User Manual

You can visit the free download website for the latest firmware and SPS software. http://www.ups-software-download.com/nmc/download.htm

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Chapter 1 Overview

NMC (Network Management Card) can receive the status information of UPS, and also can send commands to control UPS. User can manage UPS with NMC via web browser or via network management software which supports SNMP protocol.

Once UPS output is abnormal or other events are touched off, NMC will protect server or client operating system being shut down safely by working with system protect software (SPS) that can be installed on various operating system. The conditions include: UPS output abnormal, UPS battery low, UPS overload, over temperature, schedule shutdown, etc. User can set the condition, once the event is touched off, NMC will inform SPS of the event and SPS will shut down operating system safely according to the setting of SPS.

Note: NMC is short for Network Management Card in the following description.

1.1 NMC package contents

- 1. NMC with mounting bracket, packaged with ESD bag.
- 2. RJ45 to DB9 converter cable.
- 3. Quick Installation Guide.
- 4. NMC CD-ROM.

1.2 NMC CD Resources

NMC CD-ROM contains NMC Upgrade Tool, Quick Installation Guide, User Manual, MIB files, System Protect Software for various OS, and NMC firmware upgrade SOP.

- 1. NMC Upgrade Tool--- for searching NMC in LAN and linking to web of the card
- 2. Quick Installation Guide --- for describing how to configure NMC
- 3. User Manual --- for NMC function introduction and settings
- 4. MIB files --- for SNMP monitoring use
- 5. System Protect Software --- for protecting server or client operating system shutdown safely
- 6. NMC firmware upgrade SOP --- for describing how to upgrade NMC firmware

1.3 Features

• UPS management by network connection through RJ45 connector

User can monitor UPS status and control UPS via web browser on the internet.

• UPS and NMC configuring via SNMP protocol

User can configure parameters of NMC and control UPS via SNMP protocol on a network management station.

- RTC function supporting
- Standard MIB (RFC1628.mib) and user-defined MIB (EPPC.mib)
- EMP (Environment Monitoring Probe) supporting
- SSL supporting
- Operating system shutdown safely

System Protect Software can protect server or client operating system shutdown safely.

Redundant UPS input shutdown

If there is more than one UPS supply power to server, user can configure the redundant UPS input shutdown function of SPS (System Protect System), SPS will shut down server safely when the last one UPS can't supply power.

1.4 NMC Applications

NMC is kind of SNMP (Simple Network Management Protocol) manager to communicate UPS via Ethernet, it provides access information and send commands for the UPS. NMC supports two communicating protocols which are SNMP and HTTP/HTTPS for application. Through NMS (Network Management Station) or web browser user can access UPS information via Ethernet directly, meanwhile user can manage both UPS and NMC parameters as well.

NMC provides shutdown protection for different OS, an application program which named SPS (System Protect Software) for multi-server shutdown purpose. The program provides shutdown function for different operating systems when shutdown events are appearing on UPS. Shutdown events are configurable by user. The shutdown software will proceed the automatic shutdown orderly to prevent the abnormal shut-off of the clients or servers.



Chapter 2 NMC parameters setting via serial COM port

There are more methods for NMC parameters setting: setting via serial COM port, setting via SSH, and setting via web browser. It offers basic parameters setting through a serial COM port for NMC configuration such as IP Configuration, Pass Through, and Reset Configuration to default, Restart and Password. In this section, it particularly introduces the parameters setting via serial COM port. It is worth mentioning that the SSH program settings menu is same with the serial port settings.

2.1 Configure NMC via serial COM port

- 1. Prepare a computer (with Microsoft Windows XP or later version)
- 2. Insert NMC into UPS's intelligent slot exactly.
- 3. Tighten NMC with screw.
- 4. Connect the serial port of computer with NMC via RJ45 to DB9 converter cable, the cable is supplied in NMC package.
- On the computer with Microsoft Windows, for XP operation system, select Hyper Terminal from start→all programs to communicate with serial port; For XP above version, communicate with serial port via serial port debug tool (Putty is used as example in this manual).
- For Windows XP or other Windows operation system that support Hyper Terminal, select Accessories→Communication→ Hyper Terminal to create serial communication.



Input a name and select the connection icon.

Connection Description
New Connection
Enter a name and choose an icon for the connection:
Name:
NMC
lcon:
OK Cancel

Select the correct connection port.

Connect To	? 🛛
🦓 ммс	
Enter details for	the phone number that you want to dial:
<u>C</u> ountry/region:	United States (1)
Ar <u>e</u> a code:	1
<u>P</u> hone number:	
Co <u>n</u> nect using:	СОМЗ
	OK Cancel

Configure the parameters of the serial port: **9600** bps, **8** bits, **None** parity, **1** stop bit and **None** flow control.

COM3 Properties	? 🛛
Port Settings	
<u>B</u> its per second:	9600
<u>D</u> ata bits:	8
<u>P</u> arity:	None
<u>S</u> top bits:	1
<u>F</u> low control:	None
	<u>R</u> estore Defaults
	K Cancel Apply

For XP above Windows version, communicate with serial port via serial port via serial port debug tool. Double click Putty icon , open Putty and select serial session, configure the correct serial port and baud rate 9600 bps.

PuTTY Configuration		×
Session Logging Terminal Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours Connection Data Proxy Telnet Rlogin SSH SSH Serial	Basic options for your Pu Specify the destination you want to Serial line COM1 Connection type: Raw I telnet Rlogin Load, save or delete a stored sess Saved Sessions Default Settings Close window on exit: Always Never O	ITTY session connect to Speed 9600 SSH Serial ion Load Save Delete
About	Open	Cancel

Select "Serial" node on the left tree, and configure the parameters of the serial port on the right window: **9600** bps, **8** bits, **None** parity, **1** stop bit and **None** flow control. And then open the putty serial communication window by click "open" button.

😵 PuTTY Configuration		×						
Category:								
	Options controlling local serial lines							
Logging	Select a serial line							
Keyboard	Serial line to connect to	COM1						
Bell	Configure the serial line							
	Speed (baud)	9600						
Appearance	Data <u>b</u> its	8						
···· Translation	Stop bits	1						
Selection	<u>P</u> arity	None -						
	Flow control	None -						
Data								
- Telnet								
Rlogin								
Berial								
About	Oper	<u>C</u> ancel						

6. Please turn on UPS and waiting NMC start successfully, there will be some information shown on the hyper terminal interface. Refer to the following diagram, input NMC password, the default password of NMC is password

NMC Version X.X.X.X

+=	
ł	Network Management Card Configure Menu
+=	

Password:_

ł

After inputting the NMC password, all main menus will be shown on the 7. hyper terminal interface, refer to the following diagram.

Network Management Card Configure Menu	ł

- 1. IP Configurations
- Pass Through
 Reset Configuration to default
- 4. Restart
- 5. Change Password
- 0. Exit

Please Enter Your Choice :

8. Basing on the main menus, please select "1" to configure IP address, gateway, subnet mask and DHCP, refer to the following diagram.

+=:	
	IP Configure Menu
•	 MAC Address : 00:20:85:F7:10:1F 1. DHCP : Enable
	IP address : 172.18.127.42 Subpet mask : 255.255.0
	Gateway : 172.18.127.1 Project DNS addresses : 172.18.121.17
	Secondary DNS address : 172.10.121.17
	7. 1Pv6 Configure
1	0. Return to previous menu

Please Enter Your Choice :

- 9. Basing on the main menus, please select "2" to send command to UPS, the function is just for double checking UPS reply data correctly or not.
- 10. Basing on the main menu, please select "3" to configure NMC parameters to default value.
- 11. Basing on the main menus, please select "4" to restart NMC.
- 12. Basing on the main menus, please select "5" to modify NMC password.
- 13. Basing on the main menus, please select "0" to exit main menus. It is suggested exit the main menu page when the configurations is completed, and then close the serial debugging tool.

Note: User can configure NMC through Telnet program; the menu options of Telnet program are as same as the serial port setting menu.

Chapter 3 NMC&UPS management via web browser

In this section, it particularly introduces how to configure NMC, manage UPS and monitor UPS parameters via web browser.

3.1 NMC Parameters setting via web browser

Please Note: Before implementing the NMC setting for all configuring parameters, user has to become NMC administrator first. While configure parameters for NMC via web browser, there will be a pop-up dialog to ask the name and password of NMC administrator. Only NMC password can be changed, regarding to change password by serial COM port, please refer to the item 15 of the section 2.1.

3.1.1 NMC System menu

NMC system menu can be accessed by **Settings→NMC System**. In this menu it offers configuring for DHCP function, default is enabled; NMC IP address; SNMP version and SNMP port; Modbus TCP Connection; SMTP function; UPS description; UPS location; NMC web language change function and data log interval; SSH connection enabled or disabled and HTTP enabled or disabled(from 2.8.0.2 version and later, the default access is HTTPS, not HTTP, user should set HTTP enabled and restart card to make HTTP access successfully). Please refer to the following diagram 3.1.1.

Please Note: NMC must restart via Reboot System menu after changed IP address via web browser to make IP setting active immediately.

Image Image <td< th=""><th></th><th>Not secure 172.18.139.52/authority_ok_with_password.html</th><th></th><th></th><th>ら☆ ☆ 団 😩 …</th></td<>		Not secure 172.18.139.52/authority_ok_with_password.html			ら☆ ☆ 団 😩 …				
DELIVER CRADECOR DELIVERSING OF JANONE DELIVERSING <th>🗅 Bing 🎦 OWA 同页Outlook 🧧</th> <th>Power Quality Nort 🔤 JOE 主页 阈 Timesheet - 创建日志 阕 ECO Web application 🎭 Google</th> <th>劉澤 🗋 xStorage-EthernetC 🎦 Home - PQD APAC 😤 JIRA</th> <th>D 3GCloudCard - All D IT service D JOE - Information T</th> <th>> Dther favorites</th>	🗅 Bing 🎦 OWA 同页Outlook 🧧	Power Quality Nort 🔤 JOE 主页 阈 Timesheet - 创建日志 阕 ECO Web application 🎭 Google	劉澤 🗋 xStorage-EthernetC 🎦 Home - PQD APAC 😤 JIRA	D 3GCloudCard - All D IT service D JOE - Information T	> Dther favorites				
UP3 Status Status http: UP3 Aum Signer Confector		NETWORK MANAGEMENT CARD F	OR UPS	N-LINE ocation: test-ups-location-123456 020/11/03 14:24:32 Logout					
UP 9 Study System Configuration UP 9 Auronal Devices BootPhatD UP 3 Parameters BootPhatD UP 3 Standpress School Lak UP 3 Standpress Pris UP 3 Standpress	UPS Monitoring	Settings » NMC System			help				
UP 8 Jamm BoolPOINCOP Enable v UP 8 Parameter Devices UP 8 Americe Devices UP 8 Americe Devices UP 8 Americe Devices Scheet Mask 255:255:0 UP 8 Statery Parts Scheet Mask 255:252:0 UP 8 Statery Parts Scheet Mask 255:252:0 UP 8 Statery Parts Scheet Mask 255:252:0 UP 8 Statery Parts Scheet Mask 255:22:0 UP 8 Statery Parts Scheet Mask 255:22:0 UP 8 Statery Parts IPA Auto Configuration Enable v UP 8 Statery Parts IPA Auto Configuration 0:0:0:0 UP 8 Statery Parts IPA Auto Configuration 0:0:0:0 Statery Statery Parts IPA Auto Configuration 0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:	UPS Status	System Configuration							
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UP 5 definitation Journal and Long	UPS Powered Devices	Guboat Mark	255 255 255 0						
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UP 3 darky Hist Priflay URS 101/10/22/0 B 3 darky Hist Scholul Priflay URS 101/10/22/0 B 3 darky Hist Scholul IPS Enable ▼ IPS 3 darky Hist Scholul IPS Enable S IPS 3 darky Hist Scholul IPS Enable S IPS 3 darky Hist Scholul IPS Enable S IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul IPS 4 Scholul IPS IPS 3 darky Hist Scholul Shill IPS 4 Scholul IPS IPS 4 Scholul <td< th=""><th>UPS Management</th><th>Galeway Address</th><th>172.10.138.1</th><th></th><th></th></td<>	UPS Management	Galeway Address	172.10.138.1						
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UPS Cortol PA/ABC Configuration Enable v UPS Studdow PA/ABC Configuration 0 VPS Studdow PA/ABC Configuration 0 Studtow Schedule Perk length 0 0 NMC System Perk length 0 0 NMC System PA/ABC Configuration 0 0 Studtow PER/Studtow FEB/S 200 SFF FEES 58/2B NMC System PA/ABC Sch System FEB/S 200 SFF FEES 58/2B Studtow Studtow Studtow Studtow Studtow Enable v Studtow Studtow Enable v Studtow Studtow Enable v Studtow Studtow Enable v UPS Studtow Studtow Studtow Studtow Studtow Enable v UPS L	UPS Configuration	IPv6	Enable V						
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Shutdow Prefix length 0 Shutdow Schedule Prefix length 0<	UPS Shutdown	IPv6 Address 1							
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Helory Log Interval(Min) Statistics Log Interval(Min) 60 Save		Session expiration(Min)	10						
Statistics Log Interval(Min) (60 Sarve		History Log Interval(Sec)	60						
Save		Statistics Log Interval(Min)	60						
		Save							

Diagram 3.1.1

3.1.2 Date and Time menu

Date and Time menu can be accessed by **Settings→Date and Time**. There are three methods for configuring NMC date and time: configure the date and time of NMC same as user's computer; manually setting the date and time through input the date and time by user self; enter the NTP server

address and select a time zone, make the NMC clock synchronized with the NTP server time. Please refer to the following diagram 3.1.2.

						×
	.60/		,Q	🖒 🦉 Network Management C 🗙		† ★ ☆
		NETWORK MAN	IAGEI	MENT CARD FOR UPS	ON-LINE Location: Office 22/01/2014 13:37:27	
UPS Monitoring	Settin	ngs » Date and Time				help
UPS Status						
UPS Alarm						
UPS Parameters		Synchronize with comp	uter	time		
UPS Powered Devices		Computer Date(dd/mm/yyyy)	22/0	1/2014		
UPS Identification		Computer Time(hh:mm:ss)	14:2	6:18		
UPS Management						
UPS Battery Test	0	Setting manually				
UPS Battery Test Schedule		Date (dd/mm/yyyy)				
SNMP TRAP Receivers		Time (hh:mm:ss)				
UPS Configuration						
UPS Control	0	Synchronize with NTP s	serve	r time		
UPS Shutdown		Server Address				
Shutdown Schedule		Time Zone	(GN	T+08:00) Beijing Hong Kong Kuala Lum	our Singapore Perth Taipei	
Settings			Enal	ble Davlight Saving Time		
NMC System			Lina	be baying it baying time		
Reboot System	Sau					
Access Control	Jav	e				
Date and Time						
SNMPv3 USM Table						
Wake On LAN						
Email Notification						
Firmware Upload						
File Management						
Logs						
UPS Log						
UPS Statistics Log						
Event Log	·					
System Log						
						@ 4000/
						🔍 100% 🔻 💡

Diagram 3.1.2

3.1.3 Email Notification menu

Email Notification menu can be accessed by **Settings→ Email Notification**. NMC will send an Email to user when UPS event happens. Email Message Setting, there are columns which Mail Server, User Account, User Password, Sender's Email address, Mail Subject Prefix, Mail Server Port, Mail Daily Report At and Attached File must be input according to what user wants to define.

there are three encryption methods : NONE, SSL and TLS

Recipient List Settings, four Email receiver address can be configured at most; user can input description for each Email address. The functions of Mail Type and Event Level are as following.

Email Type:

- None: It means that NMC won't send any Email to the mail account when event happens on UPS.
- Events: It means that NMC will send an Email when to the mail account when event happens on UPS.
- Daily status: It means that NMC will send UPS daily logs reports to the mail account and the delivery time is configured by "Mail Daily Report At" column. Note: user is able to select History Log, Event Log and System Log report by tick Attached File column.
- Events/Status: It means that NMC will send an event report to the mail account when event happens on UPS and meanwhile NMC will send the daily logs reports as well.

Event Level:

- Information: It means that NMC will send an Email to the mail account once event happens on UPS.
- Warning: It means that NMC will send an Email to the mail account once warning event happens on UPS.
- Severe: It means that NMC will send an Email to the mail account once severe event happens on UPS.

Refer to the following diagram 3.1.3.

C () (http://172.18.139.61/authorit	y_ok.html		ۍ ، م	Ø Network M	anagement Card >			 A ☆ A
		NETWORK MAR	NAGEMENT	CARD FO	R UPS		ON-LINE Location: Office 27/06/2017 09:33:40)
UPS Monitoring	Settings »	Email Notification						help
UPS Status	Em ail M	essage Settings						
UPS Alarm	Mail Server	r	smtp-ma	il.outlook.co	m			
UPS Parameters	User Accou	int	lingawu@	outlook.com	n			
UPS Powered Devices	User Pass	word	guiru (e					
UPS Identification	Oserrass	word						
UPS Management	Senders E	mail Address	lingawu@	outlook.com	n			
UPS Battery Test	Mail Subje	ct Prefix	NMC-587	-TLS				
UPS Battery Test Schedule	Mail Server	Port	587					
SNMP TRAP Receivers	Mail Daily S	Status Report At	10:40					
UPS Configuration	Encryption		TLS 🗸	ĺ				
UPS Control	Attached Fi	iles	History Log			System	Log	
UPS Shutdown	Pacinia	nt List Settings						-
Shutdown Schedule	Index	Mail Account		Descript	ion		Mail Type	EventLevel
Settings	- Index			Descript	1011		Function 1	Lufermention 1 d
NNIC System		Lisawu@eaton.com					Events	Information V
Reboot System	2	LinhuaLi@eaton.com					Daily Status 🔽	Information 🔽
Access Control	. 3	lingawu@outlook.com					Events/Status 🗸	Information 🔽
Date and time	4	lingawu@163.com					Events/Status 🗸	Information 🔽
SNMPV1/2 Configuration								Set Value
Wake On LAN					Send Test			<u> </u>
Einali Notification					o dila root			
File Management								
Logs								
UPSLog								
UPS Statistics Log								
Event Log								
System Log								

Diagram 3.1.3

Note: support TLSv1.2/SSLv3, not support TLSv1.

Mailbox	SMTP	SSL			TLS	NONE
		465	994	25	587	25
163	smtp.163.com	\checkmark	\checkmark	\checkmark		\checkmark
126	smtp.126.com	\checkmark	\checkmark	\checkmark		\checkmark
sina	smtp.sina.com	\checkmark		\checkmark	\checkmark	\checkmark
office365	Smtp.office365.com				\checkmark	
sohu	smtp.sohu.com					\checkmark
qq	smtp.qq.com	\checkmark		\checkmark	\checkmark	\checkmark
Yahoo	smtp.mail.yahoo.com	\checkmark		\checkmark	\checkmark	
zoho	smtp.zoho.com	\checkmark			\checkmark	

3.1.4 SNMP TRAP Receivers menu

SNMP trap receivers menu can be assessed by **UPS Management-**SNMP TRAP Receivers. In this menu, the columns NMS IP address, Trap Type, Severity and Description are configured by user's

demand. The default of Community Strings column is "public", and it can't change by anyone. Trap type support two trap types which are RFC1628 Trap and EPPC Trap.

Severity:

- Information: It means that NMC will send a trap message to the NMS IP address once event happens on UPS.
- Warning: It means that NMC will send a trap message to the NMS IP address once warning event happens on UPS.
- Severe: It means that NMC will send a trap message to the NMS IP address once severe event happens on UPS.

User can input description for each NMS IP address in description column. Refer to the following diagram 3.1.4.

	-	ar reput description for a		P address in descriptions			
	authority_	ok.html	0-0	<i>e</i> Network Management C ×			合 🛠 疑
						ON-LINE	
		NETWORK MANA	GEMENT	CARD FOR UPS		Location: Office 22/01/2014 13:40:5	2
						22/01/2014 15:40:5	
UPS Monitoring 📃 🗸 U	IPS Mar	nagement » SNMP TRAP R	eceivers	5			help
UPS Status	Index	NMS IP Address		Community S	String	Тгар Туре	Severity
UPS Alarm	1	172.18.139.127		•••••		RFC1628 Trap	Varning V
UPS Parameters	2	172 18 139 27				EPPC Tran	
UPS Powered Devices	2	112.10.100.21				Nono	
UPS Identification						None	
UPS Management	4			•••••		None	
UPS Battery Test	5			•••••		None	 Information
UP'S Battery Test Schedule	6			•••••		None	 Information
SNMP TRAP Receivers	7			•••••		None	 Information
UDS Control	8			•••••		None	 Information
UDS Shutdown							Save
Shutdown Schodulo							
Sottings							
NMC System							
Reboot System							
Access Control							
Date and Time							
SNMPv1/2 Configuration							
Wake On LAN							
Email Notification							
Firmware Upload							
File Management							
Logs							
UPS Log							
UPS Statistics Log							
Event Log							
System Log							
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Diagram 3.1.4

3.1.5 SNMPv1/2 Configuration

NMC Support SNMPv1 and SNMPv2 monitor, refer to Diagram 3.1.5. User can set SNMPv1 and SNMPv2 community strings.

The default public community string is public. And the private community string is private.

(→) ttp://172.18.139.6	i0/authority_ok.html	etwork Management C ×		- □ ×
	NETWORK MANAGEMENT CAR	D FOR UPS	ON-LINE Location: Office 22/01/2014 13:41:20	
UPS Monitoring	Settings » SNMPv1/2 Configuration			help
UPS Status	SNMPv1/2 Community Strings			
UPS Alarm	Public Community String			
UPS Parameters	Private Community Otring		_	
UPS Powered Devices	Private Community String			
UPS Identification				Submit
UPS Management				
UPS Battery Test				
UPS Battery Test Schedule				
SNMP TRAP Receivers				
UPS Configuration				
UPS Control				
UPS Shutdown				
Shutdown Schedule				
Settings				
NMC System				
Reboot System				
Access Control				
Date and Time				
SNMPv1/2 Configuration				
Wake On LAN				
Email Notification				
Firmware Upload				
File Management				
Logs				
UPS Log				
UPS Statistics Log				
Event Log				
System Log				
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Diagram 3.1.5

3.1.6 SNMPv3 User Management

To enhance security users can enable SNMPv3 management mechanism, NMC can add SNMPv3 user through setting user name and validate password.

Enter Settings \rightarrow NMC System, select SNMP Support to SNMPv3, the SNMPv3 menu option will appear to the left window, and then select settings \rightarrow SNMPv3 USM Table to add SNMPv3 user, refer to Diagram 3.1.6.

User need set SNMPv3 user name, Authentication password, Private password, Security level, Authentication, User status.

Security level can choose no Authentication no Private password, Authentication but no Private, or both Authentication and Private password;

Authentication is MD5 encryption mode;

User status can choose enable or disable.

						- 0 x
	0/authority_ok.html	5 - Q	<i>ể</i> Network Management	C ×		🔒 🛠 🐯
	N	ETWORK MANAGEMENT	CARD FOR UPS	ON-LIN Location 22/01/:	: : Office 2014 13:42:58	
UPS Monitoring	Settings » SNMPv3	USM Table				help
UPS Status		Authentication				
UPS Alarm	User Name	Password	Private Password	Security Level	Authentication	User Status
UPS Parameters				noAuthNoPriv 🗸	HMAC-MD5 🗸	Disable 🗸
UPS Powered Devices				noAuthNoPriv V	HMAC-MD5	Disable 🗸
UPS Identification					HMAC-MD5	Disable 🗙
UPS Management				no AuthNo Driv		Disable 1
UPS Battery Test					HMAC-MD5 V	Disable V
UPS Battery Test Schedule				noAuthNoPriv V	HMAC-MD5 V	Disable 🗸
SNMP TRAP Receivers				noAuthNoPriv 🗸	HMAC-MD5	Disable 🔽
UPS Configuration				noAuthNoPriv 🗸	HMAC-MD5 🔽	Disable 🔽
UPS Control				noAuthNoPriv 🗸	HMAC-MD5 🔽	Disable 🗸
OPS Shutdown			Save			
Soutingo						
Setungs						
Pohoot System						
Access Control						
Date and Time						
SNMPv3 USM Table						
Wake On LAN						
Email Notification						
Firmware Upload						
File Management						
Logs						
UPS Log						
UPS Statistics Log						
Event Log						
System Log						
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Diagram 3.1.6

3.1.7 Wake On LAN

Wake On LAN menu can be accessed by **Settings**->**Wake On LAN.** This menu is used to start up client computer from network by MAC address. When the client PC shutdown cause of UPS shutdown events, "Wake On LAN" packet will send to client to start up PC after shutdown events returned the normal. User can set almost 16 MAC address of client from this page. Refer to Diagram 3.1.7.

	50/authority_ok.l	html .	♀ ¢ 🤗 Network Ma	nagement C ×			- □ ×
		NETWORK MANA	GEMENT CARD FOR UP	PS	ON-LINE Location: C 22/01/201	ffice 4 13:43:30	
UPS Monitoring	Settings » V	Vake On LAN					help
UPS Status	Index	MAC Address		Description		Actions	
UPS Alarm	1	00:20:85:f7:10:0b		test 1		Disable V	
UPS Parameters	2	00:20:85:57:10:0c		tost 2		Disable X	
UPS Powered Devices	2	00.20.00.01.10.00		IGST Z		Disable V	
UPS Identification	3						
UPS Management	4					Disable 🗸	
UPS Battery Test	5					Disable 🗸	
UPS Battery Test Schedule	6					Disable 🗸	
SNMP TRAP Receivers	7					Disable 🗸	
UPS Configuration	8					Disable 🗸	
	9					Disable 🗸	
OPS Shutdown	10					Disable V	
Shutdown Schedule	11					Disable	
Setungs	10						
Rebest System	12						
Access Control	13					Disable 🗸	
Date and Time	14					Disable 🔽	
SNMDv3 IISM Table	15					Disable 🗸	
Wake On LAN	16					Disable 🗸	
Email Notification							Test Save
Firmware Upload							
File Management							
Logs							
UPS Log							
UPS Statistics Log							
Event Log							
System Log							
< >							
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Diagram 3.1.7

3.1.8 Firmware Upload menu

Firmware upload menu can be accessed by **Settings**→**Firmware Upload**. This menu offers upload NMC firmware via web browser. When user is going to upload NMC firmware, user has to become administrator of NMC first. The default name is "*root*", and the default password is "*password*" for login as administrator. Regarding upload NMC firmware procedure, please refer to the file *NMC Firmware Upgrade SOP.pdf* for detail information.

3.1.9 File Management menu

NMC file management menu can be accessed by **Settings**→**File Management**. The function of this menu is uploading files for the same configuration for different NMC. Only *confsnmp.cfg* (about NMC parameters) and *confups.cfg* (about UPS parameters set by NMC) these two files are available for application. After uploaded files NMC has to reboot immediately to make new configuration active. Regarding to reboot NMC system via web browser, please refer to section 3.1.9 and for reboot NMC system via serial COM port, please refer to item 14 in section 2.1. Furthermore it also can reboot NMC system manually by pull-out and push-in NMC from the intelligent slot of UPS.

Note: Once .cfg file is deleted, and then reboots NMC system. The configuration of NMC system and UPS will be back to the default setting.

If user would like to save .cfg and .csv file on local computer, it can be achieved by click the file name directly.

3.1.10 System Log menu

NMC system log menu can be accessed by **Logs→System Log**. The menu allows user to view NMC system logs. Please refer to diagram 3.1.10.

	Second P	the state of the	to section 3.1.8 and for relocal MAC system on setting	
	.60/authority_ok.	html	P → C	fir 🖈 🔅
		NET	NORK MANAGEMENT CARD FOR UPS ON-LINE Location: Office 22/01/2014 13:44:06	
UPS Monitoring	Logs » Syst	em Log		help
UPS Status	Date	Time	Description	
UPS Alarm	25/12/2013	08:40:39	System manual restarted by user	
UPS Parameters	25/12/2013	00.40.33	System started	
UPS Powered Devices	25/12/2013	00.41.32	System stated.	
UPS Identification	25/12/2013	08.51.03	EMP connected	
UPS Management	25/12/2013	08:52:38		
UPS Battery Test	25/12/2013	08:54:15	EMP connected	
UPS Battery Test Schedule	25/12/2013	08:55:13	EMP removed	
SNMP TRAP Receivers	31/12/2013	13:12:41	System started.	
UPS Configuration	02/01/2014	09:04:45	Firmware upgrade begin.	
UPS CONTO	02/01/2014	09:04:45	Firmware upgraded.	
Shutdown Schodulo	02/01/2014	09:05:38	System started.	
Settings	02/01/2014	09:09:22	Firmware upgrade begin.	
NMC System	02/01/2014	09:09:22	Firmware upgraded.	
Reboot System	01/01/1970	00:00:00	System manual restarted by user.	
Access Control	02/01/2014	09:12:10	System started.	
Date and Time	03/01/2014	07:55:01	System started.	
SNMPv3 USM Table	05/01/2014	22:19:50	System started.	
Wake On LAN	01/01/1970	00:00:00	System manual restarted by user.	
Email Notification	08/01/2014	12:27:06	System started.	
Firmware Upload	09/01/2014	13:09:24	System started.	
File Management	09/01/2014	13:23:38	- Firmware upgrade begin.	
Logs	09/01/2014	13:23:38	Firmware upgraded	
UPS Log	09/01/2014	13:24:34	System started	
UPS Statistics Log	09/01/2014	13:27:50	Firmware upgrade begin	
Event Log	09/01/2014	12:27:50	Firmware upgrave begin.	
System Log	09/01/2014	10:27:00	Custom started	
< >	09/01/2014	13.28.40	oystern starteu.	
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Diagram 3.1.10

3.1.11 Reboot system menu

NMC reboot system menu can be accessed by **Setting→Reboot System**. The menu offers a function for user to reboot NMC system if it is necessary. When user is going to reboot NMC system, user has to become administrator of NMC first. The default name is "*root*" and the default password is "*password*" for login as administrator.

3.1.12 Access Control

SNMP/Web Access Table menu can be accessed by **Setting→Access Control**. This menu displays a list of the workstations enabled access to NMC. User can enter workstation's IP address in IP Address column. 0.0.0.0 means entry not configured. User can choose access type in Access Type column, the available options are: Enable/Disable. "Enable" means the entry IPs have access to visit NMC via web or SNMP, "Disable" means the entry IPs have no access to visit NMC. For example, an entry 192.168.1.255 means the client with the IP address within the range from 192.168.1.0 to 192.168.1.255 become the management station with the access type set by Administrator. Please note 255.255.255.255 grant the access right to all IP. Please refer to diagram 3.1.12.

Change Password menu can be accessed by **Setting** \rightarrow **Access Control**. User can change password in this menu. Default password is "password" $_{\circ}$ If user forget password, can enter "B56hefT23st0" in console as password. Please refer to diagram 3.1.12, 3.1.13

 ・・・・・・・・・・・・・・・・・・・・・・・・・	Not secure 172.18.	139.52/authority_ok_with_pas JOE 主页 🛛 Timesheet - 创建日	ssword.html	gle 副弟 🗋 xStorage-EthernetC 🗋 Home	- PQD APAC	🛱 JIRA 🗋 3GI	CloudCard - All	T service D JOE - Inf	ormation T	含 <u>1</u> >	🗟 🔹 …
		NET	TWORK MANAGEMENT CARD	FOR UPS		ON-LINE Location 2020/1:	: : test-ups-local L/03 10:46:06	ion-123456 Logout			
UPS Monitoring	Settings » Access	Control									help
UPS Status	SNMP/Web Acc	ess Table									
UPS Alarm	Index	IP Address					Access Typ				
UPS Parameters	1	0.0.0.0					Enable ¥	-			
UPS Powered Devices	2	0.0.0.0					Enable Y				
UPS Identification		0.0.0.0					Enable +				
UPS Management	3	0.0.0.0					Crable V				
UPS Battery test	4	0.0.0.0					Enablé V				
SNMP TRAP Receivers	0	0.0.0.0					Enable V				
UPS Configuration	6	0.0.0.0					Enable V				
UPS Control	7	0.0.0.0					Enable V				
UPS Shutdown	8	0.0.0.0					Enable 🛩				
Shutdown Schedule											Submit
Settings	Change Passwo	ord									
NMC System	Enter New Password										
Reboot System	Confirm Password										
Access Control											Submit
SNMD/211SM Table											
Wake On LAN											
Email Notification											
Firmware Upload	1										
File Management	1										
Logs	1										
UPS Log											
UPS Statistics Log											
Event Log											
System Log											

Diagram 3.1.12



Diagram 3.1.13

3.2 UPS monitoring via web browser

3.2.1 UPS Status menu

UPS status menu can be accessed by **UPS Monitoring** \rightarrow **UPS Status**. User can view real-time operating status of the UPS from the web page directly. Please refer to diagram 3.2.1.

Load Segment 1 This shows the current status of load segment 1. Load Segment 2 This shows the current status of load segment 2

C C A http://172.18.	139.91/authority_ok.html	C Network Management Card ×	
<u>File Edit View Favorites</u>	<u>T</u> ools <u>H</u> elp		
	NETWORK MANAGEMEN	NT CARD FOR UPS	ON-LINE Location: lab123rtet 28/10/2015 10:43:01
UPS Monitoring	UPS Monitoring » UPS Status		help
UPS Status			
UPS Alarm	UPS Status	Line	
UPS Parameters	UPS Temperature	26.9 °C	
UPS Powered Devices	Input		
UPS Management	Voltage	228.9 V	
UPS Battery Test	Frequency	50.0 Hz	
UPS Battery Test Schedule	Output		
SNMP TRAP Receivers	Load(%)	0	
UPS Configuration	Voltage	219.8 V	
UPS Control	Frequency	50.0 Hz	
UPS Shutdown	Battery		
Shutdown Schedule	Status	Battery Normal	
Settings	Capacity(%)	83	
NMC System	Voltage	55 6 V	
Reboot System	Time On Ratton	00-00-00	
Access Control	Pades Time	00.00	
SNMPy1/2 Configuration	Васкир Піте	04:52:30	
Wake On LAN	Load Segment		
Email Notification	Load Segment 1	On	
Firmware Upload	Load Segment 2	On	
File Management			

Diagram 3.2.1

3.2.2 UPS Alarm menu

UPS Alarm menu can be accessed by **UPS Monitoring→UPS Alarm**. User can view the current warning of UPS on the interface. Please refer to diagram 3.2.2.

A () (A http://172.18.139.6	0/authority_ok.html	タマ C A Network Management	C X	☆☆
				00 00 101
	NET	VORK MANAGEMENT CARD FOR UPS	ON-LINE Location: Office 22/01/2014 13:44:39	
UPS Monitoring	UPS Monitoring » UPS	Alarm		help
UPS Status	Date and Time	Description		Severity
UPS Alarm	21/01/2014 13:56:32	The LIPS temperature is over the setting limit		WARNING
UPS Parameters	2 10 1/2014 13:30:32	The of o temperature is over the setting innit.		WARNING
UPS Powered Devices				
UPS Identification				
UPS Management				
UPS Battery Test				
UPS Battery Test Schedule				
SNMP TRAP Receivers				
UPS Configuration				
UPS Control				
UPS Shutdown				
Shutdown Schedule				
Settings				
NMC System				
Reboot System				
Access Control				
Date and Time				
SNMPv3 USM Table				
Email Notification				
Firmware Upload				
System Log				
System Log				
	1			100% -
				🔍 100% 🔻 🔡

Diagram 3.2.2

3.2.3 UPS Parameters menu

UPS Parameters menu can be accessed by **UPS Monitoring** \rightarrow **UPS Parameters**. User can view the rating parameters of UPS on the interface. Such as rating output voltage, rating output frequency, rating output power, different parameters shown on the interface is depended on different UPS type. Please refer to diagram 3.2.3.

	8/ ・ ・ ク マ 🧭 Network Management Card 😕	r ि ☆ ई
		ON-LINE
	NETWORK MANAGEMENT CARD FOR UPS	Location: CT Office 2017/09/13 09:14:03
UPS Monitoring	UPS Monitoring » UPS Parameters	help
UPS Status	Output Rating Voltage	220.0 V
UPS Alarm	Output Rating Frequency	50.0 Hz
UPS Parameters	Output Rating VA	3000 \/A
UPS Powered Devices	Ouput Nating VA	3000 VA
UPS Identification		
UPS Management		
UPS Battery Test		
UPS Battery Test Schedule		
SNMP TRAP Receivers		
UPS Configuration		
UPS Control		
UPS Shutdown		
Shutdown Schedule		
Settings		
NMC System		
Reboot System		
Access Control		
Date and Time		
SNMPv3 USM Table		
Wake On LAN		
Email Notification		
Firmware Upload		
File Management		
Logs		
UPS Log		
UPS Statistics Log		
Event Log		
System Log		
< >		

Diagram 3.2.3

3.2.4 UPS Powered Devices Menu

UPS Powered Devices menu can be accessed by **UPS Monitoring→UPS Powered Devices**. The table shows the amount of computers with SPS (System Protect Software) connected with NMC. Once UPS output is abnormal, NMC will send shutdown command to the computer with SPS, and computer will be shut down safely by SPS.

User can test remote computer with SPS shutdown function by configure test event.

Please refer to diagram 3.2.4.

	http://			
🗲 🕣 🏉 http://172.18.139.6	0/authority_ok.html	5 - Q	🤗 Network Management C 🗙	
	,	NETWORK MANAGEMENT	CARD FOR UPS	ON-LINE Location: Office 22/01/2014 13:46:41
UPS Monitoring	UPS Monitoring »	UPS Powered Devices		help
UPS Status				
UPS Alarm				
UPS Parameters	The amount of conne	cted devices is:	1	
UPS Powered Devices	Index	IP Address	Host Name	Date Time
UPS Identification	1 172.1	18.139.21	BAOCNWHP3004159.napa.ad.etn.com	22/01/2014 13:46:31
UPS Management				· · · · · · · · · · · · · · · · · · ·
UPS Battery Test	Remote PC Shutdow	n Test	C Failed 🗸	Submit
UPS Battery Test Schedule				
SNMP TRAP Receivers				
UPS Configuration				
UPS Control				
Shutdown Schodulo				
Settings				
NMC System				
Reboot System				
Access Control				
Date and Time				
SNMPv3 USM Table				
Wake On LAN				
Email Notification				
Firmware Upload				
File Management				
Logs				
UPS Log				
UPS Statistics Log				
Event Log				
System Log				
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Diagram 3.2.4

3.2.5 UPS Identification menu

UPS Identification menu can be accessed by **UPS Monitoring→UPS Identification**. There will be UPS type, UPS description (refer to section 3.1.1), UPS firmware version, NMC firmware version and MAC address. Please refer to diagram 3.2.5.

A http://172.18.139.6	i0/authority ok.html Ω ▼ ¢			
		Contraction of the second seco		
	NETWORK MANAGEMEN	T CARD FOR UPS	ON-LINE Location: Office 22/01/2014 13:47:02	
UPS Monitoring	UPS Monitoring » UPS Identification			help
UPS Status	UPS			
UPS Alarm	UPS Model	ON-LINE		
UPS Parameters	UPS Description			
UPS Powered Devices	Firmware Version	05517-0200		
UPS Identification	Filliwale version	05517-0200		
UPS Management	Network Management Card			
UPS Battery Test	Firmware Version	1.4.0.2		
UPS Battery Test Schedule	MAC Address	00:20:85:F7:11:12		
SNMP TRAP Receivers				
UDS Control				
Shutdown Schedule				
Settings				
NMC System				
Reboot System				
Access Control				
Date and Time				
SNMPv3 USM Table				
Wake On LAN				
Email Notification				
Firmware Upload				
File Management				
Logs				
UPS Log				
UPS Statistics Log				
Event Log				
System Log				
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Diagram 3.2.5

3.2.6 UPS Log menu

UPS Log menu can be accessed by Logs→UPS Log. There are two hundred latest data logs shown on the interface at most. Please refer to diagram 3.2.6. User can export *upsdata.csv* file to view more data logs from file management interface, please refer to section 3.1.7.

	60/authority_ol	c.html		<u>م</u> ۲ - ۵	🗿 Network N	lanagement C	×		- • • •	x Ø
		NE	TWORK M	ANAGEMENT	CARD FOR U	JPS		ON-LINE Location: Office 22/01/2014 13:	47:22	
UPS Monitoring	Logs » UP	S Loa							help	
UPS Status										
UPS Alarm										
UPS Parameters	Date	Time	1	nput		Output		E	attery	
UPS Powered Devices			Voltage	Frequency	Voltage	Frequency	Load (%)	Capacity(%)	Time On Battery (min)	
UPS Identification	22/01/2014	10:28:10	222.4	49.9	220.0	50.0	0	100	0.0	
UPS Management	22/01/2014	10:29:10	222.0	50.0	220.0	49.9	0	100	0.0	-
UPS Battery Test	22/01/2014	10:30:10	221.8	49.9	219.6	50.0	0	100	0.0	-
UPS Battery Test Schedule	22/01/2014	10:31:10	221.6	49.9	220.3	50.0	0	100	0.0	-
SNMP TRAP Receivers	22/01/2014	10:01:10	221.0	40.0 E0.0	220.0	50.0	0	100	0.0	-
UPS Configuration	22/01/2014	10.32.10	220.0	50.0	219.0	50.0	0	100	0.0	-
UPS Control	22/01/2014	10:33:10	220.3	50.0	220.0	50.1	0	100	0.0	-
OPS Shutdown	22/01/2014	10:34:10	220.3	50.0	220.3	50.0	0	100	0.0	-
Sottings	22/01/2014	10:35:10	220.0	50.0	220.0	50.0	0	100	0.0	-
NMC System	22/01/2014	10:36:10	220.5	49.9	220.0	49.9	0	100	0.0	-
Reboot System	22/01/2014	10:37:10	220.7	50.0	220.0	50.0	0	100	0.0	_
Access Control	22/01/2014	10:38:10	222.8	50.0	220.0	49.9	0	100	0.0	-
Date and Time	22/01/2014	10:39:10	222.8	50.0	219.8	50.0	0	100	0.0	_
SNMPv3 USM Table	22/01/2014	10:40:10	222.4	50.0	220.0	50.0	0	100	0.0	
Wake On LAN	22/01/2014	10:41:10	223.1	49.9	219.6	49.9	0	100	0.0	
Email Notification	22/01/2014	10:42:10	222.6	50.0	220.0	50.0	0	100	0.0	
Firmware Upload	22/01/2014	10:43:10	222.0	49.9	220.0	49.9	0	100	0.0	
File Management	22/01/2014	10:44:10	222.0	49.9	219.8	49.9	0	100	0.0	1
Logs	22/01/2014	10:45:10	222.0	50.0	220.3	49.9	0	100	0.0	
UPS Log	22/01/2014	10:46:10	222.0	49.9	219.8	49.9	0	100	0.0	1
UPS Statistics Log	22/01/2014	10:47:10	221.6	49.9	220.5	50.0	0	100	0.0	-
Event Log	22/01/2014	10:48:10	221.8	49.9	220.5	50.0	0	100	0.0	-
System Log	22/01/2014	10:49:10	220.7	50.0	220.3	50.0	0	100	0.0	\checkmark
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Diagram 3.2.6

3.2.7 UPS Statistics Log menu

UPS Statistics Log menu can be accessed by Logs→UPS Statistics Log. This page shows a statistics log of the UPS parameters taken over a period of time. For each of the UPS parameters, minimum, maximum and the average values is shown in each of the records. Please refer to diagram 3.2.7. Statistics log interval can be changed by modifying the variable "Statistics Log Interval" in "NMC System" page.

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			NETWO	RK MANAG	EMENT (CARD F	OR UP	s		ON- Loca 21/	LINE ation: Of 01/2014	ffice 13:35:4	7		
UPS Parameters		Logs » UP	S Statisti	cs Log											/
UPS Powered Devices															-
UPS Identification															
UPS Management		Start	Start	End	End					Innut					đ
UPS Battery Test		Date	Time	Date	Time	Inp	ut Volt	tage	Fi	requei	ncy	Outp	out Vol	tage	
UPS Battery Test Schedule						Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	
SNMP TRAP Receivers		06/01/2014	06:20:28	06/01/2014	07:20:28	218.2	221.3	223.7	49.9	49.9	50.0	221.0	221.0	222.4	
UPS Configuration		06/01/2014	07:20:28	06/01/2014	08:20:28	218.2	221.6	225.1	49.9	50.0	50.0	221.0	221.0	222.4	
UPS Control	_	06/01/2014	08:20:28	06/01/2014	09:20:28	214.0	218.7	221.0	49.9	50.0	50.0	221.0	221.0	222.4	
UPS Shutdown	_	06/01/2014	09:20:28	06/01/2014	10:20:28	212.6	217.6	219.6	49.9	49.9	50.0	221.0	221.0	222.4	
Shutdown Schedule		06/01/2014	10:20:28	06/01/2014	11:20:28	211.2	219.5	223.7	49.9	50.0	50.0	219.6	221.0	221.0	
Settings		06/01/2014	11:20:28	06/01/2014	12:20:28	215.4	222.3	223.7	49.9	49.9	50.0	219.6	221.0	221.0	
NMC System	-	06/01/2014	12:20:28	06/01/2014	13:20:28	215.4	220.7	223.7	49.9	49.9	50.0	219.6	220.9	221.0	
Reboot System	-	06/01/2014	13:20:28	06/01/2014	14:20:28	215.4	220.2	222.4	49.9	50.0	50.0	219.6	220.9	222.4	t
Access Control	-	06/01/2014	14-20-28	06/01/2014	15-20-28	210.4	220.2	222.4	40.0	10.0	50.0	210.0	220.0	222.4	
SNMDv4/2 Configuration	-	06/01/2014	15-20-20	06/01/2014	16:20:20	210.0	220.3	222.4	40.0	40.0	50.0	210.0	221.1	222.4	
Wake On LAN	-	06/01/2014	10.20.20	06/01/2014	10.20.20	214.0	218.0	222.4	40.0	40.0	50.0	213.0	221.0	221.0	
Email Notification	-	00/01/2014	10.20.20	00/01/2014	11.20.20	210.4	221.0	222.4	40.0	43.9	50.0	221.0	221.0	221.0	
Firmware Upload	-	06/01/2014	17:20:28	06/01/2014	18:20:28	215.4	219.7	222.4	49.9	50.0	50.0	221.0	221.0	221.0	
File Management	-	06/01/2014	18:20:28	06/01/2014	19:20:28	215.4	220.8	223.7	49.9	50.0	50.0	221.0	221.0	221.0	
Loas		06/01/2014	19:20:28	06/01/2014	20:20:28	216.8	222.0	223.7	49.9	49.9	50.0	221.0	221.0	221.0	
UPS Log	•	06/01/2014	20:20:28	06/01/2014	21:20:28	216.8	222.3	225.1	49.9	50.0	50.0	221.0	221.0	221.0	
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Diagram 3.2.7

3.2.8 Event Log menu

Event Log menu can be accessed by Logs \rightarrow Event Log. There are two hundred latest event logs shown on the interface at most. Please refer to diagram 3.2.8. User can export *upsevent.csv* file to view more event logs from file management interface, please refer to section 3.1.7.

-) 🧭 http://172.18.139.60)/authority_ok.l	ntml NETV	P ・ C P Network Management C × ON-LINE Location: Office 22/01/2014 13:48:08	£ € €	- 20
PS Monitoring	Logs » Eve	nt Log		help	1
UPS Status	Date	Time	Description		1
UPS Alarm	25/12/2013	08:45:30	WADNING: Lifility power not available		1
UPS Parameters	25/12/2013	00.45.55			
UPS Powered Devices	25/12/2013	00.41.33	WADNING: Libitity power net available		
JPS Identification	25/12/2013	00.46.20	WARNING, Ounty power hot available.		
PS Management	25/12/2013	00.51.25	INFORMATION. Utility power has restored.		-
UPS Battery Test	25/12/2013	08.52.00	WARNING, Oulity power hot available.		-
SNMD TRAD Receivers	25/12/2013	08.53.09	INFORMATION. Online power has restored.		-
IIPS Configuration	25/12/2013	08.53.41	WARNING. Othly power not available.		-
UPS Control	25/12/2013	08:55:45	INFORMATION: Utility power has restored.		-
UPS Shutdown	31/12/2013	13:12:51	WARNING: UPS Output On.		-
Shutdown Schedule	31/12/2013	13:22:26	INFORMATION: UPS Output On.		
ettings	31/12/2013	13:22:26	INFORMATION: The UP'S has enabled bypass.		
NMC System	31/12/2013	13:22:30	INFORMATION: The UPS is not on Bypass and return to normal status.		
Reboot System	02/01/2014	20:30:57	WARNING: Utility power not available.		
Access Control	02/01/2014	20:37:09	SEVERE: The UPS batteries are low and will soon be exhausted.		
Date and Time	02/01/2014	20:43:35	WARNING: The UPS batteries capacity is lower than setting limit.[29% < 30%]		_
SNMPv3 USM Table	02/01/2014	20:46:30	WARNING: UPS Output Off.		
Wake On LAN	05/01/2014	19:52:53	WARNING: Utility power not available.		
Email Notification	05/01/2014	20:02:16	SEVERE: The UPS batteries are low and will soon be exhausted.		
Firmware Upload	05/01/2014	20:04:38	WARNING: The UPS batteries capacity is lower than setting limit.[29% < 30%]		
nie management	05/01/2014	20:07:32	WARNING: UPS Output Off.		
Jys IPS Lon	08/01/2014	17:22:02	WARNING: Utility power not available.		
UPS Statistics Log	08/01/2014	17:22:04	INFORMATION: Utility power has restored.		
Event Log	09/01/2014	16:57:56	WARNING: Utility power not available.		
System Log	09/01/2014	17:07:27	SEVERE: The UPS batteries are low and will soon be exhausted.		
System Log					

Diagram 3.2.8

3.3 UPS control via web browser

Please Note: Before implementing the NMC setting for all configuring parameters, user has to become NMC administrator first. While configure parameters for NMC via web browser, there will be a pop-up dialog to ask the name and password of NMC administrator. Only NMC password can be changed, regarding to change password by serial COM port, please refer to the item 15 of the section 2.1.

3.3.1 UPS Battery Test menu

UPS Battery Test menu can be accessed by **UPS Management→UPS Battery Test**. UPS battery latest test result and test time is shown on the interface. User can configure "Quick Battery Test", "Test Until Battery Low", "Timed Test", "Cancel Test" and "Clear Test Information". For some UPS, UPS can't support "Test Until Battery Low" and "Timed Test" function, the function is depended on UPS firmware. Please refer to diagram 3.3.1.

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	NETWORK MAN	AGEMENT CARD FOR UPS ON-LIN Locatio 22/01/	E n: Office 2014 13:48:32
UPS Monitoring	UPS Management » UPS Battery	Test	help
UPS Status	Last Test Record		
UPS Alarm	Last Test Start Time	21/01/2014 15:47:23	
UPS Parameters	Last Test Flansed Time	0.00.12	
UPS Powered Devices		No Eoiluro	
UPS Identification		NUTAIIUIE	
UPS Management	Battery Test Parameters		
UPS Battery Test Schedule	Battery Test Setting Time(Min)	1	
SNMP TRAP Receivers	Battery Test Command	Quick Battery Test	
UPS Configuration		Save	
UPS Control			
UPS Shutdown			
Shutdown Schedule			
Settings			
NMC System			
Reboot System			
Access Control			
Date and Time			
SNMPv3 USM Table			
Wake On LAN			
Email Notification			
Firmware Upload			
File Management			
Logs			
UPS Statistics Log			
Event Log			
System Log			
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Diagram 3.3.1

3.3.2 UPS Battery Test Schedule menu

UPS Battery Test Schedule menu can be accessed by UPS

Management→UPS Battery Test Schedule. User can configure schedule test on specific day or weekly day. User can configure "Quick Battery Test", "Test Until Battery Low" and "Timed Test". "Battery Test setting Time" is for "Timed Test" function. For some UPS, UPS can't support "Test Until Battery Low" and "Timed Test" function, the function is depended on UPS firmware. Please refer to diagram 3.3.2.

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		NETWOR	RK MANAGEMENT C	CARD FOR UPS	ON-L Loca 22/0	INE Lion: Office 1/2014 13:48:55
UPS Monitoring	UPS Ma	nagement » UPS I	Battery Test Sched	ule		help
UPS Status UPS Alarm	Index	Test Day	Specific Day (dd/mm/yyyy)	Test Time (hh:mm)	Test Actions	Battery Test Setting Time(Min)
UPS Parameters	1	Monday 🗸	00/00/0000	10:00	Quick Battery Test	1
UPS Powered Devices	2	Tuesday 🗸	00/00/0000	10.00	Quick Battery Test	1
UPS Identification	2	Specific Day M	12/01/2014	10:00	Tect Until Battony Low	1
UPS Management	3	Specific Day V	12/01/2014	10.00	Test Ontil Battery Low	
UPS Battery Test	4	Disabled V	00/00/0000	00:00	INONE V	
UPS Battery Test Schedule	5	Disabled 🔽	00/00/0000	00:00	None 🗸	1
SNMP TRAP Receivers	6	Disabled 🔽	00/00/0000	00:00	None 💊	1
	7	Disabled 🔽	00/00/0000	00:00	None 💊	1
					Sav	9
Shutdown Schodulo						
Sottings						
NMC System						
Reboot System						
Access Control						
Date and Time						
SNMPv3 USM Table						
Wake On LAN						
Email Notification						
Firmware Upload						
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UPS Log						
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System Log						
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Diagram 3.3.2

3.3.3 UPS Control menu

UPS Control menu can be accessed by **UPS Management**->**UPS Control**. User can control UPS output on or off on the interface, please refer to diagram 3.3.3.

When selecting "UPS turn off" item, NMC will send shutdown command to UPS, UPS will shut down output once the delay time has run out. When selecting "UPS Sleep" item, NMC will send shutdown command to UPS, UPS will shut down output once the delay time has run out, and UPS will turn on output once the UPS sleep time has run out. When selecting "UPS Turn on / Cancel shutdown" item, NMC will send cancel shutdown command to UPS, and UPS will turn on output. Users can manual Turn On or Turn off UPS Load Segment in this page.

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	NETWORK MANAGEMENT CARD FOR UPS Control of the second of t	
UPS Monitoring	UPS Management » UPS Control	help
UPS Status	IIPS Shuthown Dataw(Sar)	
UPS Alarm	a o oneutrin sentifice) E	
UPS Parameters		
UPS Powered Devices	Operation UPS Turn On /Cancel Shutdown V	
UPS Identification	Save	
UPS Management		
UPS Battery Test	Load Segment	
UPS Battery Test Schedule	Load Segment 1	
SNMP TRAP Receivers	Load Segment 2 Turn On ~	
UPS Configuration	Save	
UPS Control		
Shutdown Schedule		
Settings		
NMC System		
Reboot System		
Access Control		
Date and Time		
SNMPv3 USM Table		
Wake On LAN		
Email Notification		
Firmware Upload		
File Management		
Logs		
UPS Log		
UPS Statistics Log		
Event Log		
System Log		
1		
	Diagram 2.2.2	

Diagram 3.3.3

3.3.4 UPS Shutdown Schedule menu

UPS Shutdown Schedule menu can be accessed by **UPS Management**-**UPS Shutdown Schedule**. User can control UPS output on or off on specific day or on weekly day, please refer to diagram 3.3.4.

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	NE	TWORK MANAGEMEN	IT CARD FOR UPS	ON-L1 Locat 22/0:	INE ion: Office 1/2014 13:50:22
UPS Monitoring	UPS Management »	UPS Shutdown Sche	dule		help
UPS Status	Weekly				
UPS Alarm	Shutdown Day	Shutdown Time	(hh:mm) Resta	rt Dav R	estart Time(hh:mm)
UPS Parameters	Monday V	18:00	Tuesda		3:00
UPS Powered Devices	Tuesday	18:00	Friday		2-00
UPS Identification	Disable	00:00	Pinuay		
UPS Management		00.00	Disable		3.00
UPS Battery Test	Disable V	00:00	Disable		5:00
SNMD TRAD Receivers	Disable 🔽	00:00	Disable		0:00
	Disable 🔽	00:00	Disable		0:00
UPS Control	Disable 🗸	00:00	Disable	e 🗸 00	0:00
UPS Shutdown	Specific Day				
Shutdown Schedule	Shutdown Day	Shutdov	vn Time Resta	rt Day	Postart Time(hh:mm)
Settings	(dd/mm/yyyy)	(hh:mm	(dd/m)	m/yyyy)	
NMC System	28/01/2014	18:00	29/01/2	014	09:00
Reboot System	00/00/0000	00:00	00/00/0	000	00:00
Access Control	00/00/0000	00:00	00/00/0	000	00:00
Date and Time	00/00/0000	00:00	00/00/0	000	00:00
SNMPv3 USM Table	00/00/0000	00:00	00/00/0	000	00:00
Wake On LAN	00/00/0000	00:00	00/00/0	000	00:00
Email Notification	00/00/0000	00.00	00/00/0	000	00.00
FilmWare Upload	00/00/0000	00:00	00/00/0	000	00:00
	00/00/000	00.00	00/00/0	000	00.00 Sava
UPSLog					Save
UPS Statistics Log					
Event Log					
System Log					
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Diagram 3.3.4

3.3.5 UPS Shutdown menu

UPS Shutdown menu can be accessed by **UPS Management→UPS Shutdown**. Please refer to diagram 3.3.5. When the selected event happens,

NMC will inform the computer installed with SPS (System Protect System) of the event and send the shutdown command to the computer. Here, the computer installed with SPS is the computer shown on UPS powered devices interface (refer to section 3.2.4).

Action type:

- Disable: It means that NMC will do nothing even the event happens on UPS.
- Warning: It means that NMC will inform the computer installed with SPS of the event once the shutdown condition happens.
- Client Shutdown: It means that NMC will inform the computer installed with SPS of the event and send shutdown command to the computer once the shutdown condition happens.
- "UPS Turn Off" means that NMC will inform the computer installed with SPS of the event, send shutdown command to the computer, and also send shutdown command to UPS once the shutdown condition happens, when the delay time has run out, UPS will shut down output. The default value of delay time is 120 seconds.

Warning period means the overall time the warning will be repeatedly once event happens. Warning interval means that NMC will inform the event to the computer installed with SPS every short period once event happens. N= (Warning period / Warning interval) +1, N means the warning times.

Please Note: for client shutdown setting information, please refer to System Protect Software User Manual.pdf

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			ON-LIN	E
	NETWORK MA	ANAGEMENT CARD FOR UPS	Locatio 22/01/	n: Office 2014 13:49:43
UPS Monitoring	UPS Management » UPS Shutd	lown		help
UPS Status	Event	Actions	Warning Period	Warning Interval
	Event	ACTIONS	(Sec)	(Sec)
UPS Parameters	AC Failed	Client Shutdown	900	30
UPS Powered Devices	Battery Low	Client Shutdown	400	10
UDS Management	UPS Overload	Client Shutdown	900	30
UPS Management	LIPS Over Temperature	Client Shutdown	900	30
UPS Battery Test Schedule	Weekly Schedule	Client Shutdown		30
SNMP TRAP Receivers	Weekly Schedule	Client Shutdown	500	20
UPS Configuration	Specific Day		900	30
UPS Control	EMP Temperature Threshold	Client Shutdown	900	30
UPS Shutdown	EMP Humidity Threshold	Client Shutdown	900	30
Shutdown Schedule	EMP Alarm-1	Client Shutdown	900	30
Settings	EMP Alarm-2	Client Shutdown	900	30
NMC System	Below Battery Capacity Setting	Client Shutdown	• 0	30
Reboot System				
Access Control	Cancel UPS Shutdown	if events Restored in Shutdown Dela	ay 🔲	
Date and Time		UPS Shutdown Delay(Se	c) 120	
SNMPv3 USM Table				Save
Wake On LAN				55.5
Email Notification				
Firmware Upload				
File Management				
Logs				
UPS Log				
UPS Statistics Log				
Event Log	/			
System Log				
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Diagram 3.3.5

3.3.6 UPS Configuration menu

UPS Configuration menu can be accessed by **UPS Management >UPS Configuration**. User can configure the limited point of UPS overload and

over-temperature. For Innova UPS, User can configure UPS buzzer bee. User can configure the limited point of EMP temperature value and humidity value. User can configure the warning setting of EMP: "Normally open", "Normally closed" or "Not used". User also can configure UPS last replaced date. User can set the lower limit of battery capacity. When the battery capacity is below the set point, NMC will take action that is specified in the UPS Shutdown menu. The default value is 30%. User can set the lower limit of battery backup time. When the battery backup time is below the set point, NMC will take action that is specified in the UPS Shutdown menu.

Load Segment

The Load Segment Control feature contains parameters to control each UPS load segment.

Shutdown Timer

Shut down the appointed load segment when the utility power fails for the amount of time equal to the setting time. The value range is -1 to 32,767 seconds.

Startup Timer

Start up the appointed load segment when the set timer expires after utility power is restored. The value range is -1 to 32,767 seconds.

Refer to the following diagram 3.3.6.

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<u>File Edit View Favorites</u>	<u>T</u> ools <u>H</u> elp						
	NETWO	ORK MANAGEM	ENT CARD	FOR UPS		ON-LINE Location: lab 28/10/2015	123rtet 10:46:30
UPS Monitoring	UPS Management »	UPS Configurat	ion				help
UPS Status	UPS						
UPS Alarm	Over Load Set Point/%)		21			
UPS Parameters		7		50			
UPS Powered Devices	Over Temperature Set	Point(°C)		50			
UPS Identification	Buzzer			Off 🗸			
UPS Management UPS Battery Test	Save						
UPS Battery Test Schedule	EMP	Auto 🗸					
SNMP TRAP Receivers	Sensor	Description			Low P	oint	High Point
UPS Configuration	Temperature(°C)	uu			✓ 10		44
UPS Control	Humidity(%)	nur.					
UPS Shutdown	Fiumidity(76)	TWI	1		40		55
Shutdown Schedule	Alarm-1	hty			Normal	lly Open 🔽	
Settings	Alarm-2	asewe			Normal	lly Open 🔽	
NMC System	Save						
Reboot System							
Date and Time	UPS Battery						
SNMPy1/2 Configuration	Last Replace Date(dd/r	nm/yyyy)		03/07/2015			
Wake On LAN	Shutdown when battery	<pre>capacity is below(%)</pre>	6)	30			
Email Notification	Shutdown when battery	backup time is belo	ow(Min)	0			
Firmware Upload	Save						
File Management							
Logs	Load Segment						
UPS Log			Shutdown tin	ner		Startup timer	
UPS Statistics Log	Load Segment 1(Sec)		130			0	
Event Log	Load Segment 2(Sec)		130			0	
System Log	Save						
>							

Diagram 3.3.6

Chapter 4 NMC & UPS management via SNMP

Please note: if user wants to use NMC via SNMP protocol, please make sure IP address and Gateway of NMC correct. Please refer to section 2.1 or section 3.1.1 for IP address and Gateway settings.

NMC support SNMP protocol, user can manage NMC and UPS via SNMP NMS (Network Management Station). Load the NMC MIB to the database of SNMP NMS, and user can read or configure the parameters of NMC and UPS. The read community strings is "*public*", and the write community strings is "*private.*" NMC support two type MIB: one is *RFC1628.mib*, the other is *EPPC.mib*. MIB files can be found in NMC CD-ROM packaged with NMC.

Furthermore, NMC can be monitored by Winpower software via SNMP protocol. For more detail information, please refer to the user manual of Winpower.

Chapter 5 NMC Upgrade Tool - Find NMC in the LAN

Via NMC Upgrade Tool, user can find NMC automatically and quickly in the LAN. Please refer to the following diagram.

			mac Address	Version	Account	Password	Information
•	172.18.139.45	; (00:20:85:F7:6F:5F	2.1.0.1	root	password	
	172.18.139.46	; (00:20:85:F7:10:16	2.2.0.0	root	password	
	172.18.139.47	/ (00:20:85:F7:10:12	2.2.0.0	root	password	
	Select All						
	Select All		Upgrade	Remove	Re	fresh	Close

NMC Upgrade Tool can be found in NMC CD-ROM packaged with NMC, NMC Upgrade Tool supports Windows XP / Windows 7.