



MODCOM Manual



Table of Contents

1	MXI Installation	3
2	MODCOM Installation.	9
3	The Software	16
	3.1 Main Menu	17
	3.1.1 Help Assistent / Create a new System	19
	3.1.2 Import Status	32
	3.1.3 Import Datalogger	33
	3.1.4 Import Daily Interval Datalogger	34
	3.1.5 Import Saved Data	35
	3.1.6 Bootloader	36
	3.1.7 Actual System	37
4	Technical Support	38
	••	



1 MXI Installation

Connect the CXI to a free USB Port on your PC and following picture will appear: Choose "Install from a list of specific location (Advanced)"



Choose "Don't search. I will choose the driver to install" in the next window

Found New Hardware Wizard
Please choose your search and installation options.
\bigcirc <u>S</u> earch for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM)
Include this location in the search:
C:\Brother\BrNetScn Scowse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< <u>B</u> ack <u>N</u> ext > Cancel



Found New Hardware Wizard	
Hardware Type.	E.
Select a hardware type, and then click Next. Common <u>h</u> ardware types:	
Show All Devices Show All Devices Show All Device Class AVC Device Class Batteries Bluetooth Radios CDROM Computer Dick drivee	
< <u>B</u> ack <u>N</u> ext >	Cancel

Click on "Show All Devices" than on "Next"

Found New Hardware Wizard						
Select the device driver you want to install for this hardware.						
Select the manufacturer and have a disk that contains the Manufacturer (Standard CD-ROM drives) (Standard IDE ATA/ATAPI cor (Standard keyboards) (Standard system devices) (Standard system devices)	Model Model CD-ROM Drive (force CDDA accurate) CD-ROM Drive (force CDDA inaccurate) CD-ROM Drive (force IMAPI disable) CD-ROM Drive (force IMAPI disable) CD-ROM Drive (IMAPI settings 0.1) Have Disk					
	< <u>B</u> ack <u>N</u> ext > Cancel					

Click on "Have Disk"





Locate File						? 🛛
Look <u>i</u> n	: 🗀 Driver MXI		*	G 🦻	بي 🥙	
My Recent Documents	G ftd2xx.inf					
Desktop						
My Documents						
My Computer						
	File <u>n</u> ame:	ftd2xx.inf			*	Open
My Network	Files of type:	Setup Information (*.inf)			*	Cancel

Choose the file "ftd2xx.inf" at the disk or folder on your PC where you have the MODCOM files\Modcom\Driver MXI\ ftd2xx.inf

Install F	rom Disk	X
-	Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.	OK Cancel
	<u>C</u> opy manufacturer's files from: D:\MODCOM\Driver MXI	Browse



Click on "Next" at the window below.

Found New Hardware Wizard
Select the device driver you want to install for this hardware.
Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.
Show <u>c</u> ompatible hardware
Model
Phocos CXI
This driver is not digitally signed! Have Disk Tell me why driver signing is important Have Disk
< <u>B</u> ack <u>Next</u> Cancel

Now the driver would installed:





If the message below appears click on "Continue Anyway"

Hardware Installation							
The software you are installing for this hardware: Phocos CXI has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.							
	Descent Windows Logo testing. Continue Anyway STOP Installation						

If the driver is installed correct now the window below will show you the success.

Found New Hardware Wizard				
	Completing the Found New Hardware Wizard The wizard has finished installing the software for: Phocos CXI Cick Finish to close the wizard.			
	< <u>B</u> ack Finish Cancel			



🚇 Device Manager	
<u>File Action View H</u> elp	
🗄 💩 Keyboards	~
🗄 Ď Mice and other pointing devices	_
🗄 🦢 Modems	
🗄 😼 Monitors	
🔃 🎬 Network adapters	
📺 🗐 PCMCIA adapters	
🕀 👷 Processors	_
🗄 🕘 Sound, video and game controllers	
🗄 📲 🧏 System devices	
🖻 🚔 Universal Serial Bus controllers	
🙀 Intel(R) 8280 IFB/FBM USB Universal Host Controller - 2658	
🙀 Intel(R) 8280 IFB/FBM USB Universal Host Controller - 2659	
🙀 Intel(R) 8280 IFB/FBM USB Universal Host Controller - 265A	
🙀 Intel(R) 8280 IFB/FBM USB Universal Host Controller - 265B	
Intel(R) 8280 1FB/FBM USB2 Enhanced Host Controller - 265C	
Phocos CXI	
USB Root Hub	×

In the Device Manager of your PC you will see now "Phocos CXI" at the group "Universal Serial Bus controllers"



2 MODCOM Installation

Please start the "setup.exe", then the MODCOM Setup would guide you through the installations steps.

If the Microsoft framework is still installed on your PC, then please go to step2

Step 1: Install the Microsoft .NET Framework

Open setup.exe and you will see the following picture if Microsoft .NET Framework **is not** currently installed on your computer. If Microsoft .Net Framework is already installed, look into step 2 of the installation.



Click to "Yes" and the next window will appear.



Microsoft .NET Framework installation is executing now.



🖟 Microsoft .NET Framew	ork 1.1 Setup
11	License Agreement
Microsoft	
net	(A copy of this license is available for printing at http://go.microsoft.com/fwlink/?LinkId=12283)
	SUPPLEMENTAL END USER LICENSE AGREEMENT FOR MICROSOFT SOFTWARE
	I have read, understood and agree to the terms of the End User License Agreement and so signify by clicking ''I agree'' and proceeding to use this product.
- -	
	<u>i</u> nstall Cancel

Click "I agree" if you agree with license terms of Microsoft .NET Framework. Then, click "Install" to continue software installation.



Microsoft .NET Framework setup is installing components now.



Finish of the .NET Framework installation with a message.

🔂 Microsoft .N	ET Framew	ork 1.1 S	etup		<u> </u>
Insta	allation of Mic	rosoft .NET	Framewo	ork 1.1 is c	omplete.
	Γ				
	<u></u>				

Now the Microsoft .NET Framework is installed on your computer. You must start the setup.exe again to install the Phocos MODCOM software.



Step 2: Install the MODCOM software

Start the setup again and following the instructions.



Click on "Next".

MODCOM Manual





Choose a folder where you want to install the software.

🔂 Modular Power Management	
Select Installation Folder	
The installer will install Modular Power Management to the following folder. To install in this folder, click "Next". To install to a different folder, enter it below i	or click "Browse".
Eolder: C:\Programme\Phocos\Modular Power Management\	B <u>r</u> owse Disk Cost
Install Modular Power Management for yourself, or for anyone who uses this co Everyone Just me	omputer:
Cancel < <u>B</u> ack	<u>N</u> ext ≻

Click on "Next" and the software would installed now.

MODCOM Manual

13. March 2009



🖟 Modular Power Management		
Confirm Installation		
The installer is ready to install Modular F Click "Next" to start the installation.	⁹ ower Management on your computer.	
	Cancel < <u>B</u> ack	<u>N</u> ext >
🗃 Modular Power Management		
<mark>⊮ Modular Power Management</mark> Installing Modular Powe	er Management	
Modular Power Management	er Management	
Modular Power Management	er Management Istalled.	





If the installation was successfully the window above will show you the success.

On the Desktop the following link will shown to you:

Modular_Power_Management.exe



3 The Software

After launching the software click on "START"





3.1 Main Menu

Following possibilities:

• Help Assistant/Create New System

- Helps you to configure your individual system
- Check the addresses of the devices

• Import Status

• If a MXI (CXI) is connected than click on this button and the software starts to download the actual data of the MCU (actual Status values and Settings)

• Import Datalogger

- Import the daily datalogger (max 91 days)
- Import the monthly datalogger (the last 10 years)
- Import Daily Intervall
 - Import System data which are saved every 15/30 or 60 minutes (depending of the interval setting)
- Import Saved Data
 - Here you can save system data or import saved saved data

Bootloader

• This function is for update the devices with the newest software.

• Actual system

• If you have import data you go again to the overview window.



B MODULAR POWER MA	ANAGEMENT	VERSION 21	
File Interface Main Menu			
phocos		Modular Power Management	phocos
		Help Assistent / Create New System	
	6	Import Status	
	6	Import Datalogger	
	day 00 💌	Import Daily Interval Datalogger	
		Import Saved Data	
		Bootloader	
		Actual System	



3.1.1 Help Assistent / Create a new System

Main Menu: Help Assistant/Create New System (page 13)

If you want to configure a new system this assistant will help you to configure your devices.

The assistant will guide you in following steps to your individual system.

🔜 MODULAR PO	WER MANAG	GEMENT	VERSION 21			
File Interface Ma	ain Menu					
phocos		He	elp Assistent: (Create new Sys	tem	phocos
internet Ba Barrier Barrier	CON	TROL UNIT	Г			
The	e"Create Ne stem. Pleas	w System" Help Assis e follow the below instru	tent will guide you throu ctions.	ıgh six (6) steps of impo	rtant system settings for	your MPM
1.	Choos	e System Settin	gs			
2.	Choos	e Devices for Y	our System			
3.	Print C	out System Sche	ematic			
4.	Set Di	p Switches on A	ll Devices and V	Viring		
5.	Hardw	are/Software ch	eck			
6.	Ready					
	Next		1			
System	Devices	Status Data	Datalogger	Save System	Graphs	Print Shematic
			Mair	n Menu		

Please click on "Next" at the bottom of the window and the next window will appear.



For Optimal Ch	CONT	H ROL UNI	elp Assistent: (T	Create new Sys	tem	phocos
phocos	CONT	H ROL UNI	elp Assistent: (T	Create new Sys	tem	phocos
For Optimal Ch	CONT	ROL UNI	т			
For Optimal Ch						
· · ·	narging					
			PWM	/MPPT		
To Avoid Electr	romagnetic Inter	ference				
			Bank S	Switching		
System De	evices	Status Data	Datalogger	Save System	Graphs	Print Shematic

Decide between "PWM/MPPT" charging or "Bank Switching"

<u>PWM/MPPT:</u>

It's for a optimal charging. Choose this menu item if you have no special requirements.

Bank Switching:

If you want to avoid power peaks which causes electromagnetic influences you should choose Bank Switching. This function is only possible if you have only MPS as charger it's not possible by using MPPT's.



Depending of the charging mode you have two different windows for setting the charging voltages: <u>Choosing: PWM/MPPT</u>

B MODULAR POWER MANAGEME	NT	VERSION 21			
File Interface Main Menu					
phocos	He	elp Assistent: (Create new Sys	tem	phocos
	ROL UNI	r			
Default Setting System Voltage: 12V		Battery Type:	Liquid	(Default Settings Custom Settings
Charge Voltage Set-Points	Max. Voltage	Activation Voltage Time F	Period Daily Time Period	Frequency (days)	
Float Mode Voltage Boost Mode Voltage: Equal Mode Voltage: Main Charge Voltage:	 ∴ 13.8 ∨ ∴ 14.4 ∨ ∴ 14.8 ∨ ∴ 14.4 ∨ 		20 min 30 min 20 min 20 min	÷ 24 days	
Temperature Compensation:		24 mv/K			
Back Next					
System Devices	Status Data	Datalogger	Save System	Graphs	Print Shematic
		Mair	n Menu		

Notice:

This settings you should only change if you are a battery specialist.

Charging Voltages:

The charging voltages have different priorities. (see next page)

Temperature Compensation:

The Temperature Compensation value is the correction of the charging voltage depending of the temperature of 25°C. The value is the correction of the charging voltages per Kelvin.







If battery voltage falling below "Activations voltage" of Equal Mode then Equal mode would activated.



If battery voltage falling below "Activations voltage" of Equal Mode then Equal mode would activated.



Priority4: Daily Boost Mode:



Daily Boost Mode is activated when a new day starts



Choosing: Bank Switching

MODULAR POWER MANA	GEMENT	VERSION 21			
ile Interface Main Menu					
phocos	He	elp Assistent: (Create new Sys	tem	phocos
		Г			
Default Setting Bank Switching	12V 💌	Lic	µid 🔽	•	Default Settings Custom Settings
Voltages for Charge On/	Off:				
	Max:	14.8 V			
	Min:	13.0 V			
	Minimum Off Time:	• <u>120</u> s			
Back Next	1				
System Devices	Status Data	Datalogger	Save System	Graphs	Print Shematic
		Main	Menu		

Notice:

This settings you should only change if you are a battery specialist.

Here you can choose the threshold levels if you use a Bank Switching System.



Interface Main Meru Image: Contract Unit Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Maximum Allowed Battery Voltage Image: Contract Meru Image: Contract Meru Image: Contract Meru Minimum Allowed Battery Voltage Image: Contract Meru Image: Contract Meru Image: Contract Meru Image: Contract Meru Back Next Status Data Datalogger Save System Graphe Print Shematic		GEMENT	VERSION 21			
Help Assistent: Create new System phoco Image: Control unit Control unit Energency High-Voltage Disconnect for Load Protection The system will performmormal load disconnects following a one (1) minute time delay. However, if the voltage threshold set below is exceeded, all load switches will disconnect immediately. Maximum Allowed Battery Voltage 17,0 v Energency Low-Voltage Disconnect for Battery Protection The system will performmormal load disconnects following a one (1) minute time delay. However, if the voltage threshold set below is exceed, all load switches will disconnect immediately. Maximum Allowed Battery Voltage 10,5 v Back Next System Devices Status Data Datalogger Save System Graptes Print Shematic	Interface Main Menu	GEMENT	TENSION 21			
Image: Second control of the second	hocos	He	elp Assistent: (Create new Sys	tem	phocos
Emergency High-Voltage Disconnect for Load Protection The system will perform normal load disconnects following a one (1) minute time delay. However, if the voltage threshold set below is exceeded, all load switches Waximum Allowed Battery Voltage Emergency Low-Voltage Disconnect for Battery Protection The system will perform normal load disconnects following a one (1) minute time delay. However, if the voltage threshold set below is exceed, all load switches will disconnect immediately. Minimum Allowed Battery Voltage			г			
Maximum Allowed Battery Voltage 17.0 v Emergency Low-Voltage Disconnect for Battery Protection The system will perform normal load disconnects following a one (1) minute time delay. However, if the voltage threshold set below is exceed, all load switches will disconnect immediately. Minimum Allowed Battery Voltage 10.5 v Back Next System Devices Status Data Datalogger Save System Graphs Print Shematic	Emergency High-Voltag The system will perforr will disconnect immedia	e Disconnect for Load Protecti n normal load disconnects elly.	ion following a one (1) minute t	ime delay. However, if the volt	age threshold set below is exc	eeded, all load switches
Emergency Low-Voltage Disconnect for Battery Protection The system will perform normal load disconnects following a one (1) minute time delay. However, if the voltage threshold set below is exceed, all load switches will disconnect immediately. Minimum Allowed Battery Voltage Minimum Allowed Battery Voltage 10.5 V Back Next System Devices Status Data Datalogger Save System Graphs Print Shematic	Maximum Allowed Batte	ry Voltage	<u>+</u> 17.0 v			
Back Next System Devices Status Data Datalogger Save System Graphs Print Shematic	Emergency Low-Voltag The system will perform disconnect immediately. Minimum Allowed Batte	e Disconnect for Battery Protec inormal load disconnects f y Voltage	following a one (1) minute ti	me delay. However, if the volta	ge threshold set below is exce	ed, all load switches will
System Devices Status Data Datalogger Save System Graphs Print Shematic	Back]				
	System Devices	Status Data	Datalogger	Save System	Graphs	Print Shematic

In this window you could choose the min. and max. allowed voltage in the system.

The max. allowed Voltage to protect your loads. By reaching this voltage all load switches will disconnect the loads immediately from the battery.

The min. allowed Voltage to protect the battery. When the battery voltage falls below this setting the load switches will also disconnect the load immediately.



	VERSION 21			
File Interface Main Menu	TENSIONET			
phocos	Help Assistent: (Create new Sys	tem	phocos
	INIT			
Grounding All Devices Must be Grounded on the S	ame Pole (Negative or Positive):			
Grounding:	Negative 💌			
Back Next				
System Devices Status Dat	a Datalogger	Save System	Graphs	Print Shematic
	Mair	n Menu		

Choose the grounding of the system.

It's necessary that the software could check if each device is connected correctly.

Notice:

By using MPPT it's only possible to ground on the negative pole.



	SEMENT	VERSION 21			
File Interface Main Menu					
phocos	H	elp Assistent: (Create new Sys	tem	phocos
		OVER	CHARGE PROTECTIO	N	
Add devices in your system:					
Charger:		0000000		0000000	
MPS Charge Management MPPT Consumers: MPS Consumer Management	phoces		CONTROL UNIT		
		LC	DAD MANAGEMENT		
		0000000	0000000	0000000	
Deck N + 1					
	Charless Darla	Detelement	Cours Courstan	Carala	Dist Character
System Devices	Status Data	Datalogger	Save System	Graphs	Print Shematic
		Mair	INCIU		

Next step is to add the devices in your system.

Please, click for this on the devices at the right side of the window above. Than you can add the devices.

MODCOM Manual

13. March 2009



If you want to delete a device click with the right mouse button on it and then on delete at the menu which appears.



Click on "next" if you have all components in your system.



MODULAR P	OWER MANAG	GEMENT	VERSION 21		
Interface I	Main Menu				
phocos			System	Overview	phocos
	Please choose [CutePDF Writer	a printer: PRINTER PREVIEW PRINT	/window		
	Next				
Back					

Now you could print out the schematic of your system to know also the Dip Switch settings for the devices.



ODULAR PO	WER MANAG	EMENT	VERSION 21			
Interface Ma	ain Menu					
hocos			System	Overview		phocos
in an	CON	TROL UNI	г			
The sys	"Create Ne tem. Please Choos	w System" Help Assis a follow the below instru-	tent will guide you throu ctions.	ugh six (6) steps of impo	ortant system settings for	your MPM
	Choos	e Devices for Y	our Svstem			
3.	Print C) ut System Scho	ematic			
4.	Set Dij Please, take	Switches on A care that all devices are con	II Devices and V nected to the battery at the sa	Viring me time. You can realize that I	by a switcher (for example: fus	e).
5.	Hardw Connect MX	r are/Software ch I and make Software/Hardwa	IECK re check. If the components a			
	Ready					
υ.						
Back	Next					

Now you could make the dip switch setting like the schematic and make the wiring of all components to the battery and the panels respectively Dump loads.

After the wiring is finished you should check again if you have no circuits before you connect it to the battery. Please use a fuse in the battery wire.



Now the software makes a comparison of the components which are really connected. If it's successfully the following message will shown to you.



Now the system is configured correct.

Now you could transmit the other settings.



3.1.2 Import Status

If you import the status then the Modcom import the actual status and settings values of the MCU.

🔜 MODULAR POWER MANAG	GEMENT	VERSION 21			
File Interface Main Menu					
phocos		System	Overview		phocos
Transmit Settings		OVEF	CHARGE PROTECTIO	N	
	0,52A	AO			
	<u>∎</u> •	phacas 🧧 🔒 🚺	e phocos	0000000	
		MPPT 🔳 🛦			
	MPPT 00	MPPT	D1		
			CONTROL UNIT		
	phocos 🔮 u 🗐 🔍 🛄 🗣				
	12,68V				
		L	OAD MANAGEMENT		
	OA OA	0,05A			
	📑 o phocas 📑 o p	hocos		0000000	0000
	MPS 00 MPS	DI MPS 02			
System Devices	Status Data	Datalogger	Save System	Graphs	Print Shematic
		Mai	n Menu		

If you click on the devices you can see the actual status values and settings of the devices



3.1.3 Import Datalogger

If you click on "Import Datalogger" you will get the monthly and daily saved data of the system.

B MODULAR POWER MAN	AGEMENT	VERSION 21			
File Interface Main Menu					
phocos		Data	logger		phocos
		Syster	m Data		
	Monthly				
		Daily Rec	corded (91)		
		Daily I	nterval		
_					
System Devices	Status Data	Datalogger	Save System	Graphs	Print Shematic
Main Menu					

After data import click on "Datalogger" at the buttons of the bottom. Then you have the choice between "System Data", "Monthly", "Daily Recorded(91)" and "Daily Interval"



3.1.4 Import Daily Interval Datalogger

B MODULAR POWER MANAGEMENT	VERSION 21	
File Interface Main Menu		
phocos	Main Menu	phocos
	Help Assistent / Create New System	
	Import Status	
	Import Datalogger	
day 00 💌	Import Daily Interval Datalogger	
	Import Saved Data	
	Bootloader	
	Actual System	

The Daily Interval Datalogger save data all 15, 30 or 60 minutes (depending of the setting) of the last 91 days.

On the drop down menu you can choose the day what you like to import.



3.1.5 Import Saved Data

If you want to save data click on the button "Import Saved Data" and the following window will open.

🖶 MODULAR POWER MANA	GEMENT	VERSION 21			
File Interface Main Menu					
phocos		Save/Export a	and Import Data	а	phocos
Save Data as .csv File Here you can save th	e data into a .csv file (semio	colon spererated). This allow	s you to import it in spreadshe	et.	
Sa	ive data as .csv file				
Filename Here you can save t	he data into a .pho file whic	h allows you to download th	e data again into the Modcom :	software.	
	Save File				
	Open File				
System Devices	Status Data	Datalogger	Save System	Graphs	Print Shematic

You can save the data as .csv file, then you have the possibility to import the data again into a spreadsheet.

Or you can save it as .pho file. Than you have the possibility to import the data again into the software.



3.1.6 Bootloader

If you have new devices you could get sure if the latest software version is on the devices. For this you have a bootloader.

MODULAR POWER MANAGEMENT	VERSION 21				
File Interface Main Menu					
phocos	Bootlo	bader	phocos		
	ЛІТ				
Bootloader	led to PC and MCU.				
2 Start bootloading by clicking the lo	wing buttons ->				
MCU Bootloading		MCU Bootload File:			
MPS Bootloading	AUTOMATIC ALL	 MPS Bootload File: 			
MPPT Bootloading	AUTOMATIC ALL	▼ MPPT Bootload File:			
Main Menu					

Please get sure that the MXI is installed correct and connected. Then you can start with bootloading the MCU, than the MPS and then the MPPT by clicking on the accordingly button.



3.1.7 Actual System

If you have imported already data than you can go to the actual overview window when you click on "Actual System".

MODULAR POWER N	NANAGEMENT	VERSION 21	
File Interface Main Menu	1		
phocos		Modular Power Management	phocos
		Help Assistent / Create New System	
		Import Status	
		Import Datalogger	
	day 00 💌	Import Daily Interval Datalogger	
		Import Saved Data	
		Bootloader	
		Actual System	



4 Technical Support

If you have any questions about the software, please contact:

Phocos AG Magirus-Deutz Str. 12 D 89077 Ulm Germany info@phocos.com www.phocos.com