU) using "SRV port and "USBCAN II" box connected to PC/laptop via USB port
- 2.2.3 Ensure that the BMS is powered on (LED lights are lit)
- 2.2.4 Open the BMSer Service Tool V5.0.0
- 2.2.5 Double click on **BmsTerminal.**
- 2.2.6 The software screen will be opened. Press **OpenCan.**

🚺 LoginWindow						×
BatterySystem	Laguage: E	EN 🔻 So	oftware	se ibu		V
C	ommType	Can	V			
E	BaudRate	500K	▼			
	Index	0	▼			
	Channel	0	▼			
De	viceType		BCAN1			
	Ope	ncan	J		Но	me

2.2.7 A new screen will Open. Press the **Tools** tab.

Device Info	MountedMain	Mi	ainChoose: BCU01	SlaveChoose: BMU01		AutoQ
‡ Multi Info	Run State -	Total Vol	Total Cur A	Max Cell Vol	Max Cell Vol Num	Max Vol BMU Num
Passive Balance	BMU Max Vol Num	Min Cell Vol	Min Cell Vol Num	Min Vol BMU Num	BMU Min Vol Num	Ave Cell Vol mV
Active Balance	Max Cell Vol Diff	Max Cell Temp °C	MaxCellTemp Num	MaxTempBMU Num	BMU MaxTempNum	Min Cell Temp °C
Master Property	MinCellTemp Num	MinTempBMU Num	BMU MinTempNum	Bat Ave Temp	MaxBatTempDiff°C	Max Polarity Temp °C
Master Config	MaxPolarityT Num	HV Box Max Temp °C	Insulation kΩ	Supply Voltage	Load Total Vol	Nominal Capacity Ah
	SOH	soc	Inner SOC	TotalDChgEnergy		
Slave Config	Chg Cur High	DChg Cur High	Pole Temp High	Bat Temp Rise	BatTempDiff High	A Nor
Param Adjust	Chg Temp Low	Chg Temp High	Dchg Temp Low	Dchg Temp High	Cell Vol Diff High	Prot
,	Cell Vol Low	Cell Vol High	HVB Temp High	SOH Low	SOC High	Alar
Balance Info	SOC Low	P- Insulation Low	P+ Insulation Low	Insulation Low	TotalVolDiff High	War
	Total Vol Low	Total Vol High	Module Vol High	Module Vol Low	BMU Fault	~
Tools					S	witch BarcodeRW
Frr Code						Pos Relay Pre Relay
, Lii couc					[Neg Relay Disconnector
Monitor						
ConnSetting						



2.2.8 In the following screen follow these steps:

2.2.8.1 Uncheck Auto Match Boot Device.

- 2.2.8.2 Select '**Master**' in the EquipType dropdown menu.
- 2.2.8.3 Select '1' in the BAU dropdown menu.
- 2.2.8.4 Press 'ReadVersion' button
 - 2.2.8.4.1 The current software version will be shown in the status windows on the right side.
- 2.2.8.5 Press the '**Import**' button to select location and **.bin file** for BAU update.
 - 2.2.8.5.1 Update file will be provided by MPINarada representative.
- 2.2.8.6 Press the 'StartUpgrade' button.
 - 2.2.8.6.1 The update will begin with status displayed on screen.
 - 2.2.8.6.2 The software will indicate when the update is complete.
 - 2.2.8.6.3 A new version of the software will show up on the screen under

"After Boot Version."

Device Info	MountedMain MainChoose: BCU01 V SlaveChoose: BMU01 V	AutoQuer
Multi Info	EquipType Master	After Boot Version
Passive Balance	BAU 1 Clusers/Jeremy Rose\batteryinformer.com\MPINarada Team	
Active Balance	FrameForm Std CetVersion	
Master Property	Tunnel Close V Recettime 8000	
Master Config	StartUpgrade CancelUpgrade	
Slave Config		
Param Adjust		
Balance Info		
Tools		
Err Code		
Monitor		
ConnSetting		

- 2.2.8.7 Press the '**Reset**' button to restart the BAU with the new firmware.
- 2.2.8.8 Press the '**ReadVersion**' button again to show new firmware version has been installed.
 - 2.2.8.8.1 Version numbers before and after the reprogramming should be different (the version numbers will NOT match the example version numbers below)



2.3 Updating BCU firmware

- 2.3.1 There is a BCU in each Control Box of the system.
- 2.3.2 Every string/rack will have a Control Box.
- 2.3.3 If a BCU firmware update is required, all BCU's in all Control Boxes must be updated individually (one by one)
- 2.3.4 Starting with Control Box #1 (with HMI and BAU), connect using "SRV" port and "USBCAN II" box connected to PC/laptop via USB port
- 2.3.5 Ensure that the BMS is powered on (LED lights are lit)
- 2.3.6 Open the BMSer Service tool V5.0.0
- 2.3.7 Double click on BmsTerminal.
- 2.3.8 The software screen will be opened. Press **OpenCan.**

LoginWindow					\times
BatterySystem	Laguage: E	Software	SE IBU		V
	CommType	Can			
	BaudRate	500K V			
	Index	0			
	Channel	0			
C	DeviceType	VCL USBCAN1	▼		
	Oper	nCan		Но	me

2.3.9 The below software screen will be opened. Press the **Tools** tab

		MountedMain	N	lainChoose: BCU01 🔻	SlaveChoose: BMU01 🔻			AutoOi
	Device Info							Savel o
:#:	Multi Info	Run State -	Total Vol	Total Cur A	Max Cell Vol mV	Max Cell Vol Num	Max Vol BMU Num	
ŧ	Passive Balance	BMU Max Vol Num	Min Cell Vol mV	Min Cell Vol Num	Min Vol BMU Num	BMU Min Vol Num	Ave Cell Vol	mV
4t	Active Balance	Max Cell Vol Diff mV	Max Cell Temp °C	MaxCellTemp Num	MaxTempBMU Num	BMU MaxTempNum	Min Cell Temp	°C
\$	Master Property	MinCellTemp Num	MinTempBMU Num	BMU MinTempNum	Bat Ave Temp °C	MaxBatTempDiff °C	Max Polarity Temp	°C
₽	Master Config	MaxPolarityT Num	HV Box Max Temp °C	Insulation kΩ	Supply Voltage	Load Total Vol	Nominal Capacity	Ah
		SOH	soc	Inner SOC	TotalDChoEnergy			
=	Slave Config	Chg Cur High	DChg Cur High	Pole Temp High	Bat Temp Rise	BatTempDiff High		Nor
_		Chg Temp Low	Chg Temp High	Dchg Temp Low	Dchg Temp High	Cell Vol Diff High		Pro
Ŷ	Param Adjust	Cell Vol Low	Cell Vol High	HVB Temp High	SOH Low	SOC High		Ala
	Balance Info	SOC Low	P- Insulation Low	P+ Insulation Low	Insulation Low	TotalVolDiff High		War
_		Total Vol Low	Total Vol High	Module Vol High	Module Vol Low	BMU Fault		
K	Tools						Switch BarcodeRW	
	Sun Carda					1	Pos Relay Pre Rela	ау
0	Err Code					ĺ	Neg Relay Disconne	ctor
0	Monitor							
	ConnSetting							

Can : CanClose Uart : UartClose Tcp : TcpClose Version: HMI: 5.0.8224.32445 Config: 1.0.0

Hangzhou Xieneng Technology Co.,Lt



- 2.3.10 The below steps will need to be repeated to update the BCU/Control Box for each rack/string in the system.
- 2.3.11 In the following screen follow these steps:
 - 2.3.11.1 Uncheck Auto Match Boot Device.
 - 2.3.11.2 Select '**IBU**' in the EquipType dropdown menu.
 - 2.3.11.3 BAU should be set to 1. Select corresponding number in the BCU drop down to the control box you are trying to update.
 - 2.3.11.4 Press 'ReadVersion' button
 - 2.3.11.4.1 The current software version will be shown in the status windows on the right side.
 - 2.3.11.5 Press the '**Import**' button to select location and **.bin file** for BAU update.
 - 2.3.11.5.1 Update file will be provided by MPINarada representative.
 - 2.3.11.6 Press the 'StartUpgrade' button.
 - 2.3.11.6.1 The update will begin with status displayed on screen.
 - 2.3.11.6.2 The software will indicate when the update is complete.
 - 2.3.11.6.3 A new version of the software will show up on the screen under "After Boot Version"
 - 2.1.1.1 Press the '**Reset**' button to restart the BCU with the new firmware.
 - 2.1.1.2 Cycle power on all control boxes after the update.

[] N	Aaster-Unit Upper Com	puter V5.0			- 🗆 X
	Device Info	MountedMa	in	MainChoose: BCU01 V SlaveChoose: BMU01 V	🗸 AutoQuery
♯	Multi Info	EquipType	IBU 🔻	Auto Match Boot Device ID Before Boot Version	After Boot Version
ŧ	Passive Balance	BAU	1	c:\Users\Jeremy Rose\batteryinformer.com\MPINarada Team	
+1+	Active Balance	BCU	1 🔻	(BootFilePath) Import	
141		FrameForm	Std	Reset GetVersion	
\$	Master Property	Tunnel	Close V		
₽	Master Config	ResetTime	8000	StartUpgrade CancelUpgrade	
≡	Slave Config				
Θ	Param Adjust				
	Balance Info				
ж	Tools				
E,	Err Code				
0	Monitor				
	ConnSetting				

Can : CanClose Uart : UartClose Tcp : TcpClose Version: HMI: 5.0.8224.32445 Config: 1.0.0

_		Date	Revision	File Name	Page	
	adai	Jan 18, 2024	1	MPITD-MAN-CNF-5125528-V5.0.doc	(23/24)	
Description / Title	MPLHP-5125528 Setup and Configuration Manual					

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		Date Revis		File Name	Page		
MP Nar	ada	Jan 18, 2024	1	MPITD-MAN-CNF-5125528-V5.0.d&	(24/24)		
Description / Title	MPLHP-5125528 Setup and Configuration Manual						

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