

TL-SN220 -- User Manual

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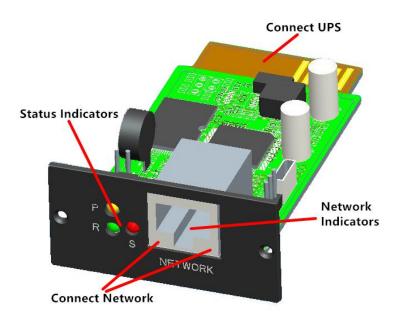
Revision Record

Version Number	Update Content	Date
v1.0	Initial Version.	January 2021
v2.0	Modified the email Settings in section 4.2.5A.	Sep 2021

1. Product Introduction

1.1. Overview

TL-SN220 is a built-in network SNMP card independently . It supports SNMPv1/v2 and v3 protocols, features e-mail alarm, historical events and historical data storage.Picture is shown as below:



1.2. Functions

- Support multiple operating systems (Windows, Mac, Linux)
- UPS can be monitored remotely through the network;
- Can realize web-based user interface;
- Support e-mail alarm;
- Multi-user permission management;
- Support DHCP;
- Support remote self-testing, shutdown and restart UPS functions (UPS support required);
- Support telnet, SSH, Web page configuration;
- Support scheduled tasks (timed self-test, power on/off);
- Historical events and historical data storage functions;
- Remote UPS monitoring and management can be performed through HTTP, SNMP, SSH, Telnet;
- Complete equipment event handling (including event recording and notification);

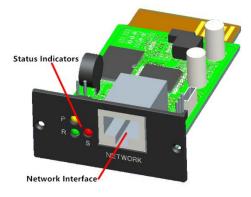
1.3. Features

> Networking methods: IP-based LAN, WAN, Internet, wireless Ethernet, etc.;

- > User permission management, safe, confidential and reliable;
- Support multiple configuration management methods such as Telnet, SSH, Web;
- Support scheduled task function, allow setting scheduled UPS on/off, scheduled battery discharge, etc.
- Support storage of 50, 000 historical data and 5, 000 historical event records;
- Built-in ultra-long-life system clock, support automatic timing to achieve time synchronization;
- Support SNMP V1/V2/V3, HTTP, DHCP, SSH, SSL and other network protocols;
- Support IPV6;
- Support E-mail alarm function;

1.4. Network Interface

10/100M RJ45 Ethernet interface, used to connect to the switch.

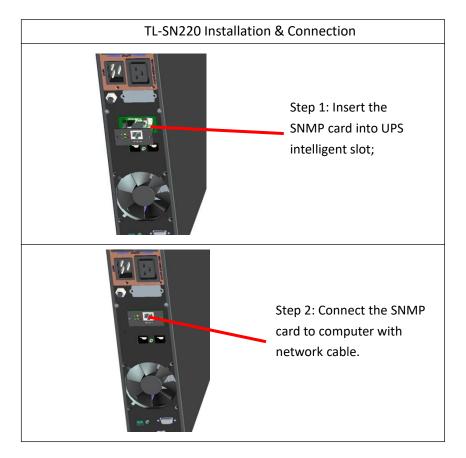


1.5. Definition of Indicator Lights

Power indicator yellow (Power), always on; Status indicator red (Status), off when normal, always on when failure; Run indicator green (Run), flashing when the program is running normally.

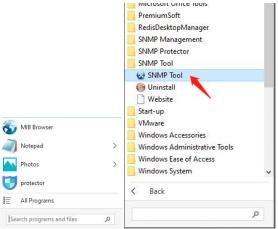
2. TL-SN220 Installation

2.1. TL-SN220 Installation & Connection



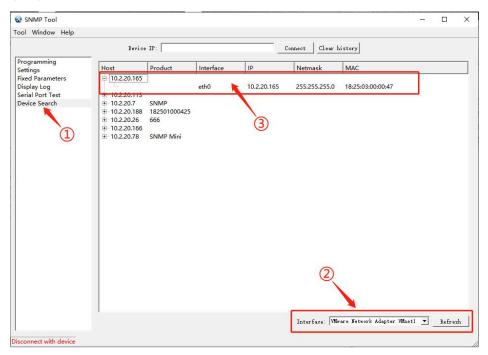
2.2. SNMP-Tool Installation & Usage

A. Download installation files from https://www.technoline-ca.com/, execute "SNMP_Tool_20xxxxxx_V1.x.x.exe" to start the install the software, users can find the icon of software in "Start menu--All Programs--SNMP_Tool" after installation.



B. Device IP address searching

If users can't know the current IP information because changing the IP address or other reasons, you can search the IP address of SNMP card by installed "SNMP-Tool", the specific methods are as follows: ①Click[®]Device Search[®], ②Choose current network port, click[®]Refresh[®] to query the SNMP card IP in the LAN.



C. Software verision upgrade

(1) Connect the device, input the IP of the device that needs upgrade, click "Connect"

After the connection is successful, there will be a green font in the lower left corner of the tool interface that displays "Connected to device".

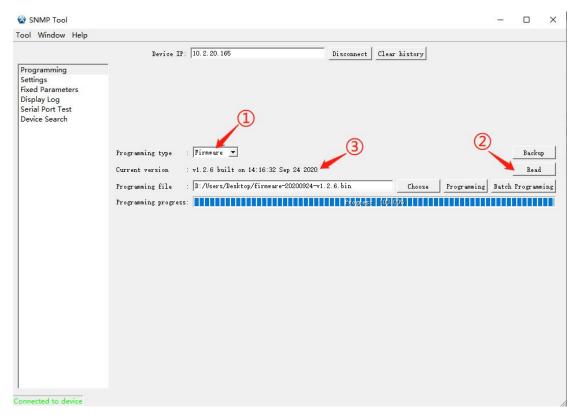
🗟 SNMP Tool ool Window Help			/		1				>
ool window help	Device	IP: 10.2.20.16	;	Di	sconnect Clea	r history			
Programming Settings	Host	Product	Interface	IP	Netmask	MAC			
Fixed Parameters Display Log Serial Port Test Device Search	 ☐ 10.2.20.165 ☐ 10.2.20.113 ☐ 10.2.20.113 ☐ 10.2.20.188 ☐ 10.2.20.166 ☐ 10.2.20.166 ☐ 10.2.20.78 	SNMP 182501000425 666 SNMP Mini	eth0	10.2.20.165	255.255.255	0 18:25:03:00:00:47			
					Interface:	VMware Network Adapter VMm	netl 💌	Refre	sh

(2) Upgrade the firmware , select the new version file(file type is firmware -20xxxxx-v1.x.x.bin), and click "Programming", it will prompt "Programming finish".

😵 SNMP Tool -		\times
Tool Window Help		
Device IF: 10.2.20.165 Disconnect Clear history Programming Settings Fixed Parameters Display Log Serial Port Test Device Search Current version : v1.2.6 built on 14:16:32 Sep 24 2020 Programming file : D:/Users/Desktop firmware=20200924-v1.2.6 bin Programming Batch Pr Programming progress: Connected to device	Backup Read rogrammir	<u> </u>

🐼 SNMP Tool					225		×
Tool Window Help							
Programming Settings Fixed Parameters Display Log Serial Port Test Device Search	Device IP: 10.2.20.165		Connect Clear hi	story			
isconnect with device	Programming type : Firmware Current version : v1.2.6 built Programming file : D:/Users/De Programming progress:	on 14:16:32 Sep 24 2020	X in	Choose Programmin	g Batch	Backu Read Frogramm	

Check whether the firmware upgrade is successful, as shown in the figure below: Programming --Programming type--select "Firmware"-- Read -- check the current program version.



(3)Upgrade the application, ①Programming type select "APP"② select the new version file(file type is snmp-20xxxxxv-v1.x.x.x.bin),③ click "Programming", wait about 30 seconds, it will prompt

"Programming finish". And then log in the background of SNMP card to check the software

version.

SNMP Tool	- 🗆 X
Tool Window Help	
	Device IP: 10.2.20.165 Disconnect Clear history
Programming Settings Fixed Parameters Display Log Serial Port Test Device Search	Programing type : AFF Current version : v1.0.2.5 built on 09:37:15 Feb 25 2021 Programing file : D:/Users/Desktopfinnp-mini-20210125-v1.0.2.4.bin Programing progress:
l	
Connected to device	
😵 SNMP Tool	- 🗆 X
Tool Window Help	
Programming Settings Fixed Parameters Display Log Serial Port Test Device Search	Device IP: 10.2.20.165 Connect Clear history Programming type : APP Current version : v1.0.2.5 built on 09:37:15 Feb 25 2021 Programming file : Dr/Users/De regramming inishl Programming progress: Sure Sure

Check whether the application upgrade is successful, as shown in the figure below: Programming - Programming type select "APP"- Read - check the current software version.

3. Web Login

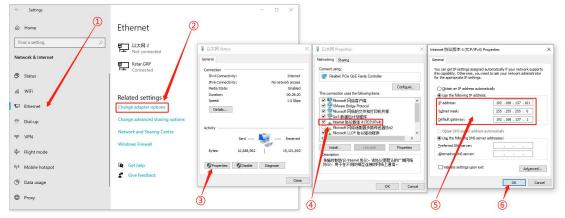
3.1. Logging in Management Page

Connect the computer directly to the SNMP card, and set the computer IP to the same network segment as the SNMP default IP (for example, the computer IP is set to: 192.168.137.101), and confirm that the network communication between the computer and the SNMP card is normal (verify by means of ping packets); open the browser (Google Chrome or IE browser is recommended), enter the default IP address "192.168.137.100" of the SNMP network card, enter the account and password (the default is admin), and log in to the SNMP monitoring system.

	0.00
SNMP Monitor System	
admin	
Login	

The method to modify the computer IP is as follows:

Open "Network & Internet", ①Select "Ethernet", ②Click "Change adapter options", double click the Ethernet connected, ③Click "Properties", ④Double click "Internet protocol version 4(TCP/IPv4)", ⑤Select "Use the following IP address:", fill in the IP address information of the same network segment as the SNMP card(for example:IP address is 192.168.137.101, subnet mask is 255.255.255.0, default gateway is 192.168.137.1) ⑥Click "OK".



3.2. Changing IP Address

Parameter settings - Network -- IPV4, set to automatically obtain IP (select On for DHCP) or static IP address (select Off for DHCP), set the static IP address of SNMP card, and fill in the corresponding subnet mask and gateway; when domain name resolution is used, you need to set the DNS server; click "Submit" to confirm after completing the settings, as shown in the figure below:

	Param Settings 🎢 Home			⊖ Exit
Real-time Info		Network SNMP E-Mail		
Param Settings	IPv4	IP Address		7
History Record	IPv6	DHCP	Ciose	
About	Network Link	IP Address Netmask Gateway DNS Server Primary DNS Server Secondary DNS Server	192.168.137.100 255.255.55.0 192.168.137.1 8.8.8 114.114.114.114	
		Reset Submit		

4. Web Monitoring Management

4.1. Real-time Information

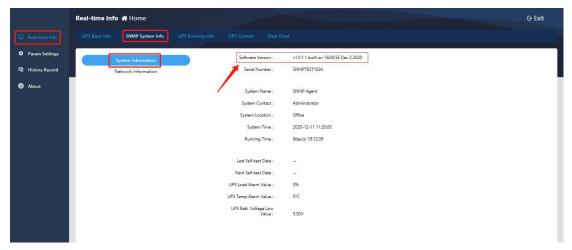
A. UPS Basic Information

This item allows viewing basic UPS information, including UPS information, battery information and rated information, as shown in the following figure:

	Real-time Info				⊖ Exit
📮 Real-time Info	UPS Basic Info SNMP System Info				
• Param Settings	UPS Information		_		
History Record	UPS Vendor :				
About	UPS Model :				
	Hardware Version :				
	Battery Information				
	Quantity :	1			
	Battery Voltage :	0.00V			
	Battery Capacity :	096			
	Last Replace Date :	01/01/00			
	Rated Information				
	Battery Rated Voltage :	OV			
	Rated Rectifying Information :				
	Rated Input Frequency :	OHz			
	Rated Bypass Information				
	Rated Bypass Frequency :	OHz			
	Rated Output Info :				
	Rated Output Frequency :	OHz			
	Rated Power :	kVA			

B. SNMP System Information

This item allows viewing system information (software version), network information (IP information), as shown in the figure below:



	Real-time Info 希 Home		@ Exit
😱 Real-time Info	UPS Basic Info SNMP System Info		
Param Settings	System Information	Link Information	
Ca History Record	Network Information	MAC Address : 00:25:18:10:00:18 Link Status : 100M Full Duplex	
About		Network Server	
		E-Mail Server: NTP Server: pool ntp.org	
		IPv4	
		IP Address : 192.168.137.100 Netmask : 255.255.255.0 Gateway : 192.168.137.1 Primary DNS Server : 8.8.8	
		Secondary DNS Server: 114.114.114	
		IPv6	
		IP Address : LinkLocal Address : fe800000.0000.0225.18ffe10.0018/64 IP-6To4 Address : Gateway : fe800/64 Primary DNS Sarver : Secondary DNS Server :	

C. UPS Operation Information

The content of UPS operation information is different according to the selected communication protocol. Taking MegaTec1:1 protocol as an example, UPS operation information includes input information, output information, and battery information, as shown in the following figure:

Input information:

Real-time Info Param Settings History Record About
Contract History Record
About

Output information:

		Real-time Inf	io 👫 Home						🕀 Exit
Q I				UPS Running Info					
0	Param Settings		Input Information		ĩ	Output Voltage :	0.0V		
-13	History Record		Output Information			Output Status :	Main Power Supply		
0	About		Battery Information		L	UPS Load :	0%		

Battery information:

	Real-time Info 者 Home				
		UPS Running Info			
• Param Settings	Input Information		Ten	mperature :	0.0°C
Contract History Record	Output Information		Batte	ery Status :	normal
About	Battery Information		Batter	ry Voltage :	0.00V
			Battery	y Capacity :	0%
			Last Self-	-test Time :	
			Next Self-	-test Time :	

D. UPS Control

The UPS control content is different according to the selected communication protocol. Take the MegaTec1:1 protocol as an example, it includes manual UPS self-check, manual power on/off

	Real-time Info of Home	⊖ Exit
🗔 Real-time Info	UPS Basic Info SIMIP System Info UPS Running Info UPS Control Data Chart	
• Param Settings	UPS Self-text	
History Record		
C About	□ 10s □ 10 EOD □ cutom □ = 00 □ Cutom □ = 00 ○ Control UPS Power Control UPS Buzzer Control Buzzer On/Off	

and buzzer on/off control, as shown in the figure below;

E. Data Chart

This item can be used to query the single day operating data change curve of the equipment by selecting a specific date. The data types include temperature (°C), output voltage, and load (%). You can select or cancel the type to be displayed by clicking the mouse. The curve recording interval is 90 minutes.

	Real-time Info # Home	G Exit
🖵 Real-time Info	UPS Basic Info SNMP System Info UPS Running Info UPS Control Data Chart	
• Param Settings	Date 2020-12-01 Query	
B History Record	-O- temperature (C)O- (or your order to (C)O- (or (C))	
About		
	3	
	22-	
	15-	
	10	
	5	
	0. 0001 01.13 0.225 0.517 0.449 0.601 07.13 0.825 0.627 10.49 1.201 13.113 14.25 15.37 16.49	

4.2. Parameter Settings

4.2.1. Parameter Settings

A. UPS Parameter Settings

Here you need to ①Select the UPS protocol according to the actual situation on site, ②Fill in the battery information、device ID ③Data store cycle, ④Customize communication parameters (no need to be set by default), after parameter setting, ⑤Click "Submit" and it's effective, as shown in the figure below:

	Param Settings # Home		⊖ Exit
💭 Real-time Info	UPSPara Set UPS Time Switch Network SNMP		
Param Settings	UPS Param	Basic Parameters	
History Record	Self-test UPS Alarm Value	UPS Protocol MegaTec-1:1 V	
About	urs kann saue	Device ID 1 Quantity of Batteries 1 Aumber of Single Battery Pack: 8 Battery Fund Charge Voltage (Unit: 0:01) 225 Battery Vel Calibration Value (Unit: 0:011) 1.87 Battery Vel Calibration Value (Unit: 0:011) 1.86 Custom Communication Parameters 2000-01-01	
		Custom Communication Enable Eas Band Band Bind Bind Bind Bind Bind Bind Bind Bi	

B. Self-check Settings

This function depends on whether the UPS host has a self-check function. The UPS self-check cycle can be weekly/monthly, and the self-check time can be customized, 10 seconds or until the battery voltage is low. Click [Submit] after completing the setting, as shown in the figure below:

	Param Settings 🖷 Home					⊖ Exit
🗔 Real-time Info	UPSPara Set UPS Time Switch					
Param Settings History Record About	UPS Param Self-text UPS Alarm Value			Self-text Cycle Self-text Day Self-text Start Time Self-text Laxt Time UPS Custom Text Time (Unit: Timin) Reset Submit	Week/ V Ban Wanks Monthly Monthly Set-Oreslang 1D Seconds V 0 ce sumber <= 50 V	
	Param Settings 希 Home					⊖ Exit
📮 Real-time Info	Param Settings # Home UPSPara Set UPS Time Switch	Network	SNMP	E-Mail >>		@ Exit
 Real-time Info Param Settings 		n Network	SNMP	E-Mail >> Self-test Cycle	Northy V	@ Exit
	UPSPara Set UPS Time Switch	Network	SNMP		Monthly V 1 V 14.92 1	⊖ Exit

C. UPS Alarm Value Setting

This item allows customizing the UPS communication loss time (for example, if 30 seconds is set, the UPS is offline when the communication is lost for 30 seconds), load alarm value, temperature alarm value, battery voltage low alarm value, UPS input/output voltage alarm Value, UPS alarm activation times (for example, if the setting value is 3, it will output alarm information when the program returns 3 consecutive polls); after completing the settings, click [Submit] to confirm.

Note: Except UPS communication loss time and UPS alarm activation times, when other custom

	Param Settings # Home			
Real-time Info	UPSPara Set UPS Time Switch Network SNM			
	UPS Param	UPS Communication Lost Time (Unit: 1s)	30000	
Contract History Record	Self-test	UPS Load Alarm Value (Unit: 1%)	0	
About	UPS Alarm Value	UPS Temperature Alarm Value (Unit: 1°C)	0	
		UPS Battery Voltage Low Alarm Value (Unit: 0.01V)	0.00	
		UPS Input Voltage High Alarm (Unit: 0.1V)	0.0	
		UPS Input Voltage Low Alarm (Unit: 0.1V)	0.0	
		UPS Output Voltage High Alarm (Unit: 0.1V)	0.0	
		UPS Output Voltage Low Alarm (Unit: 0.1V)	0.0	
		Battery Capacity Low Alarm (Unit: 1%)	0	
		Battery Remain Time Alarm (Unit: 1min)	0	
		UPS alarm activate times	3	

alarm values are set to 0, meas this type of alarm is not enabled.

4.2.2. UPS Time Switch

A. UPS Shutdown Action

This function allows selecting the time period of shutdown, shutdown conditions, and execution time of shutdown. After setting, click [Set] to confirm:

		Param Settin	gs 🕋 Home							⊖ Exit
	Real-time Info		UPS Time Switch							
		UPS Sh	utdown Action	1	Add Event					
ଜ	History Record	Weekl	y Time Switch		When betwe	en 00:00	~ 23	59	, if	All UPS Events 🗸 will in
0	About	Specifi	ic Time Switch WOL		0 5		minute(s) to close UPS	Set Delete		UPS All UPS Exemits All UPS Exemits UPS Overfload UPS Mains Power Interruption UPS Low Potential UPS High Temperature Netfleder I All Netfleder Events High Humidity Low Humidity Water Aiarm Gas Alarm Gas Alarm Security Alarm Security Alarm Security Alarm Security Alarm

B. Weekly Time Switch

This setting takes one week as a cycle. You can set the specific time of one day or several days in the cycle to perform the power on/off action, and you can set the minutes of sending an alarm before shutdown. After completing the setting, click [Submit] to confirm, as shown below:

	Param Settings 希 Home			⊖ Exit
Real-time Info	UPSPara Set UPS Time Switch			
Param Settings	UPS Shutdown Action		Power On(hh:mm)	Power Off(hh:mm)
History Record	Weekly Time Switch	Sunday	00:03	00:01
About	Specific Time Switch	Monday		
	WOL	Tuesday		
		Wednesday		
		Thursday		
		Friday		
		Saturday		
		Send Alarm 1	minute(s) before power off.	
		Reset Submit		

C. Specific Time Switch

This item allows setting the specific date and time to perform the power on/off action, and can set the minutes of sending an alarm before shutdown. After completing the setting, click [Submit] to confirm, as shown below:

	Param Settings 🏶 Home			ΘEx
📮 Real-time Info	UPSPara Set UPS Time Switch Network			
	UPS Shutdown Action	Date(YYYY-MM-DD)	Power On(hh:mm)	Power Off(hh:mm)
යි History Record	Weekly Time Switch	2020-12-11	00:03	00:01
Ø About	Specific Time Switch			
	WOL			
		Send Alarm 10	minute(s) before power off.	
		Reset Submit		

D. WOL

This item allows setting wake-up of specific host (the computer mainboard should support wake-up setting function), set to wake up when the power is restored or wake up when the power reaches the set percentage. After completing the settings, click [Submit] to confirm, as shown below:

		Param Settings 🖷	Home					⊖ Exit
Ģ	Real-time Info	UPSPara Set UPS	Time Switch Network					
•		UPS Shutdo	wn Action	Host			_	
67	History Record	Weekly Tin		- TOSK	IP	Mac	Operation	
0	About	Specific Tin		Host1	10.2.20.206	E8-B6-34-E5-55-35	test	
		(wo	DL	Host2			test	
				Host3			test	
				Host4			test	
				Hosto			test	
				Host7			test	
				Host8			test	
				Wake Up Condition				
								
				Wake up when po		Enable	~	
				Wake UP accordin	-	Enable	~	
				Wake Up Capacity	(Unit: 1%)	10		
				Reset Submit <				

4.2.3. Network Settings

This item allows setting the static IP address of the SNMP card, filling in the corresponding subnet mask and gateway, and setting the DNS server when using the domain name resolution function; click [Submit] to confirm after completing the settings, as shown below:

	Param Settings 🎢 Home			Ə Exit
😱 Real-time Info		Network SNMP E-Mail		
Param Settings	IPv4	IP Address		7
යි History Record	IPv6	DHCP	Close	
About	Network Link	IP Address Netmask Gateway DNS Server	192.168.137.100 255.255.255.0 192.168.137.1	
		Primary DNS Server Secondary DNS Server Reset	8888	

4.2.4. SNMP Settings

A. System Settings

This item allows changing the system information (system name, system administrator, system location), and setting the SNMP port. The default Agent port is 161 (the data transmission port for uploading real-time data when the platform issues polling instructions), and the Trap port is 162 (data transmission port for real-time upload of alarm information). After completing the settings, click [Submit] to confirm, as shown in the figure below:

	Param Settings 希 Home		A CONTRACTOR OF A CONTRACTOR A CONTR	⊖ Exit
🗔 Real-time Info		Network SNMP E-Mail >		
• Param Settings	System	System Information		
🗟 History Record	NMS	System Name	SNMP Agent	· · · ·
About	Trap	System Contact System Location SNMP Port Agent Port Trap Port MIB Library Type Reset	Stream Againt Administrator Office	

B. NMS Settings

If no IP address is set, the card has no access restrictions. Any IP can obtain the SNMP card operating data by visiting the SNMP card; if the IP, community string and version are set, only the IP added in the settings can visit the device;

	Param Settings 希 Home					(
📮 Real-time Info		Network SNM	P E-Mail			
Param Settings	System	Г	IP	Version	Community	Username
B History Record	NMS	192	168.137.205	v1 & v2C 🗸	public	[
O About	Trap			All 🗸		
				All 🗸		
				All 🗸		
				All 🗸		
				All 🗸		
				All 🗸		
				All 🗸		

C. Trap Settings

This item allows setting the monitoring server IP and version (SNMPv1 Trap, SNMPv2 Trap, SNMPv2 Inform, SNMPv3 Trap, SNMPv3 Inform), and filling in the community string (can be understood as the transmission password of the SNMP protocol, the SNMP card and the connected monitoring platform should have consistent setting). After the above settings are completed, the alarm information of the SNMP card can be uploaded to the designated monitoring platform in real time, and the number of retries and retry interval can be set. After completing the settings, click [Submit] to confirm, as shown below:

	Param Settings 者 Home		@ Exit
📮 Real-time Info		SNMP E-Mail >>	
	System	IP Version Community	Username
🕼 History Record	NMS	10.2.2 SNMPv2 Trap V public	
About	Trag	Inone Inone Inone Inone	
		<pre> Retry Times Retry Interval (Unit: 1s) Reset Submit </pre>	,

4.2.5. E-Mail Settings

A. Server Settings

This item needs to set the e-mail server address(Only SMTP mail servers are supported, POP3 and IMAP are not supported), server port number(For example, the default port number of the non-encrypted mailbox is 25, and the default port number of the SSL/TLS encrypted mailbox is 465 or 587), sender address (same as the sending e-mail account), sending e-mail account and sending e-mail password. In addition, you can check whether the e-mail is encrypted and whether to send a test email. After completing the settings, click [Submit] to confirm, as shown below:

	Param Settings 者 Home		G Exit
🗔 Real-time Info		Network SNMP E-Mail	
Param Settings History Record About	Alarm User Data User	Server Address Server Port Encrypt Sender Address Need to Auth? Account Password Send test mail?	mail kstar.com.cn 25 None abc@kstar.com.cn Yes abc@kstar.com.cn sending e-mail account < sending e-mail password No whether to send a test email
Real-time info Azum Settinge History Record About	Param Settings & Home PSPara Set UPS Time Switch Nerwork S Second Alarm User Data User	ALL EMAIL >> Sever Address mails Sever Paddress 20 Incrypt Usin Sender Address and Sender Address and Need to Auth? Yes	C Exit ater com on v stater com on v stater com on v

B. Alarm User Settings

This item needs to fill in the e-mail account that will receive the alarm email and select "Yes" for Enable to activate the e-mail alarm function. After completing the settings, click [Submit] to confirm, as shown below:

	Param	Settings 👫 Home									⊖ Exit
Real-time Info				E-Mail							
O Paran Settings		Server			Enable	Yes 🗸	-				
B History Record		Alarm User			Account1	lalala@kstar.com.cn	-				
About		Data User			Account2						
					Account3 Account4						
					Account4 Account5						
					Accounté						
					Account?						
					Account\$						
					Reset Submit						

C. Data User Settings

This item is to regularly receive the operating history data of the previous day (00:00 to 23:59) of the device. Enable this function by selecting "Yes", selecting the sending time, and filling in the e-mail account that receives the data. After completing the settings, click [Submit] to confirm, as shown below:

	Param Settings 🖷 Home		
Real-time Info		-Mail >>	
Param Settings	Server	Enable	Ves V
History Record	Alarm User	Send Time	12:00
About	Data User	Account	lalala@itstar.com.cn
		Account2	
		Account3	
		Account4	
		Account5	
		Account6	
		Account7	
		AccountS	
		Result	

4.2.6. System Users

A. User Settings

This item allows adding users, filling in user name and password, and setting user permissions (read & write). After completing the settings, click [Submit] to confirm, as shown below:

	Param Settings 希 Home			⊖ Exit
💭 Real-time Info	< System User System T			
• Param Settings	User	User	Password	Privilege
යි History Record	SSL	admin	🔒	Read & Write 🗸
About		ups	·····	Read & Write 🗸
C Fillen			Ê	Read
				Read
			Ê	Read 🗸
				Read 🗸
				Read
				Read
		Rest Submit		

B. SSL Settings

This setting enables HTTPS access mode, and SSL public key and SSL certificate need to be uploaded.

	Param Settings # Home	⊖ Exit
🗔 Real-time Info	<< System User System Time Language	
• Param Settings	User SSL Public Key	
යි History Record	SSL Uplead SSL Public Key Public Key File(*key) Choose	Upload
About		
	SSL Certificate	
	Upload SSL Certificate Certificate(* pem,* ca or * ort) Choose	Upload
	нтря	
	HTTPS Enable Close V Submit	
	prompt: The maximum size of the uploaded file is 40MI	

4.2.7. System Time

This item allows setting the system time and selecting the system restart method:

① Network time server settings: Fill in the time synchronization period, time server address, time zone, and click [Submit] to confirm;

② Manual setting: Click [Current PC Time], and then click [Submit] to manually synchronize the current computer time;

③ Automatic restart: Fill in the automatic restart period in minutes;

④ System restart: Click [Reboot] for 30 seconds to restart the device.

	Param Settings # Home	⊖ Exit
Real-time Info	<< System User System Time Language	
Param Settings History Record About	Network Time Server Time Sync Cycle (Links 1a) Time Server Address Totes Zone Time Zone Time Zone Time Status	
	Manual Settings Current System Time (2005-01-05 02-47-11) Current PC Time Extend Submed	
	Auto Reboot Auto Reboot Cycle (Julis: Timinute) Comp Column	
	System Reboot Reboot System in 30 Seconds (Rebox	

4.2.8. Language

This item allows setting the system language (Simplified Chinese/English) and the message language (Simplified Chinese/English). After completing the settings, click [Submit] to confirm, as shown below:

	Param Settings # Home	⊖ Exit
💭 Real-time Info	<< System User System Time Language	
Param Settings	System Language	
යි History Record	Language: 置体中文 V	
About		
	Email/Message Alert Language	
	Language:	
	Reset Submit	

4.3. History

Historical record capacity: 60, 000 data logs (if the historical data recording interval is 1 minute, the historical data can be saved for 40 days), 5, 000 event logs and setting logs, and 10, 000 environmental logs.

4.3.1. Data Log

By filtering the time period, you can query the equipment running data log.

	-	Date/Time	InVol (V)	AbnorlV (V)	OutVol (V)	Load (%)	InFreq (Hz)	BattVol (V)	DevTemp (°C)
About		2020-12-11 14:44:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:43:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:42:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:41:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:40:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:39:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:38:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:37:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:36:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:35:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:34:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:33:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:32:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:31:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2020-12-11 14:30:36	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4.3.2. Event Log

By filtering the time period, you can query the equipment event log.

	History Record # Ho	me			G Exit
Real-time Info	Data Log Event Log				
Param Settings	Time : 2005-01-01	~ 2021-03-01	Query		
		Date/T		Event	State
About		2005-01-01		UPS communication lost	State
		2005-01-01		UPS communication lost	
		1.7			

4.3.3. Set Log

By filtering the time period, you can query the equipment setting log.

	History Rec	ord 🖷 Hon	ne					⊖ Exit
Real-time Info			Set Log Export 1					
Param Settings	Time : 20	05-01-01	~ 2021-03-01	Query				
		-	Date/T		Event	Set value1	Set Value2	
About			2005-01-05	02:55:55	Battery self-test	0	0	
			2005-01-05	02:55:50	Battery self-test	1	0	

4.3.4. Export Log

By filtering the time period, select the log type to be exported, and click [Export] to download the log file in Excel format. After the download is successful, click [Close] to complete the log export.

	History Record # Home	⊖ Exit
🗔 Real-time Info	Data Log Event Log Set Log Export Log	
Param Settings	Time : 2020-12-11 ~ 2020-12-11	
 History Record About 	Export Type Data Log Export	
	Event Log Sertog Env Dala Log	
	History Record # Home	G Exit
D Roat-time Info		
Param Settings		
About		
	Current Export Status Report Completely Distribut	

4.4. About

4.4.1. Web Page Upgrade

[System Information] allows viewing the current software version. When there is a version update, ① Click [Select]; ② Select the upgrade file named snmp-mini-2020xxxx-v1.0.x.bin; ③ Click [Upgrade].It will prompt "File Upload Complete!".

	About 🕂 Home	202	:1-03-01 14:21:59	UPS communication lost	G Exit
Real-time Info	About				
Param Settings	System Information		ý.		
History Record	Software Version :	v1.0.9.5 built on 08:57:52 Mar 1 2021	rent software version		
About	Serial Number :	123456			
	Web Version :	v1.0.1 2020-01-29	20 D		
	Software Upgrade	2	1 3		
			1 1		
	Firmware Upgrade :	25-v10.9.5.bin Sel	ect Upgrade		
		Up Up	File Upload Complete!		
	Export Settings				
	Export File :	File Set	oct Download		
	Import Settings				
	Import File :	File(*.config) Sel	ect. Import		
	Factory Reset				
	Factory Reset :	Restore			

4.4.2. Export/Import Settings

Export settings file: Export a file containing all the configuration information of the current equipment (suffix format .config);

Import settings file: Import a file containing equipment configuration information (suffix format .config);

	About 🖷 Home		⊖ Exit
Real-time Info	About		
• Param Settings	System Information		
History Record	Software Version : v1.0.2.5 built on 09-38-04 Feb 25 2021		
About	Serial Number : 320167977AC0569500032		
	Web Version : v1.0.1 2020-01-29		
	Software Upgrade		
	Firmware Upgrade : Upgrade File(* km)	Select Upgrade	
	Export Settings		
	Export File : File	Select Download	
	Import Settings		
	Import File : File (* coufig)	Select Import	
	Factory Reset		
	Factory Reset : Rotstore		

4.4.3. Reset

About -- Factory Reset, (1) click [Restore], (2) when a confirmation box pops up, click [Confirm] to restart the equipment and restore the factory settings.

	About		
] Real-time Info	System Information		
Param Settings	Software Version : v1.0.2.5 bu	iit on 09:38:04 Feb 25 2021	
History Record		AC0569300032	
About	Web Version : v1.0.1 202	-01-29	
	Software Upgrade		
	Firmware Upgrade :	Upgrade File(*Ján) Select Upgrade	
		Prompt X	
	Export Settings	This operation will restart the device. Do y ou want to continue?	
	Export File :	File Conferm Cancel	
	Import Settings		
	Import File :	File(sconfig) Select Import	
	Factory Reset		
	Factory Reset : Rostore		

5. Shutdown Protection Software--SNMP_Protector

SNMP_Protector is a shutdown protection software used with UPS and SNMP card.After installing SNMP_Protector on Windows, it will shotdown the computer when "Main circuit abnormal, battery low, ups abnormal shotdown "occurs.

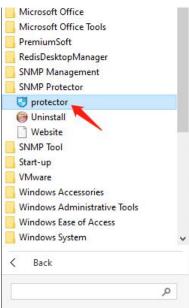
5.1. SNMP_Protector Installation

① Download the installation file from https://www.technoline-ca.com/, execute

"SNMP_Protector_V1.xxxx.exe" to install the SNMP_Protector;

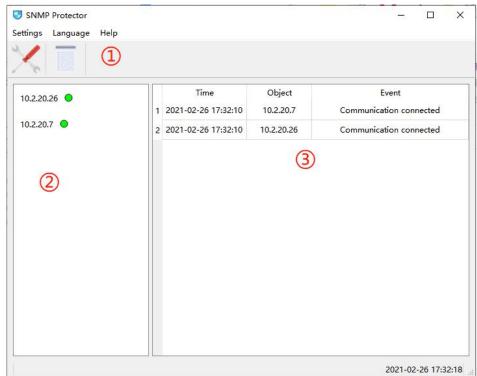
② After installation, users can find "SNMP_Protector" in Windows "Start", click "protector"

to start.



5.2. SNMP_Protector Usage

The software interface is mainly divided into three parts: (1) Menu setting bar, (2) Device list, (3) Alarm information list; as shown below:



A. Language Setting

The default language is English, users can, Click [Language], Select the interface language type as English or Chinese.

中文 中文 10.2.20.26 ●		Time	Object	Event
10.2.20.20	1 2	2021-02-26 17:32:10	10.2.20.7	Communication connected
10.2.20.7 🔵	2 2	2021-02-26 17:32:10	10.2.20.26	Communication connected

B. Host Addition

(1)Click Setting icon, (2)Click [Add], (3)Select SNMP v1/v2(default), (4)Fill in the host(SNMP card)IP address, (5)Click [Sure] to complete the device addition.

Note: Since the software provides shutdown protection by receiving Trap messages from SNMP cards, continue to run SNMP_Protector on the computer that needs shutdown protection. In addition, set the IP address of the computer to be shut down on the SNMP card page. The path is as follows: Parameter setting -- SNMP-trap, enter the IP address of the computer to be shut down, and set the version to SNMPv2 Trap. The community character is the same as the public character set on SNMP_Protector, and the default is public.

SNMP Protector	🙂 Settings 🔷	- 🗆 ×	SNMP Protector	U Settings	< – 🗆 ×
ettings Language He	General Most connection	-	Settings Language	He General Nost connection	-
1022026 • 10.2201 •	Host address SNMP port SNMP version 1 0.2.20.26 161 SNMP v1/v2 2 10.2.20.7 161 SNMP v1/v2 2 10.2.20.7 161 SNMP v1/v2 2 Mail Baily Resire Varning sessage 7 mm splication before shatdenn cosputer res Files (co0)/EXTM-Teal.ec. Proves Rucinum execution time: 00 sinute(s)	Event ication connected ication connected	10.220.7	Host address SNMP port SNMP version Add SNMP version SNMP version SNMP version SNMP version SNMP version SNMP version SNMP version Fassword: SNMP version Fassword: SNMP version Fassword: SNMP version Fassword: SNMP version Fassword: SNMP version Fassword: SNMP version Fassword: SNMP version SNMP version SNMP version SNMP version Fassword: SNMP version SNMP version Fassword: SNMP version SNMP version SNMP version SNMP version Fassword: SNMP version SNMP version Fassword: SNMP version Fassword: SNMP version SNMP versi	Event ication connected ication connected
	Sure Cancel	2021-02-26 17:36:29		Sure Cancel	2021-02-26 17:37:24

C. Log Query and Export

(1) Click Log icon, (2) Select the query time, click [Read], (3) Display the query results, (4) Click [Save as] to Excel file.

	U Event log			
<u> </u>	2) Start date: 2021	-02-26 V End date: 2021-02-26 V	Read
10.2.20.2	Date	Host address	Event	
	1 2021-02-26 17:39:2	10.2.20.165	Communication connected	
10.2.20	2 2021-02-26 17:32:1	10 10.2.20.26	Communication connected	
10.2.20.165 🔵	3 2021-02-26 17:32:1	10 10.2.20.7	Communication connected	
1	4 2021-02-26 11:57:5	57 10.2.20.7	Communication connected	
(1)	5 2021-02-26 11:57:5	57 10.2.20.26	Communication connected	
	6 2021-02-26 11:57:4	41 10.2.20.26	Communication connected	
	7 2021-02-26 11:57:4	41 10.2.20.7	Communication connected	
		3		

	U Event log		
S 1000		Start date: 2021-02-3	26 🗸 End date: 2021-02-26 🗸 Read
0.2.20.26 🔘	Date	Host address	Event
0.2.20.7 🕒	1 2021-02-26 17:39:28	10.2.20.165	Communication connected
0.2.20.7	2 2021-02-26 17:32:10	10.2.20.26	Communication connected
0.2.20.165 🔘	3 2021-02-26 17:32:10	10.2.20.7	Communication connected
	4 2021-02-26 11:57:57	10.2.20.7	Communication connected
	5 2021-02-26 11:57:57	10.2.20.26	Communication connected
	6 2021-02-26 11:57:41	10.2.20.26	Communication connected
	7 2021-02-26 11:57:41	10.2.20.7	Communication connected
		(4)	Save as Clear OK

D. Version Information

Click [Help]--[About], software version will be shown in the pop-up window.

SNMP Protector Settings Language Help			- 0 ×	SNMP Protector Settings Language	Help	>
🗙 🔳 🖳	About			\times		
10.2.20.26	Time	Object	Event	10.2.20.26 🔵	Time Object	Event
	1 2021-02-26 17:32:10	10.2.20.7	Communication connected		1 2021-02-26 17:32:10 10.2.20.7	Communication connected
10.2.20.7 🔵	2 2021-02-26 17:32:10	10.2.20.26	Communication connected	10.2.20.7 😑	C About	× nication connected
10.2.20.165 🔵	3 2021-02-26 17:39:28	10.2.20.165	Communication connected	10.2.20.165 😑		nication connected
					SNUP Protec Built on Prote The propunt on protection by SN	121 10:36:52 red for power off
			2021-02-26 17:43:57			2021-02-26 17:45:24

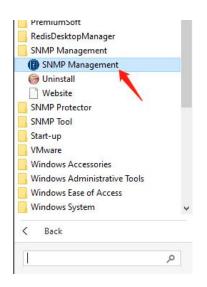
6. Centralized Monitoring Software--SNMP Management

SNMP Management is a software for batch unified management of SNMP devices. After adding SNMP devices, the software can record the running data and configuration of the UPS, and can perform remote control such as shutdown and self-checking of the UPS.

6.1. SNMP Management

① Download installation file from<u>https://www.technoline-ca.com/</u>, execute "SNMP_Management_20xxxxxx_V1.xxxxx.exe";

2 After installation, users can find "SNMP_Management" in Windows "Start", click "SNMP Management" to start.



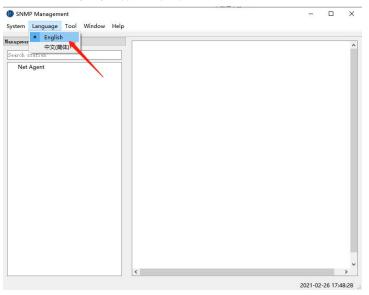
6.2. SNMP Management Usage

The software interface is mainly divided into three parts: (Menu bar, @Management station (3)Main data interface, as shown in the figure:

(B) SNMP Management System Language Tool Window Help 1	50 - 1 575	×
Management station		^
Search station		
Net Agent		
2		
3		
		~
<		>

A. Language Setting

The default language of the software is English, and the user can choose from the menu bar, "Language", to select the language type displayed on the interface.



B. System Setting

System settings are used to set the communication parameters of the software and SNMP

devices:

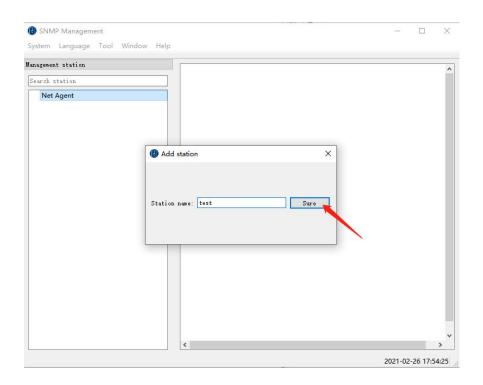
- SNMP Version: SNMP protocol version, this software supports SNMP v1 and SNMP v2c;
- Polling cycle: Cycle of software polling device data;
- Polling timeout: Timeout of polling single device;
- Store data cycle: Cycle of storing device data;
- Polling retry: Number of retries after polling failed.

agment station		
earce station Net Agent		
	System Settings ×	
	SMMP Version : v2o	
	Folling cycle : 5000 ms	
	Polling timeout : 100 ms	
	Store data cycle: 60 s	
	Polling retry : 1	

C. Station Addition

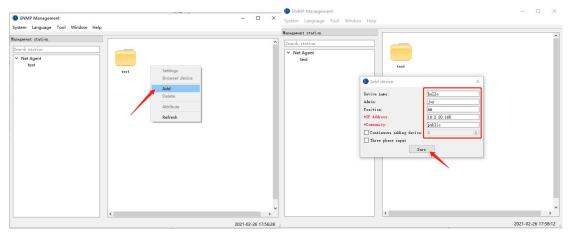
When using, firstly need to add the corresponding station in the Net Agent category: right-click the Net Agent item on the left side of the interface, select "Add", after completing the station name, click the "Sure" to complete the addition of the main station;

🚯 SNMP Management System Language Tool Window Help	- ×
Management station	
Search station	
Net Agent	
Add	
Delete	
Rename	
Attribute	
Refresh	
<	



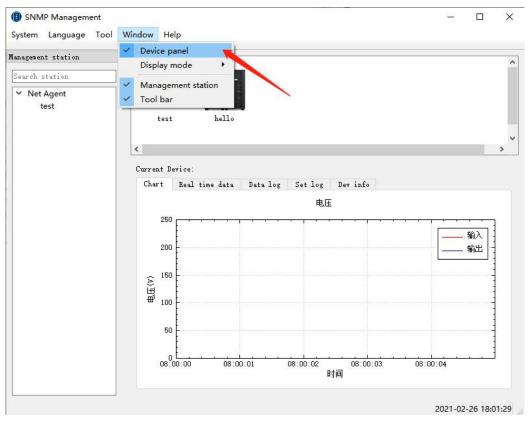
D. Device Addition

After completing the addition of the master station, you need to add the device under the corresponding station, click the name of the added station, right-click on the device data interface on the right, and then select "Add", the software will pop up the device addition interface, fill in.Then, click "Sure", the device will be added to the corresponding station, and the software can monitor the device in real time.

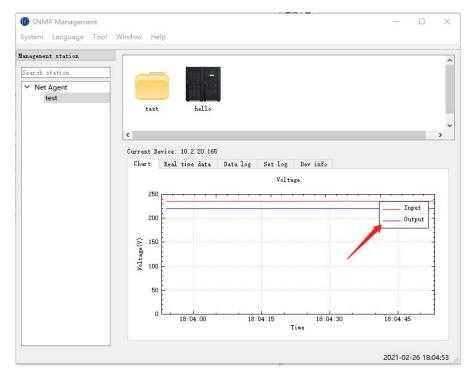


E. Device Panel

Click "Window--Device panel" to open the data panel, select the device to view the related data;



(1) Chart: Display the dynamic curve diagram of the input and output voltage of the device, and can visually observe the changes of input and output voltage in real time.



agement station							
arch station							
Net Agent							
test							
	test	hello					
	<						>
	Current Device:						
	Chart Real	time data Da	ata log Set log	Dev info			
	Battery	1	Input		Output		
	Capacity:	100 %	Line voltage:	235.5 V	Voltage:	220.1	v
	Voltage: Temperature:	13.68 V	Line max voltage: Line min voltage:		Frequency:	0.0	Kz
	Current:	0.0 A	Frequency:	50.0 Hz	Load:	0	8
		10	\			50 - X3	
			N				

③ Data log: Users can choose to read the data records within the time range by themselves. First select the start date and end date of the data record to be queried, and then click the "Sure" button to query the data records within the selected date range. The software supports exporting data records to various types of Excel files. Click the "Export" button to export the currently read data records. Click the "Clear Logs" button to clear all data records of the currently selected device.

Search station						
✓ Net Agent						
test	test	hello				
	<					>
	Current Device: 10.2			(1)	0 a	
	Current Device: 10.2 Chart Real time		Set log De	v info	Ĭ Ň	
(4)		-	hadroscanescos		1	1
	Clear logs Start	date: 2021-02-26	6 ∨ End date:	2021-02-26 ~	Sure Ex	port
	Date	Battery capacity	Battery voltage	ittery temperatu	Battery current	npu ^
	1 2021-02-26 1	<mark>100</mark>	1 <mark>3.</mark> 62	27.0	0.0	
	2 2021-02-26 1	100	13.62	27.0	0.0	
	3 2021-02-26 1	100	13.62	27.0	0.0	
	4 2021-02-26 1	100	13.62	27.0	0.0	
			13.62	27.0	0.0	
	5 2021-02-26 1	100	TOTOL			
	5 2021-02-26 1 6 2021-02-26 1	100	13.68	27.0	0.0	
				27.0	0.0	_

(4) Set log: Record software settings record.

- (5) Dev info: Display current device information connected to SNMP card.
 - Model: Device model connected to SNMP card;
 - Name: Device name connected to SNMP card;
 - UPS firmware version: UPS connected to SNMP card;
 - Date of manufacture: Device's date of manufacture;
 - Serial number: Device's manufacture serial number;
 - Agent firmware version: Agent version number of SNMP card.

F. Version Information

Click [Help]--[About], can view the software version information in the pop-up window, including software name, version number, buid date of the program, copyright attribution and application introduction.

() About	×
	SNEP Management v1.0.3
	Built on Feb 5 2021 10:40:24
	The program is used for device management and settings by SNMP.