# 5.0 Networking & communication

## **5.1 Introduction**

**CAUTION: Risk of Tampering!** 



The eTracer doesn't feature built-in network security. It is the responsibility of the user or network administrator to place the eTracer behind a network firewall to prevent unauthorized access.

The Ethernet port supports HTTP, TCP/IP protocols to provide a fully web-enabled interface between the eTracer and a LAN network. Some of the many features the Ethernet connection provides include:

- Monitor the controller from a web browser
- · Modify controller settings from a web browser
- · Create custom web pages to show system data
- · Send a text message if a fault or alarm occurs

This section provides a summary of each of the features. For detailed information about Ethernet connectivity and networking, please refer to our website at:

#### http://www.epsolarpv.com/

#### **Network Information**

Connect to the eTracer via an Ethernet network or connect the controller directly to a PC using an Ethernet cross-over cable. Use CAT-5 or CAT-5e twisted pair Ethernet cables with RJ-45 connectors.

Factory default network Settings:

DHCP	auto
IP	192.168.1.2 (If DHCP is not set.)
Subnet mask	255.255.255.0
Gateway	192.168.1.1
TCP/IP port	80
Web pages	

Connect the eTracer controller to the network using an Ethernet cable. Open a web browser on any PC on the network. Enter the IP address of the controller ('192.168.1.2' by default) in the address bar of the web browser. The eTracer user login webpage will load. Links are provided to Real Time Data, Ctr Para Set, Net Para Set, Log Query, Password, and Help Document pages. Pages served by the eTracer are ideal for retrieving quick information about the charge controller and making adjustments to network settings. However, there is no ability to customize the layout or data displayed. Also, information from multiple controllers cannot be displayed on the same webpage.

## 5.2 Setting

Set the eTracer IP address, corresponding subnet mask and default gateway and connect to network. Enter IP address of equipment at the address bar of browser and then the equipment can be monitored.

Web monitoring mainly includes such functions as user login, real-time data, control parameters setting, network parameters setting, log query and password modification, etc.

#### 1) User login

Not all users that are connected into Internet/Intranet can browse those data in the system. Generally password should be input so as to ensure safety of the system. Enter network password and press the button "log on", and if it is right, it will display monitoring page; otherwise, it will prompt "Password Error".

Impact Paseword       Impact Paseword         Impact Paseword       Impact Paseword	🗿 Input Password - Microsoft Intern	net Explorer		
Construction of the second sec	文件(1) 编辑(1) 查看(1) 收藏(1) 工具(1)	相助 (1)		
HE O P Unever Walvellaar hat linder ha IN 111 II. EPSOJ A.R.P.V. COM etracer MPPT Lipot Pasword Lipot Pasword Lipot Pasword	G AL - 🕤 - 🖹 🗟 🏠 🔎 🛤	r 📌 MARE 🕑 🍙 · 🍡 🚍 • 🔜 🕅 🕅 🏭 🤽		
Example AND	地址 @ @ E:\Etracer\Web\web2hex\html\index.b	i ta		🖌 🔁 种到
Input Paseword	E Constant	WWW.EPSOLARPV.COM	etracer MPPT	~
Input Pastword				
Input Paseword				
Input Pastword				
Input Pasyword				
Input Pasyword log on				
log on			Input Password	
			log on	2
(4) 第二日本(1)(1)(1)(1)(1)(1)(1)(1)(1)(1)(1)(1)(1)(	< () 2014		2 开始的图题	(>)

2) Real Time Data Click "Real Time Data" on the left side to view real-time operating parameters. . . . . .

毛标题 2 - Microso	ft Internet Explorer							
地址 (1) 🍓 http://192.168.	1.3/index2.html				💌 🔁 转到			
<b>2.</b>		w.epso	LARPV.COM	etrace	r MPPT			
Î	Real Time Data							
Real Time Data	Batt Voltage(V):	000.0	Batt State:	OVD				
Ctl Para Set	PV Voltage(V):	000.0	Charge State :	Floating				
<u>Curaia Sec</u>	Charge Current(A):	000.0	SOC(%):	00				
Net Para Set	Charge Power(KW):	0000	Remote Sensor Temp(℃):	000.0				
	Charge Energy(KWh):	000. OWH	Local Sensor Temp(°C):	000.0				
Log Query	Batt Max Voltage(V):	000.0						
	Batt Min Voltage(V):	000.0						
Password								
Help Document								
完毕					💣 Internet			

3) Ctr Para Set

Click "Ctl Para Set" on the left side to enter Control Parameter Set page and the system will display the current control parameter configuration. Users can also modify control parameters. After users modify control parameters and click "submit", if it is successfully adjusted, "OK" will pop out; otherwise, "error" will appear. Click "default", control parameters will recover to default values in line with current system voltage.

Notes: 'Batt Rate Voltage' as battery rated voltage is displayed according to the real system value, it is not changeable. If parameter modified in the period is not up to the standard range, dialogue box "illeagle para" will pop out and at the same time, the parameter will change to the previous value.

五标题 2 - Microsof	ft Internet Explorer				
文件(2) 编辑(2) 查看(2)	· 収線(A) 工具(T) 帮助(B)				27
🔾 fill • 🐑 · 🖹	😰 🏠 🔎 拨索 🤺 收藏夹 🤗	🔊 · 🛬 🖂 · 🖵 🖉	1 🕅 🇱 🦓		
地址 ① 截 http://192.168.	1.3/index2.html				🖌 🛃 💌
<b>P</b>	. 111	W.EPSOLARP	ECOM	etracer MPPT	
	Ctl Para Set				
Real Time Data	Batt Type :	Gel Battery	Batt Rate Voltage:	12	
	OVD(V):	16.0	BVR(V):	13.2	
Ctl Para Set	OVR(V):	15.0	UVWR(V):	12.2	
	CLV(V):	15.5	LVR (V):	12.6	
Net Para Set	ECV(V):	14.6	UVW(V):	12.0	
	BCV(V):	14.4	LVD(V):	11.1	
Log Query	FCV(V):	13.8	DLV (V):	10.8	
	Equalize Time(Min) :	030	Boost Time(Min) :	030	
Password	Coefficient:	5			
Help Document	Submit	Default			×**
(2) 売毕					Internet

#### 4) Net Para Set

Click "Net Para Set" on the left side to enter Network Parameter Set page and the system will display the current network parameter configuration. After users modify control parameter and click "submit", if it is successfully adjusted, "OK" will pop out; otherwise, "error" will appear.

Notes: If network type is DHCP, it is no need to configurate IP address; if it is Static

IP, it needs to configurate system IP address. MAC address cannot be modified.

毛标题 2 - Microso	ft Internet Explorer		🛛
文件(2) 編輯(2) 直看(2	) 収蔵し 工具の 相助の		
	🖲 👀 🏷 BOR 📈 🗞	*** 49 🗠 - 🧶 🖂 - 🦰 🏠 🕅 🕅 🛱 🛷	
3632 (D) 😢 http://192.168.	1.3/index2.html		P 9730
<b>- 20</b>		WWW.EPSOLARPV.COM	etracer MPPT
^	Net Pata Set		<b>^</b>
Real Time Data	○ DHCP ⊙ Static	= 1P	
<u>Ctl Para Set</u>	IP Address:	192 . 168 . 001 . 003	
Net Para Set	Netmask	255 . 255 . 255 . 000	
Log Query	Gateway:	192 . 168 . 001 . 001	
Password	MAC Address:	ed-e0-25-12-53-28	
Help Document	Submit		
< · · · · · · · · · · · · · · · · · · ·	<		>
(2) 完毕			Internet

#### 5) Log Query

Click "Log Query" on the left side to enter Log Query page. Users can choose "Data Log" or "Event Log", and after click "Submit", the system will display all current record page by page. Users can check records by turning pages. Click "Prev" to turn to the previous page and click "Next" to turn to the next page. Users can also choose to directly jump to any page to check records by entering page No., on "Input Page No" and click the button of "Jump", the page No. entered should be less than the total page No., otherwise, it will prompt errors.

🖨 无标题 2 - Microsof	t Internet E	xplorer										
地址 (1) 🍓 http://192.168.1	. 3/index2. html	~~ ~ .			22 <b></b>	201 <b>BA</b> 140						🖌 🎦 特到
ED												
BOLA	WWW.EPSOLARPY.COM etracer MPPT											
												<u> </u>
	Data Log	<b>~</b>				S	ubnit	Download	]			
Real Time Data		-								-		
Ctl Para Set	Date	Batt Voltage	Voltage	charge Current	Charge Power	Energy	RS Temp	Local Temp	SOC	Batt State	Charge State	
	2002-00- 01 00-00- 53	00. 0	00. 0	00.0	0000	000. 0	-030.0	-030.0	000	OVD	Floating	
<u>Net Para Set</u>	2011-01- 01 03-41- 53	00.0	00.0	00.0	0000	000.0	-030.0	-030.0	000	OVD	Floating	
Log Query	2002-04- 17 13-25- 53	00.0	00. 0	00. 0	0000	000.0	-030.0	-030.0	000	OVD	Floating	
Password	2002-04- 17 13-38- 53	00. 0	00. 0	00. 0	0000	000. 0	-030.0	-030. 0	000	OVD	Floating	
Help Document	2002-04- 17 13-49- 53	00. 0	00. 0	00. 0	0000	000. 0	-030.0	-030.0	000	OVD	Floating	
	2002-04- 17 13-00- 53	00. 0	00. 0	00. 0	0000	000. 0	-030.0	-030. 0	000	OVD	Floating	
	2002-04- 17 13-10- 53	00.0	00. 0	00.0	0000	000.0	-030.0	-030.0	000	OVD	Floating	
		Page NO	1/14	Las	st Next	Inp	ut Page NO		Juap			
	<											×
<b>約</b> 完毕											🔮 Intern	et
● 无标题 2 - Ticros	soft Intern	et Explo	rer									
文件(E) 編輯(E) 查着	·(V) 收藏(A)	II.C	帮助他	00			n <u>44</u> 00					<b>~</b>
() Ale · () · · ·	58 1 3/inder2 b	<i>&gt;&gt;&gt;</i> 3903€	X DOMA	•		_ #4 #	u 🕰 🧠					🗸 🎒 被到
inco in the s												
			Ţ	www	.EPSOLA	RPV.	COM					
											etracer I	MPPT
	Event I	Log 🖌					Sut	mit	E	ovnloa	1	
	Date	E	vent	State	Parameter							
Real Time Data	2002-0	4-17 53 B	att UVW	Start	01.2							
<u>Ctl Para Set</u>	2002-0	4-17 53 В	att LVD	Start	01.2							
Net Days Cat	2002-0 13-56-	4-17 53 B	att UVW	Start	01.2							
<u>ivet Para Set</u>	2002-0 13-56-	4-17 53 В	att LVD	Start	01.2							Ξ
Log Query	2002-0 13-27-	4-17 53 B	att UVW	Start	01.2							
Password	13-27-	53 B	att LVD	Start	01.2							
	2002-0 13-57-	4-17 53 B	att UVW	Start	01.2							
Help Document		Page	• NO 1/1	)	Last Next	)	Inpu	t Page	NO		Jump	
<	<											>
● 完毕											🔮 Internet	

#### 6) Password

Click "Password" on the left side to enter password modification page. After enter the old and new passwords, the system will judge if the old password is right and if the new passwords entered twice is the same. If it is right, the system will present "OK", otherwise, "Error" will appear.

Notes: The input only supports numbers 0-9.

🗿 无标题 2 - Microso	ft Internet Explorer	
文件(2) 編録(2) 査者(2)		
181E (D) 🙋 http://192.168.	1.3/index2.htal	📉 🛃 特別
- <b>2</b> 2.,	WWW.EPSOLARPV.COM	etracer MPPT
Î	Change Password	
<u>Real Time Data</u>	Old password :	
Ctl Para Set	New password :	
<u>Net Para Set</u>	Retype password :	
Log Query		
Password		
Help Document		
	• • • • • • • • • • • • • • • • • • •	> Tatavast
C 70-		- Anternet

.....

eTracer only records daily data of recent 30 days and it always records standard data as below. The space which can be used to record data will reduce with the increase of stored data.

General data:

- · Battery voltage
- Solar modules voltage
- Charging current
- Charging power
- · Intraday energy generated
- Battery temperature
- Controller temperature
- SOC percentage
- Battery status
- Charging status
- Warning/Error

## **5.3 Other Introductions**

### 1. CAN

MC1.5.3.81-4L port supports CAN bus protocol to be used to connect remote meter or controller. The remote meter offers features as below:

- Monitor controller status
- Modify controller parameters
- Display system data on the screen
- · Error or warning happens, displayed on the screen or LED indicator prompts

#### 2. RS-232

RS-232 port supports user-defined serial communication protocol to update controller software. Controller can be connected to PC with a cross-over serial line. Users can download from our home page the latest controller program and update software to update controller.

The way to download program file:

Turn off controller at first and make updating software on operation, which is as

follows:

🦑 ETracer Program Update	×
Step1:Program File(Lof)	
Browse	
File Description	
Step2:Serial Config	1
Serial COM1 V Baud 115200 V Open	

① Click "Browse" and choose the program file (type is LOF). If the file is not up to the requirements (wrong type, uncompleted or error with revision, etc), it will be prompted via dialogue box popping out. On "File Description" bar, the basic information on the file chosen will be displayed.

<sup>(2)</sup> Choose communication serial whose baud rate is 115200bps by default and click the button "Open".

③ Power on the controller. It will start downloading program and the progress bar displays the percentage.

④ Restart the controller after downloading program.

Notes: In the period of procedure programming, if the power is off or disconnected, it will prompt "connect time out".