
SNMP Card Lite

Basic Web-based SNMP Card for UPS

User's Manual

Of SNMP CARD LITE (NML)



Product Introduction

The SNMP LITE CARD UPS network monitoring adapter supports basic UPS monitoring functions with an intuitive user interface and is an entry level UPS monitoring product to meet the general monitoring requirement of the Powershield single phase UPS portfolio.

Functional Characteristics

1. Stand-alone embedded system
2. User configurable accessibility rights
3. The built-in optimized IP Power communication protocol ensures real-time performance of data collection and can be used together with IP Power SE software to realize remote centralized monitoring.
4. Supports WEB browser configuration management modes.
5. Users can remotely control UPS shutdown, self-test, and restart.
6. Supports standard UPS MIBs (RFC1628) and PPC MIBs.
7. 10/100Mbps Ethernet network
8. Support TLS/SSL protocol
9. Automatically sends event and alert notifications via E-mail, SNMP Trap and IP Power messages
10. With IP Power SE software installed, Network servers/workstations can be safely and smoothly shut down to avoid data loss and equipment damage caused by utility power failure.
11. Support SSL/STARTTLS encrypted mailbox protocol (For example, Gmail, Outlook, etc.

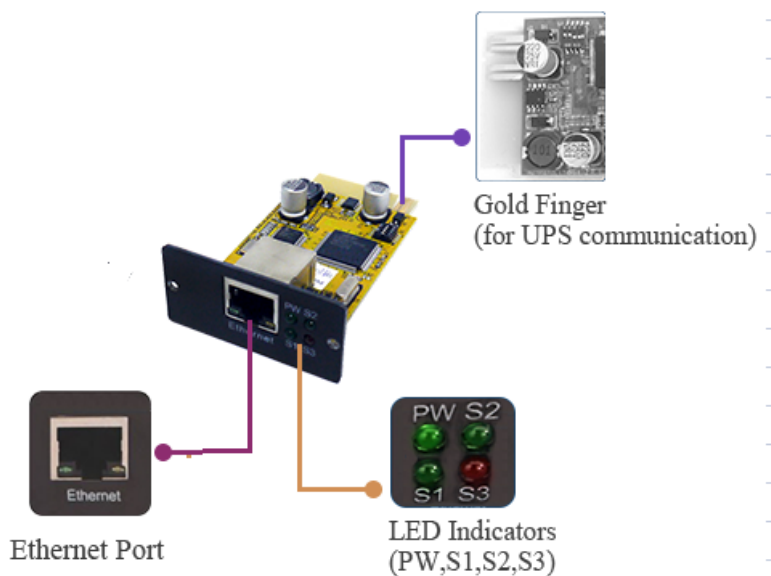
Installation Requirement

- The UPS with RS232 port or internal slot;
- The computer (with administrator privileges) with Ethernet port;

Note: Please read this user manual before installation.

1. Ports Definition

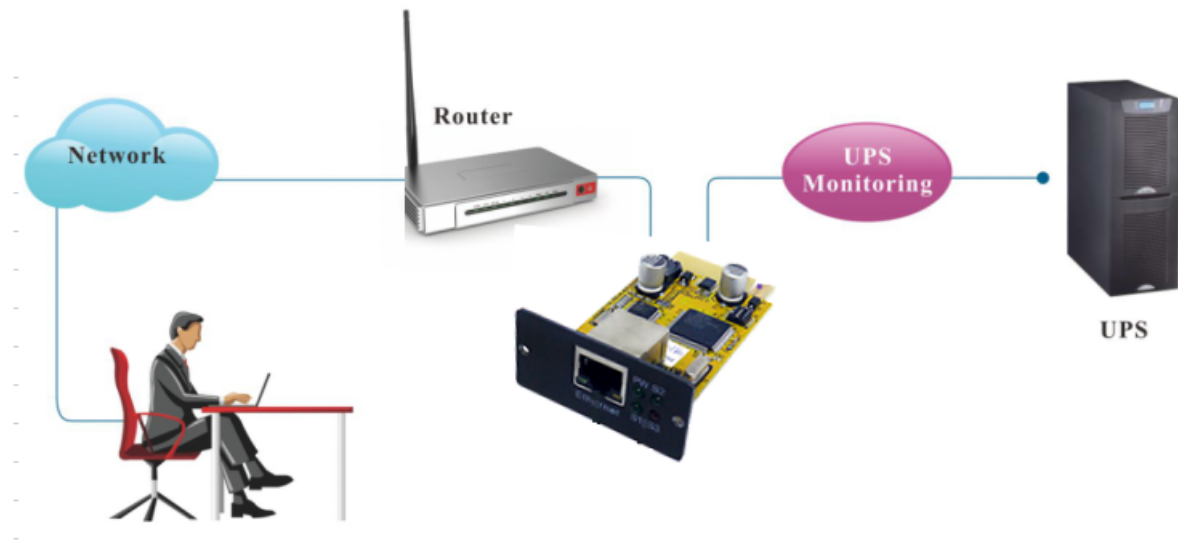
SNMP Lite (NML) network card



- ① Ethernet Port: UTP 10/100M RJ45 Ethernet port;
- ② PW (Green): Power status indicator, constantly on means power connected well, no light means no power connected;
- ③ S1 (Green): Running indicator, slow flash is normal;
- ④ S2 (Green): Not used;
- ⑤ S3 (Red): Device status indicator (red), constantly on means connected well with UPS and have data communication, flash means disconnected or UPS communication failed;
- ⑥ Gold Finger: Insert into UPS internal slot.

2. Installation

2.1 Network Diagram

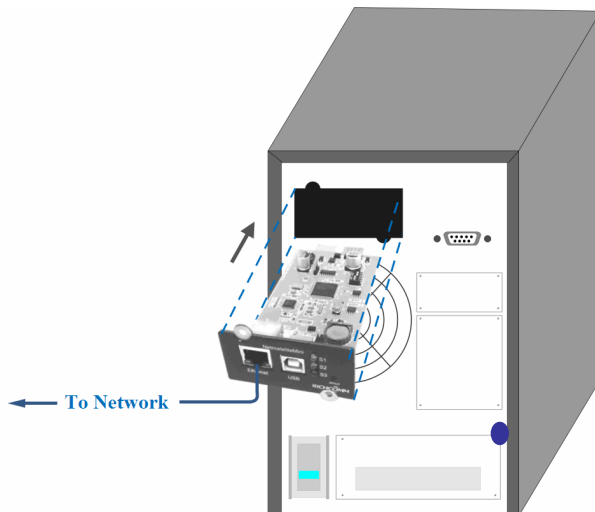


2.2 Hardware Installation

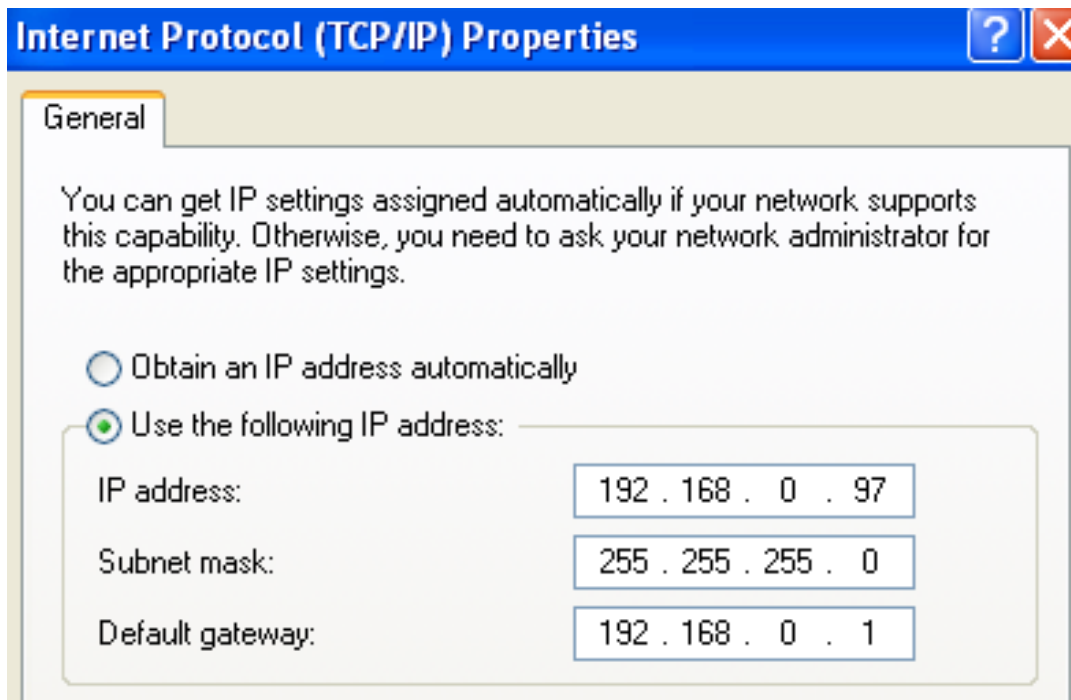
Internal SNMP Cards

Procedure:

- ① Insert internal SNMP card to UPS slot
- ② Use T568B network cable connect to network



2.3 Set Network Segment



For initial configuration, first we should set a same network segment before sign in web interface, since default IP is: **192.168.0.100**, so network segment should be set as **192.168.0.XXX**

2.4 Command “ping”

Before sign in the web interface, we can check the default IP address whether available in your network by command “ping”

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>ping 192.168.0.100

Pinging 192.168.0.100 with 32 bytes of data:

Reply from 192.168.0.100: bytes=32 time=5ms TTL=255
Reply from 192.168.0.100: bytes=32 time<1ms TTL=255
Reply from 192.168.0.100: bytes=32 time<1ms TTL=255
Reply from 192.168.0.100: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms

C:\Documents and Settings\Administrator>
```

Ping Pass

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Administrator>ping 192.168.0.100

Pinging 192.168.0.100 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Documents and Settings\Administrator>
```

Ping Fail

2.5 Sign in Web Monitoring Interface



172.16.89.220

After completing the above steps, open a web browser (IE/firefox/chrome etc), input default IP address **192.168.0.100**

Sign in

http://172.16.89.220

Your connection to this site is not private

Username

Password

Sign in

Cancel

Input user name and password , default user name & Password are both **“admin”**.
(User name and Password by can be changed by setting)

2.6 Web Monitoring Interface

After entering the user name and password, the monitoring homepage will display the UPS current status and the user can commence the desired changes to the SNMP Lite configuration settings

Connection Status	Device Connection		
AC Status	AC Normal	Battery Status	Battery Voltage Normal
Running Status	Invert	UPS Status	UPS Normal
UPS Type	Online	Testing Status	Non-testing
On-Off Status	Normal Output	Beeper Status	Off

<Home page>

3. Software Configuration Setting Introduction

3.1 UPS Information

Sub-Menu:

- System Information
- Device Information
- Current Status
- Remote Control

3.1.1 System Information

This page is to display SNMP Lite card basic information and network information. The information shown is provided by SNMP Card Lite SNMP card itself and parameter settings

The screenshot shows the NetmateLite web interface. The top navigation bar includes the PowerShield logo, the title 'NetmateLite', and user information: 'admin Welcome' and 'Authorization: Manage Time: 2082-5-12 8:1:1'. The left sidebar contains a menu with 'UPS Information' (expanded), 'System Information', 'Device Information', 'Current Status', 'Remote Control', 'Parameter Settings', and 'History Record'. The main content area is titled 'System Information' and contains three tables:

IP Address	Subnet Mask	Gateway	Product Serial Number
172.16.89.220	255.255.254.0	172.16.88.1	00:00:00:00:00:0F

System Name	System Administrator	System Installation Path

Software Version	Hardware Version
\$Rev: 1806 \$ Dec 23 2022 16:23:09-43-RCEXV:2-0-34-0-1-ISPR-1284-0	2.00.4.1

A, IP Address

This part will automatically display when users finish the [Network Setting]

B, Subnet Mask

This part will automatically display when users finish the [Network Setting]

C, Gateway

This part will automatically display when users finish the [Network Setting]

D, System Name

This part will automatically display when users finish the [SNMP Setting]

E, System Administrator

This part will automatically display when users finish the [SNMP Setting]

F, System Installation Position

This part will automatically display when users finish the [SNMP Setting]

G, Other information will be provided by SNMP Card Lite monitoring system

3.1.2 Device Information

This part is to display each part of device information (UPS basic information, battery information and rated information). The contents will change according to user setting and UPS real status. UPS Manufacturer/Model/Version will be provided by the UPS itself.



Manufacturer	Model	Version
richcomm	UPS 5K-11A	Version1.0

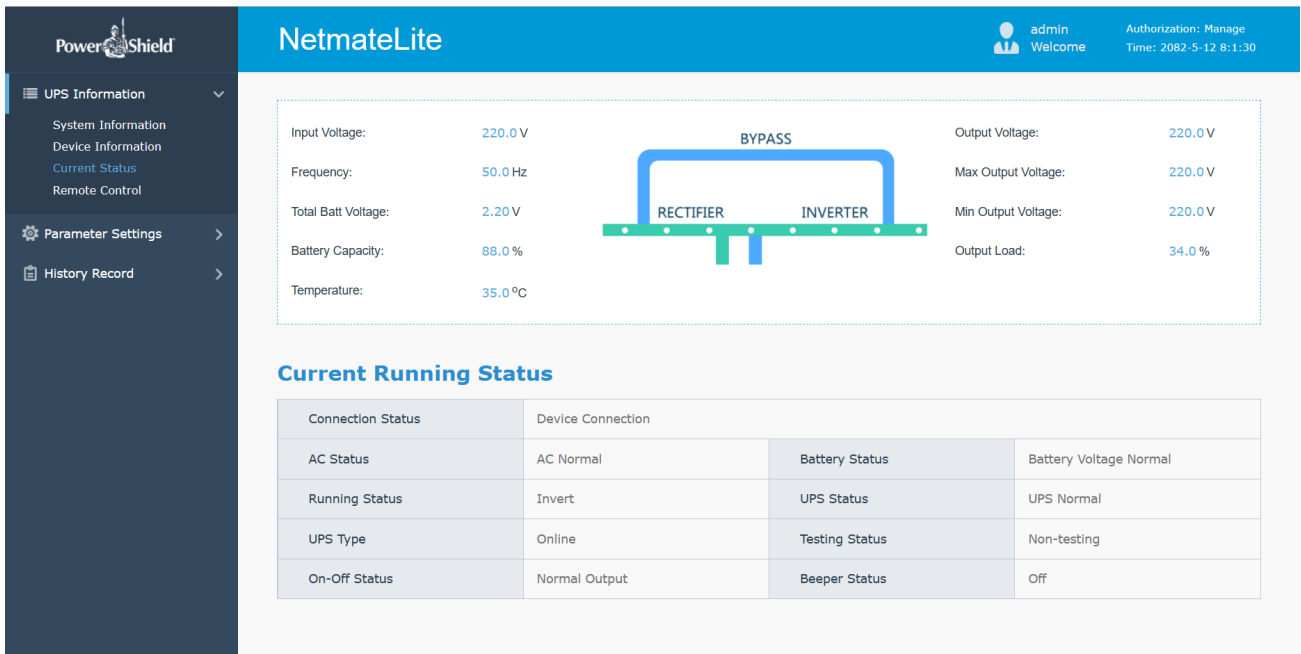
Rated Output Voltage	Rated Current	Rated Battery Voltage
220.0V	100A	02.55V

Rated Frequency	Baud Rate	Battery Quantity
50.0Hz	2400	1

3.1.3 Current Status

This menu displays the UPS current running status. The Graphical User Interface clearly displays the UPS current running status. When an abnormal alarm occurs, figures will turn in to red font accordingly.

Single-phase UPS Monitoring



Input Voltage:	220.0 V	Output Voltage:	220.0 V
Frequency:	50.0 Hz	Max Output Voltage:	220.0 V
Total Batt Voltage:	2.20 V	Min Output Voltage:	220.0 V
Battery Capacity:	88.0 %	Output Load:	34.0 %
Temperature:	35.0 °C		

Current Running Status

Connection Status	Device Connection		
AC Status	AC Normal	Battery Status	Battery Voltage Normal
Running Status	Invert	UPS Status	UPS Normal
UPS Type	Online	Testing Status	Non-testing
On-Off Status	Normal Output	Beeper Status	Off

Basic Information parameters displayed include:

Input Voltage/Input Frequency/Battery Voltage/Battery Content/UPS Temperature/Output Voltage/Output Max Voltage/Output Min Voltage/ Current Load /Temperature and Humidity.

3.1.4 Remote Control

This menu is to run ups self test, remotely switch on/off, and restart UPS.

The screenshot displays the NetmateLite web interface. The top navigation bar includes the PowerShield logo, the product name 'NetmateLite', and user information: 'admin Welcome' and 'Authorization: Manage Time: 2082-5-12 8:1:45'. The left sidebar contains the following menu items: 'UPS Information' (selected), 'System Information', 'Device Information', 'Current Status', 'Remote Control', 'Parameter Settings', and 'History Record'. The main content area is titled 'UPS Control' and contains the following options:

- UPS Self Test Seconds
- UPS Self Test Till Battery Voltage Low
- Cancel UPS Self Test
- After Seconds Switch Off UPS
- After Seconds Switch Off UPS, then
After Minutes Restart UPS
- Wake Up UPS
- Switch On Beeper
- Switch Off Beeper

At the bottom of the control panel are two buttons: 'OK' and 'Cancel'.

3.2 Parameter Setting

Sub-Menu:

- System Settings
- Network Settings
- SNMP Settings
- E-mail Settings
- User Settings
- IP POWER Settings

3.2.1 System Settings

Basic Parameter Settings

This menu is used to configure UPS basic parameters, Baud Rate/ Offline Times/Alarm Times/Inquiry/Battery Quantity/ Battery Type/System Date Time/NTP server need to be set according to real UPS information.

Shutdown settings:

Configure the parameters indicated in Red rectangle to set UPS shutdown options, when UPS constantly in AC break or battery low voltage, will shutdown computer and then UPS. And then when AC recover, UPS will auto restart and computer will restart.

The screenshot shows the 'System Settings' page in the NetmateLite interface. The left sidebar contains navigation options: UPS Information, Parameter Settings (selected), System Settings, Network Settings, SNMP Settings, Email Settings, User Settings, IPPOWER Settings, and History Record. The main content area displays a list of settings:

Communication Protocol:		Standard	▼
Baud Rate:		2400	▼
Offline Times:		3	
Alarm Query Times:		3	
Inquiry Interval:		1000	ms
Battery Quantity:		1	
Battery Type:		2V	▼
Battery Voltage Calibration Value:		0.00	V-Allowed Input Negative Floating Point
Battery Capacity Limitation:		0	%
Temperature Limitation:		0.0	°C
NTP Server:		0.0.0.0	
Time Zone:		UTC+08:00	▼
System Date Time:		5/12/2082 8:1:59	MM/DD/YY HH:mm:ss(12/31/2011 23:58:58)

This screenshot shows the 'Shutdown settings' section of the NetmateLite interface. The settings are as follows:

Inquiry Interval:		1000	ms
Battery Quantity:		1	
Battery Type:		2V	▼
Battery Voltage Calibration Value:		0.00	V-Allowed Input Negative Floating Point
Battery Capacity Limitation:		0	%
Temperature Limitation:		0.0	°C
NTP Server:		0.0.0.0	
Time Zone:		UTC+08:00	▼
System Date Time:		5/12/2082 8:38:58	MM/DD/YY HH:mm:ss(12/31/2011 23:58:58)
<input checked="" type="checkbox"/> UPS constant in AC break or battery voltage low		10	S UPS shutdown in 10 S
<input checked="" type="checkbox"/> UPS online, UPS shutdown in		10	S, And then turn on UPS in 10 S, When computer already shutdown. AC recover normal.
<input checked="" type="checkbox"/> UPS shutdown status, UPS turn on in		0	S When computer already shutdown. AC recover normal.

At the bottom of the settings area, there are two buttons: 'OK' and 'Cancel'.

System Parameter settings

Centurion (RT) 1000 / 2000SB / 2000 / 3000 / 6000 / 10K

Communication Protocol: Standard

Battery Quantity: 3 / 4 / 6 / 6 / 16 - 20 / 16 - 20

Battery Type: 12V

Lithium Centurion RT 1000 / 2000 / 3000

Communication Protocol: Standard

Battery Quantity: 8 / 24 / 24

Battery Type: 2V

Commander (RT) 1100 / 2000 / 3000

Communication Protocol: Standard

Battery Quantity: 1 / 1 / 1

Battery Type: 12V-1

For additional BBs need to select correct Ah settings on LCD of UPS Menu

Defender 800 Rackmount PSDR800

Communication Protocol: Standard V1

Battery Quantity: 1

Battery Type: 2V

Ninja 600 Standby UPS

Communication Protocol: Standard V1

Battery Quantity: 1

Battery Type: 2V

Tested ntp servers

1. ntp.adelaide.edu.au (129.127.40.3)
2. US CO time-a.nist.gov (129.6.15.28)

Note: The time and date must be synchronized to a network time server (ntp) selected by the user in system parameters. On system start-up the ups will need to synchronize the time and date from the ntp server. During synchronization the time and date will default to the factory settings and you may receive event alerts with unsynchronized time and date.

3.2.2 Network Settings

This menu is used to configure the network settings: IP address, subnet mask, gateway information and work mode of SNMP Lite card.

The screenshot shows the 'NetmateLite' interface. On the left is a dark sidebar with 'PowerShield' at the top and a menu including 'UPS Information', 'Parameter Settings' (expanded to show 'System Settings', 'Network Settings', 'SNMP Settings', 'Email Settings', 'User Settings', 'IPPOWER Settings'), and 'History Record'. The main area has a blue header with 'NetmateLite', a user profile 'admin Welcome', and 'Authorization: Manage Time: 2082-5-12 8:2:37'. Below the header is the 'Network Settings' section with a table of input fields: IP Address (172.16.89.220), Subnet Mask (255.255.254.0), Gateway (172.16.88.1), Primary DNS Server (8.8.8.8), Secondary DNS Server (0.0.0.0), and Work Mode (AUTO). At the bottom are 'OK' and 'System Reboot' buttons.

Basic Setting

A, SNMP System Name: Name this SNMP system

B, SNMP System Administrator: Set this SNMP system administrator

C, SNMP System Installation Path: Set SNMP system installation location

The basic settings are used to uniquely identify the SNMP Lite card for central monitoring and management by IP Power SE.

The screenshot shows the 'NetmateLite' interface. On the left is a dark sidebar with 'PowerShield' at the top and a menu including 'UPS Information', 'Parameter Settings' (expanded to show 'System Settings', 'Network Settings', 'SNMP Settings', 'Email Settings', 'User Settings', 'IPPOWER Settings'), and 'History Record'. The main area has a blue header with 'NetmateLite', a user profile 'admin Welcome', and 'Authorization: Manage Time: 2082-5-12 8:2:58'. Below the header is the 'Basic Settings' section with a table of input fields: SNMP System Name, SNMP System Administrator, and SNMP System Installation Path. At the bottom are 'OK' and 'Cancel' buttons.

SNMP Settings

This menu is used to configure SNMP user IP address, community and set relevant authorizations. Users can enable SNMP Lite card accessibility to 6 unique SNMP user IP addresses with the following permission levels: No Authorization, Readable, Readable/Writable.

The screenshot shows the NetmateLite web interface. The left sidebar contains navigation options: UPS Information, Parameter Settings (selected), System Settings, Network Settings, SNMP Settings, Email Settings, User Settings, and IPPOWER Settings. The main content area is titled 'SNMP Settings' and is divided into two sections: 'Basic Settings' and 'SNMP Settings'.

Basic Settings

SNMP System Name	SNMP System Administrator	SNMP System Installation Path
<input type="text"/>	<input type="text"/>	<input type="text"/>

Buttons: OK, Cancel

SNMP Settings

ID	IP User	Community	Permission
01	<input type="text" value="172.16.88.135"/>	<input type="text" value="public"/>	<input type="text" value="Readable/Writable"/>
02	<input type="text" value="0.0.0.0"/>	<input type="text" value="public"/>	<input type="text" value="No Permission"/>
03	<input type="text" value="0.0.0.0"/>	<input type="text" value="public"/>	<input type="text" value="No Permission"/>
04	<input type="text" value="0.0.0.0"/>	<input type="text" value="public"/>	<input type="text" value="No Permission"/>
05	<input type="text" value="0.0.0.0"/>	<input type="text" value="public"/>	<input type="text" value="No Permission"/>

Trap Setting

The Receiver IP Address is used for receiving the Traps that are sent by SNMP system. Users can set 6 Trap receivers IP addresses, and choose whether to receive the traps or not.

The screenshot shows the NetmateLite web interface. The left sidebar contains navigation options: UPS Information, Parameter Settings (selected), System Settings, Network Settings, SNMP Settings, Email Settings, User Settings, and IPPOWER Settings. The main content area is titled 'TRAP Settings' and contains a table for configuring trap receivers.

TRAP Settings

ID	Receiver IP Address	Community	Receive	XPPC	RFC1628
01	<input type="text" value="172.16.88.135"/>	<input type="text" value="public"/>	<input type="text" value="Receive"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
02	<input type="text" value="0.0.0.0"/>	<input type="text"/>	<input type="text" value="None"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
03	<input type="text" value="0.0.0.0"/>	<input type="text"/>	<input type="text" value="None"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
04	<input type="text" value="0.0.0.0"/>	<input type="text"/>	<input type="text" value="None"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
05	<input type="text" value="0.0.0.0"/>	<input type="text"/>	<input type="text" value="None"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
06	<input type="text" value="0.0.0.0"/>	<input type="text"/>	<input type="text" value="None"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Buttons: OK, Cancel

3.2.4 E-mail Settings

Configuration of email parameters.

Note: For Office365 please select USE_TLS, Port 587 and de-activate multi factor authentication on this email account.

The screenshot shows the NetmateLite interface with the 'Email Settings' configuration page. The left sidebar contains 'Parameter Settings' with sub-items: System Settings, Network Settings, SNMP Settings, Email Settings, User Settings, and IPPOWER Settings. The main content area is titled 'Email Settings' and contains the following fields:

- Authentication: USE_TLS (dropdown menu is open showing NO_SECURITY, USE_TLS, and USE_SSL)
- SMTP Server: (empty text field)
- Sender Email: longye166@outlook.com
- User Name: longye166@outlook.com
- Password: (masked with dots)
- Port: 587

Below these fields are two columns of 'Receiver Settings' for Receiver Mailbox 1 through 6, each with an empty text field. At the bottom are 'OK' and 'Cancel' buttons.

3.2.5 User Settings

This menu is used to set the user identifications, permissions and passwords.

Passwords may have up to 16 characters and only use combinations of the following characters: 0 to 9, a to z, A to Z and . * @ /

Any attempt to use characters outside of the above set may permanently lockout user password entry and recovery will only be possible with assistance from PowerShield.

The screenshot shows the NetmateLite interface with the 'User Settings' configuration page. The left sidebar contains 'Parameter Settings' with sub-items: System Settings, Network Settings, SNMP Settings, Email Settings, User Settings, and IPPOWER Settings. The main content area is titled 'User Settings' and contains a table with the following columns: ID, User Name, Permission, Password, and Confirm Password.

ID	User Name	Permission	Password	Confirm Password
01	admin	Manage		
02		Check		
03		Check		
04		Check		
05		Check		
06		Check		

At the bottom are 'OK' and 'Cancel' buttons.

3.2.6 IP POWER Settings

This menu is to set the authorization addresses. All authorization addresses are for remote monitoring and management via IP Power SE. Authorization permissions including Control and Access.

IPPOWER Settings

User IP	Subnet Mask	Permission
0.0.0.0	0.0.0.0	Check
0.0.0.0	0.0.0.0	Check
0.0.0.0	0.0.0.0	Check
0.0.0.0	0.0.0.0	Check
0.0.0.0	0.0.0.0	Check
0.0.0.0	0.0.0.0	Check

Comm timeout reset cycle Min

3.3 History Event

This page is used to display history events and records including the Date/Time/ Log.

History Event

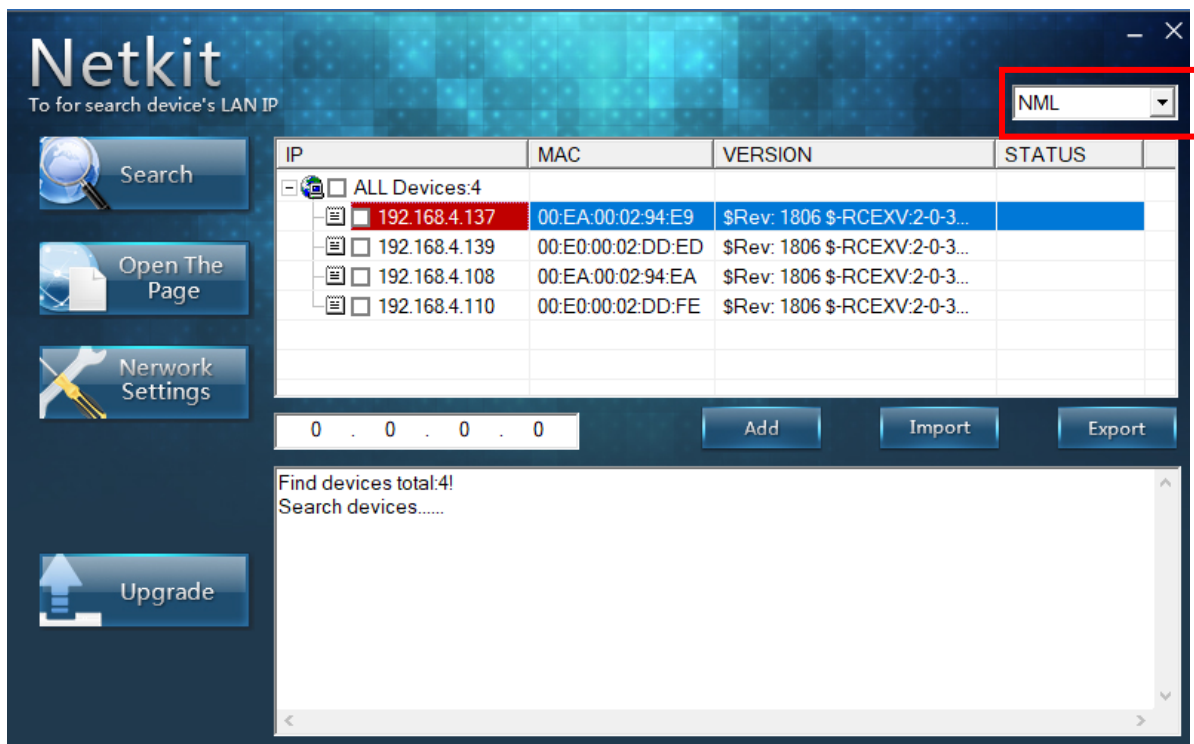
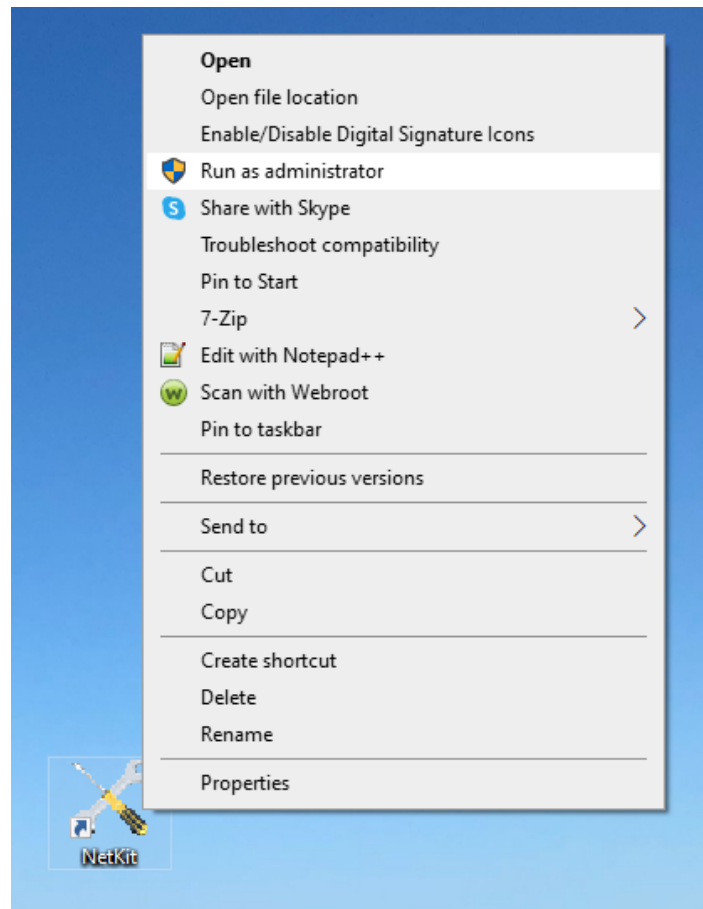
Date	Time	Log Content
2082/05/12	08:00:13	System Startup
2082/05/12	07:57:52	Device Disconnection
2082/05/12	07:57:49	System Startup
2082/05/12	07:50:25	Device Disconnection
2082/05/12	07:50:22	System Startup
2082/05/12	07:48:46	Device Disconnection
2082/05/12	07:48:43	System Startup
2023/02/06	16:35:25	Device Disconnection
2023/02/06	16:35:22	System Startup

First Page 1 2 3 4 5 6 7 8 9 10 next Last Page go to P: 1

3.4 NetKit

Network utility kit, for scanning SNMP lite cards on the network.

Run NetKit as administrator



Please select NML and then Search to find your SNMP LITE Card(s).

Press Open The Page or enter IP address in your browser of choice.

Technical Specifications

CPU	ARM Cortex-M4 micro-controller
RAM	160KB SDRAM
Flash	512KB Flash
Network Port	10/100mbps high speed Ethernet adaptive
Serial Port	A high speed asynchronous RS232 serial port be used for UPS communication and upgrade process
Support Browser	Chromium based browsers, Chrome & Edge.
SNMP MIB	Support MIB-II(RFC1213,RFC1315,RFC1316),PPC MIB
Network Protocol	TCP/IP, UDP, SNMP etc.
Input Power(DC)	Rated:12V Allowed Range:8Volt-14Volt
LED Indicator Light	Power, Status,LAN 10/100M Link/Active
Working Current	70mA~150mA MAX:1W
Operating Environment	Environment Temperature: 20°C~70°C Relative Humidity:95% non-condensing
System Security	Supply filtering mechanism based on IP, user ID and password protect of system operation and control management

Physical Dimensions

