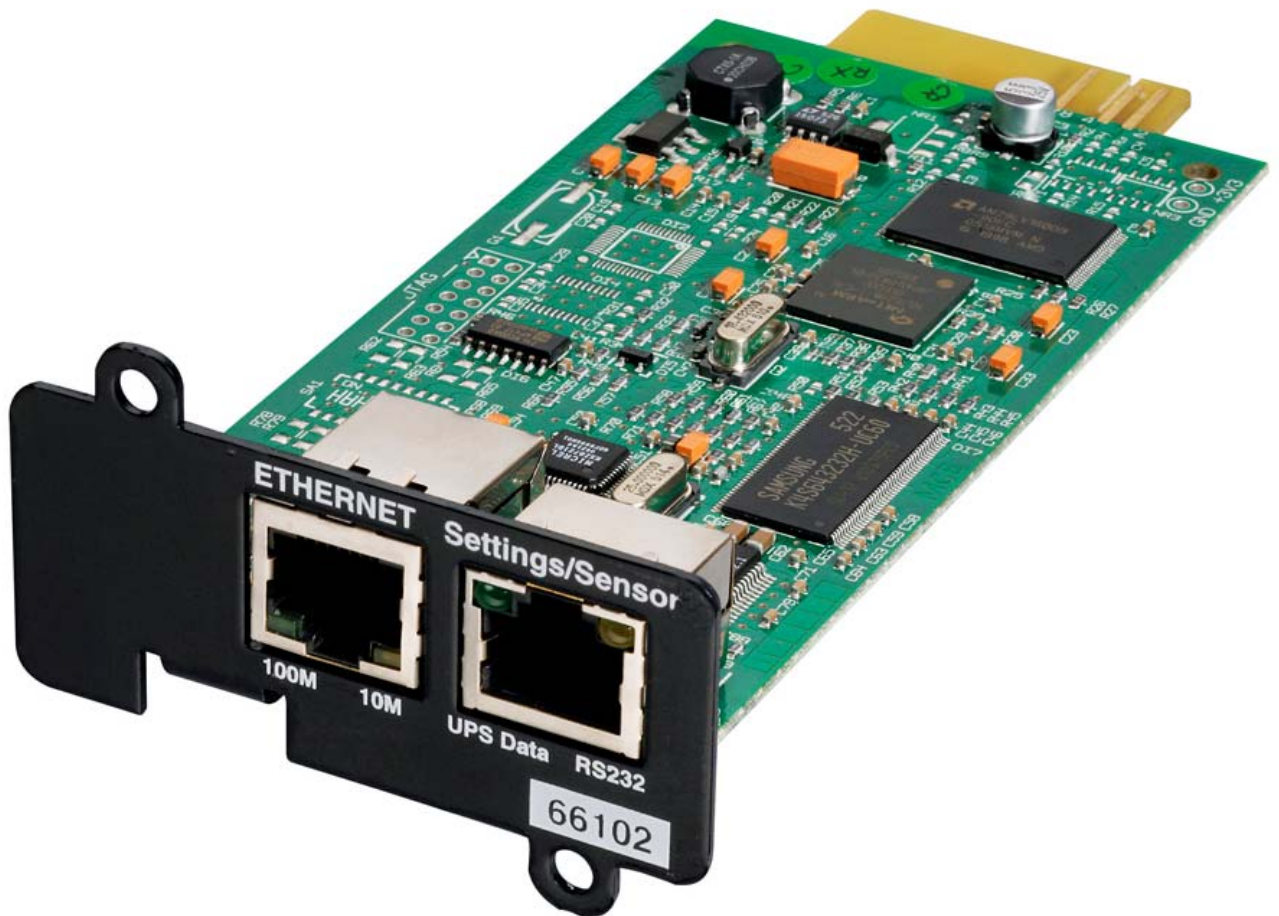


Network Management Card (66102)

User Manual



Minislot 2006 Edition

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1 MGE Network Solution

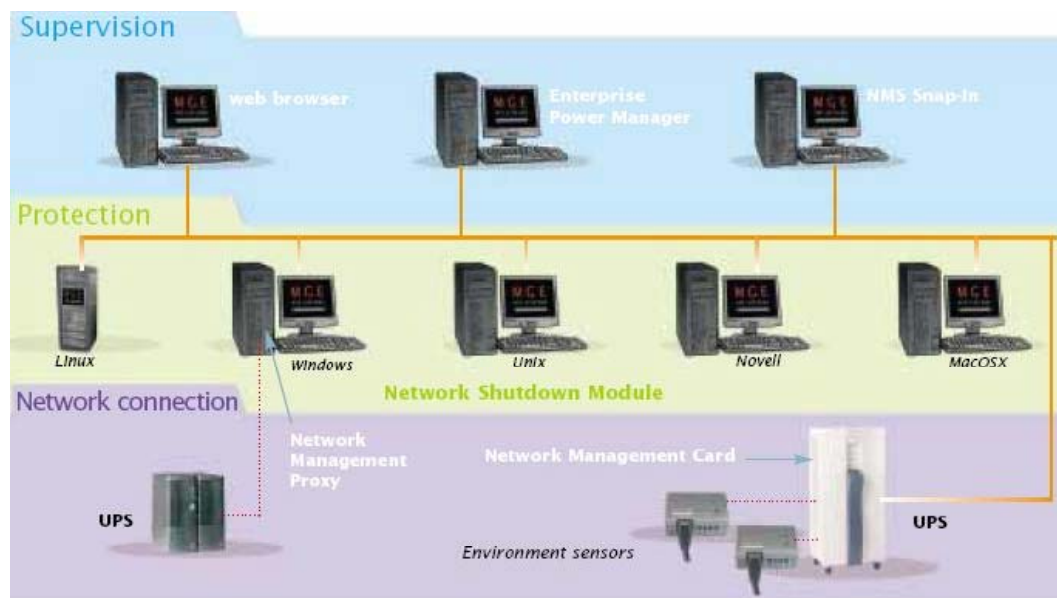
1.1 General Presentation

MGE Network Solution:

- ▶ provides information on events concerning the supply of power to the computers connected to your computer network,
- ▶ carries out automatic shutdown of computer systems,
- ▶ monitors and controls all the UPSs connected to the network.

As illustrated in the picture below, MGE Network Solution provides these 3 main functions:

- ▶ **supervision** of the UPSs over the Network,
- ▶ **protection** of the computers,
- ▶ **connexion** of the UPS to the Network.



1.1.1 Connecting the UPS to the Ethernet network

This function can be performed either through network Cards inserted in the UPS (Network Management Card) or through a software "agent" running on a nearby PC that is called the Network Management Proxy.

The Network Management Card or Proxy:

- manages communication with the UPS (as well as local protection of the machine on which Proxy is installed),
- periodically accesses the information concerning the UPS,
- makes this information available to the connected applications (Network Shutdown Modules, Web Browser, Network Management Systems, Enterprise Power Manager),
- sends notifications on certain events

Operation may be in standard secure mode (the default mode) or in SSL secure mode (Secure Socket Layer SSL).

1.1.2 Protection of the computers / servers

This function is performed by the **Network Shutdown Module** installed on each of the servers to be protected.

Note that the Shutdown Module is available on several Operating Systems.

The Network Shutdown Module:

continuously waits for information from the Network Management Card / Proxy connected to the MGE UPS.

warns administrators and users if AC power fails and proceeds with graceful system shutdown before the end of battery backup power is reached.

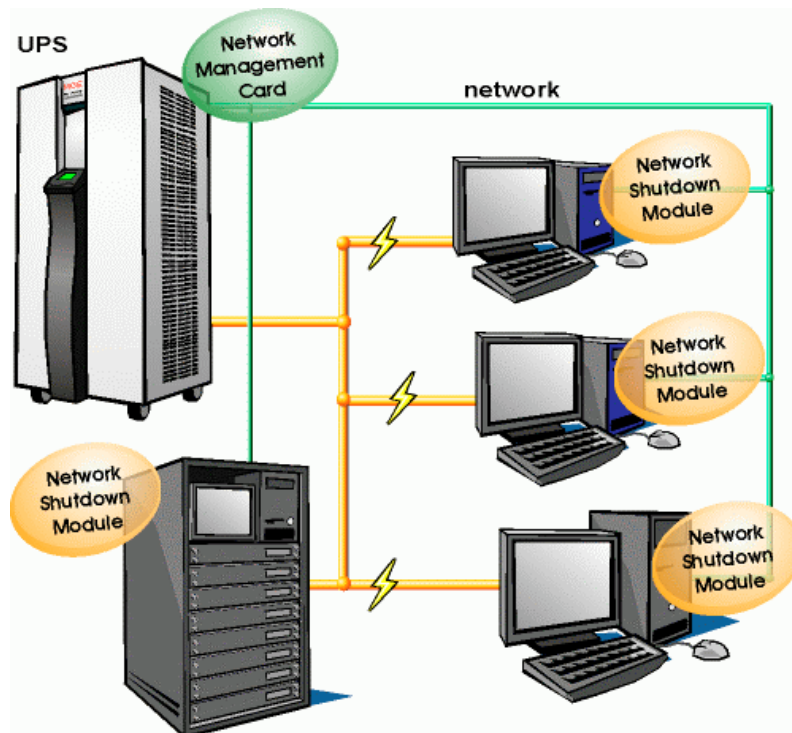
1.1.3 Supervision of the UPSs over the network

Depending on your needs, you can either use:

your Internet browser to monitor each UPS, as **Management Proxy and Management Card** include a Web server.

your company's standard Network Management System (HP-Openview, CA Unicenter, HP Insight Manager, IBM Tivoli Netview). To simplify integration of MGE UPSs, you can use one of the Network Management System Kits for MGE devices. These kits are available on the Management Pac 2 CD-ROM. (ref 66923)

the MGE supervisor "Enterprise Power Manager"



1.1.4 Connection

Before installing the MGE Network Solution, the UPS must be set up as indicated in the steps below.

Shut down the computers to be protected by the UPS.

Connect the UPS to a wall outlet. (For UPSs above 3kVA, please refer to the UPS installation manual)

Connect the power cord of each computer to an outlet on the UPS. (For UPSs above 3kVA, please refer to the UPS installation manual)

1.1.4.1 How to connect UPS / agent / network:

Insert the optional card in the UPS and connect the UPS to the computer network.
Start the MGE UPS, then the computers.

1.1.4.2 Setting up the protection:

Set up the Network Management Card (see user manual).

Install and configure the Network Shutdown Module on all machines that are to be protected by the UPS.

The software components for each platform and the user manuals are on the Solution-Pac-2 CD or are available for download on the www.mgeups.com Web site, in the "Download area" section.

1.2 Presentation of the Network Management Card (NMC)

1.2.1 Compatibility with UPSs

The Minislot Network Management Card is compatible with the following UPSs:

Pulsar Evolution 500 / 800 / 1100	From technical level 06
Pulsar Evolution 2200 / 3000	From technical level 05
Pulsar Evolution 1500	From technical level 05
EXtreme C 700 / 1000 / 1500	From technical level B2
EXtreme C 2200 - 3200	From technical level 02
Pulsar EX 700 / 1000 / 1500 RT (US°)	From technical level 03
Pulsar EX 2200 / 3200 (US°)	From technical level 09
Pulsar M 2200 / 3000	All models
Pulsar 700 / 1000 / 1500	All models

Note:

If the UPS's NT is below that indicated in the table above, contact MGE's technical support.

The Network Management Card (66102) is not compatible with Pulsar EX 7/10, Pulsar EX 15/20/30, Pulsar ESV+, 8/11/14/22 ranges.

Network Management Cards acquire information on the operation status of the UPS systems and provide remote control of these systems by means of an ETHERNET network from any SNMP administration station or Web browser.

They also supply alarms to the **Network Shutdown Modules** to trigger shutdown or other automatic actions for protected servers.

Network Management Cards are compatible with the "Enterprise Power Management" supervision system and with the MGE UPS SYSTEMS network protection system.

- ▶ [Network Shutdown Module](#)
- ▶ [Entreprise Power Manager](#)
- ▶ [Management-Pac 2](#)

1.2.2 Direct sending of E-mail

When a UPS event occurs, the Network Management Card can directly notify up to 4 intranet or extranet addresses by e-mail. (see E-mail Notification and [E-mail message settings](#))

1.2.3 Sending text messages (SMS)

The card offers the possibility of redirecting UPS alarms to an e-mail server. The format of these e-mails is compatible with mobile telephone e-mail/SMS transfer systems proposed by ISPs. The format to be used depends on the service provider. For example, sms.0660256585@votre-login.activmail.net (text messages).

1.2.4 Compatibility with the Network Management Systems (NMS) – Trap sending

The Network Management Cards are compatible with the major Network Management Systems (IBM Tivoli, CA Unicenter, HP Insight Manager). The Management-Pac 2 offering includes the necessary SNMP plug-ins to allow an easy integration in the NMS. Events are notified by SNMP trap.

- ▶ NMS can subscribe on page "[Notified Applications](#)"
- ▶ The trap list is given in the [appendix](#).

1.2.5 Environment Sensor (option)

The [Environment Sensor](#) (66846) solution comprises a box to be connected to the Card Settings port of the **Network Management Cards**.

Environment Sensor enables measurement of temperature and humidity around the UPS, consideration of external alarms via 2 dry contacts and notification of alarms according to pre-programmed thresholds. (see [Environmen Status](#) and [Environment Configuration](#))

1.3 Technical data

1.3.1 Hardware characteristics

Dimensions

- ▶ Dimensions (L x l x H) 132 x 66 x 42 mm
- ▶ Weight (gr) 70 g.

Storage

- ▶ Storage temperature -10°C to 70°C

Ambient conditions

- ▶ Operating temperature 0°C to 40°C
- ▶ Ambient humidity 90% RH max without condensation
- ▶ RoHS 100% compatible

1.3.2 EMC Compatibility

When correctly installed and used in accordance with the manufacturer's instructions, the Network Management Card complies with the following standards:

- ▶ Safety for ATI: IEC/EN 60950-1 2002
- ▶ EMC: EN 61000-6-2 (2002), EN 61000-6-3 (2002). IEC/EN 62040-2 (2002)

As per European directives:

- ▶ Low voltage: 73/23/EEC and 93/68/EEC.

► EMC: 89/336/EEC and 93/68/EEC.

1.3.3 Configuration

The user can configure the card with one of the following means:

- Web browser
- Local serial link (network parameters)
- BOOTP/DHCP (network parameters)

1.3.4 Administration

- Up to 50 workstations protected by Network Shutdown Modules - Central or local configuration.
- Up to 5 browsers connected at the same time (3 in SSL).
- Minimum recommended browser versions: Internet Explorer 6.x, Mozilla Firefox 1.5, Netscape 6.x
- E-mail sending configurable according to UPS alarms and transmission of a periodical report.
- Control of UPS on/off switching via the HTML interface.
- Adjustment and control of PowerShare outlets via the HTML interface, sequential starting of the installation and optimisation of backup time by shutting down non-priority systems.
- Automatic data and time adjustment via NTP server.
- Protection by encrypted password.
- Protection by secure SSL connection.
- Saving of logs in the non-volatile memory.
- Languages available: English / French / Spanish / German / Italian
- On-line help in English available for each page.
- Card firmware updated via the network

1.3.5 Network

- Fast ETHERNET 10/100 Mbits compatibility with auto-negotiation on the RJ45 outlet

1.3.5.1 List of ports used

► BootP, DHCP	UDP 68 , 67
► HTML	TCP 80
► SSL	TCP 443
► NSM connection	TCP 5000
► SMTP	25
► NTP	123
► SNMP V1	161
► TRAP SNMP	162

1.3.6 Environment sensor

- Temperature measurement from 0 to 70°C with +/- 1°C accuracy
- Measurement of humidity from 0 to 100% with +/- 6% accuracy
- Min / max time-stamped function for temperature and humidity
- Choice of temperature readings in Celsius or Fahrenheit
- High and low thresholds, hysteresis and offset adjustable via Web interface

- ▶ Possibility of notification of status changes by e-mail, SMS or SNMP trap
- ▶ Position detection of 2 dry contacts (maximum sensor/contact distance: 20 m)
- ▶ Name and status of each configurable contact
- ▶ Recording of events and measurements in the card log
- ▶ Possibility of shutting down the installation in the event of a threshold being exceeded or on opening / closure of a dry contact
- ▶ Connection to the card with straight CAT5 RJ45 network cables (maximum card/sensor distance: 20 m)
- ▶ Hot installation

1.3.7 MIB (Management Information Base)

- ▶ Compatible with MIB MGE V1.7
The list of objects managed can be found in the [appendix](#)

1.3.8 Default parameters

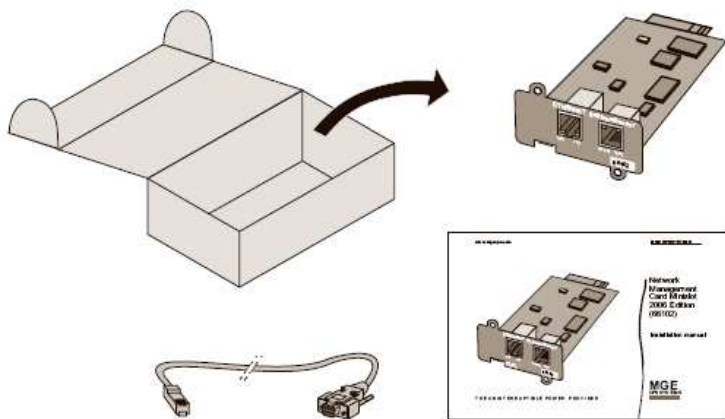
Function	Parameter	Default value	Possible value
Network	IP address	172.17.16.16	Network IP address
	Subnet mask	255.255.0.0	Network IP address
	Gateway Address	0.0.0.0	Network IP address
	BOOTP/DHCP	Enabled	Active / Deactivated
	Firmware Upload	Enabled	Active / Deactivated
	SMTP server	smtpserver	31 characters maximum
System	UPS Contact	Computer Room Manager	49 characters maximum
	UPS Location	Computer Room	49 characters maximum
	History log interval (sec.)	60	5 to 99999 sec.
	Environment log interval (sec.)	300	60 to 99999 sec.
	Default Language	English	English / French / Spanish / German / Italian
Manager table		empty	50 maximum
Access control	User name	MGEUPS	10 characters maximum
	Password	MGEUPS	10 characters maximum
	Community name read	public	49 characters maximum
	Trap port	161	Non configurable
Date and time	Date and time adjustment	Synchronise with an NTP server	Synchronise with an NTP server Synchronise manually
	NTP server	pool.ntp.org	49 characters maximum
Serial link	Speed	9600 baud	Non configurable
	Data bits	8	Non configurable
	Stop bits	1	Non configurable
	Parity	without	Non configurable
	Flow control	without	Non configurable

2 Installation

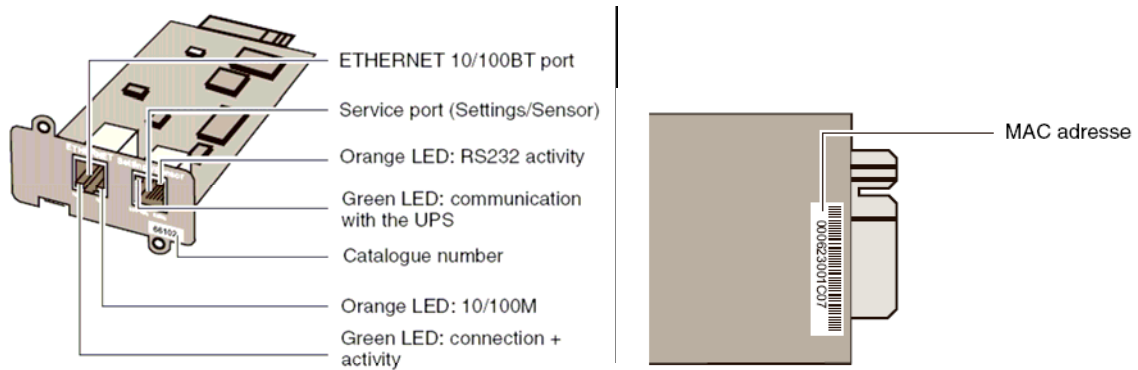
2.1.1 Unpacking and check on contents

The installation kit contents:

- ▶ A Network Management Card (66102)
- ▶ A serial communication cable for configuration (34003918)
- ▶ Installation manual (34003905)



2.1.2 Indications



Ethernet port

LED	Colour	Activity	Description
ACT	Green	▶ Off	▶ Card not connected to the network.
		▶ On	▶ Card connected to the network but without activity
		▶ Flashing	▶ Port is active in receiving / transmission
100M	Orange	▶ Off	▶ Port operating at 10Mbps/s.
		▶ On	▶ Port operating at 100Mbps/s.

Service port

LED	Colour	Activity	Description
UPS Data	Green	<ul style="list-style-type: none"> ▶ Off ▶ On ▶ Flashing 	<ul style="list-style-type: none"> ▶ Card startup in progress. ▶ Communication with UPS in progress ▶ Normal operation. ▶ Communication with the UPS is operational
RS232	Orange	<ul style="list-style-type: none"> ▶ Off ▶ On ▶ Flashing 	<ul style="list-style-type: none"> ▶ Configuration menu is active ▶ Normal operation. Configuration menu is deactivated ▶ Communication with the Environment Sensor (option).

2.1.3 Installation in the UPS

The **Network Management Card (66102)** can be "hot" installed in all UPSs of the MGE UPS SYSTEMS range equipped with a Minislot without having to shut it down.

- ▶ Remove the protective plastic cover from the Minislot
- ▶ Note the card's MAC address prior to insertion
- ▶ Insert and tighten the card's retaining screws
- ▶ Connect the ETHERNET cable
- ▶ Wait 2 min.; the card is completely operational when the green UPS Data LED flashes continuously

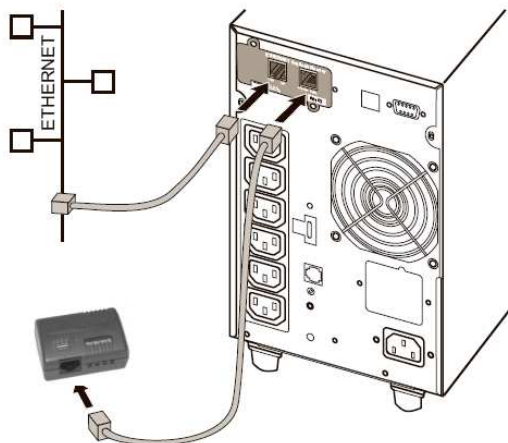
2.1.4 Sensor installation (option)

The Environment sensor is available as an option on the **Network Management Card** and is available from MGE UPS SYSTEMS (reference 66846).

The sensor allows remote monitoring of the UPS's environment through regular measurements: temperature, humidity, status of two external contacts. It also enables notification of alarms (e-mail, trap SNMP) according to pre-programmed thresholds.

It is connected to the Service port (Settings/Sensor) directly on the **Network Management Card** with a standard Ethernet cable (20 meters maximum).

Recognition is automatic. Supervision and configuration are performed via a menu that can be accessed directly from the home page.



3 Configuration

3.1.1 Configure IP parameters

Once the card has started:

Connect one end of the cable (34003918) to the Service port.

If the environment sensor was previously connected, the card must be restarted in order to access the configuration menu.

Connect the other end of the cable to the COM port (IOIOI) of a PC.

Launch a HyperTerminal™ type emulator with the following configuration:

Speed: 9600

Data bits: 8

Parity: none

Stop bits: 1

Flow control: none

"Locally reproduce the characters entered" option: deactivated.

Enter MGEUPS or mgeups. The main menu is displayed:

```

-----
MGE UPS SYSTEMS
NETWORK MANAGEMENT CARD
-----
 1 : Reset
 2 : Network configuration
 3 : Set Login Password to Default
 4 : Return to Default Configuration
 5 : Exit
-----

```

3.1.1.1 Your network is equipped with a DHCP server

The card is configured by default with this service activated.

The card automatically collects IP parameters.

To know the IP parameters, type 2, then type 1. The menu is displayed:

```

Network configuration :
Mode : DHCP
MAC address : 000623001C07
IP address : 172.17.23.18
Subnet mask : 255.255.248.0
Gateway : 172.17.17.1

```

Note the IP address.

To exit, enter 3 then 7. The card is operational.

Note: As long as the card is not connected to the network, it continuously attempts to make connection. Once the connection has been established, the operational mode presented in the table above becomes effective.

3.1.1.2 Your network is not equipped with a DHCP server

In the main menu enter 2, then 2 again.

Follow the instructions and enter the static IP parameters.

At the end of the menu, wait for the "Done" message to be displayed indicating that the IP parameters have been saved.

```
-----  
1 : Read Network settings  
2 : Modify Network settings  
3 : Exit  
-----  
For each of the following questions, you can press «Return» to select  
the value shown in braces, or you can enter a new value.  
Should this target obtain IP settings from the network?[N] N  
Static IP address [172.17.16.16]? 172.17.21.141  
Subnet mask IP address [255.255.0.0]? 255.255.255.0  
Gateway address IP address [0.0.0.0]? 172.17.17.1  
Done
```

Return to the main menu and enter 1.

The card restarts with the new IP parameters.

3.1.2 Test after configuration

To check that the **Network Management Card** is operational after installation and configuration.

From a station connected to the same subnet as the card, open a web browser and enter the IP address of the card in the address field

Check the display of the [home page](#).

4 Supervision and administration by browser

- ▶ On a computer equipped with a Web browser (Internet Explorer, FireFox or Netscape recommended), enter the address initialised previously in the Installation chapter (e.g. <http://172.17.16.16>.)
The "UPS properties" home page is displayed.

4.1.1 Optimising the performance of your browser

- ▶ To view status changes on the UPS in real time, the browser must be configured so that it automatically refreshes all the objects on the current page.
Example on IE 6: **Tools / Internet Options / General / Parameters menu**, tick **Every time this page is visited** and validate.

4.2 UPS

4.2.1 UPS properties page

- ▶ This page gives instant access to the essential information about your UPS.
This page is automatically refreshed every 10 seconds.

MGE
UPS SYSTEMS

Network Management Card

UPS Properties [Help](#)

UPS

UPS Properties

- UPS Properties
- UPS Control
- Weekly Schedule
- Shutdown Parameters
- Alarm Table

Logs and Notification

- Measurements
- Event Log
- System Log
- Email Notification

Settings

- Network
- System
- Notified Applications
- Access Control
- Time
- Firmware Upload

Environment

- Status
- Settings
- Log

UPS

Pulsar M 3000
Computer Room

UPS status

Communication :	OK
Power source :	AC Power
Battery :	Charging
Output load level :	0%
Master output :	Master: On
Controlled outlets :	Group1 : On Group2 : On

Battery status

Battery charge level:	100%
Remaining backup time :	2 h 00 mn 00 s
Last Periodic Test :	OK

Last update : 2006/03/15 14:21:24 [About your UPS](#)

4.2.1.1 "UPS" zone: general information on the UPS.

Indication of the picture and generic name of the UPS range







Computer room: Customised name of your system.

You can change this name on the ["System"](#) page.

4.2.1.2 "UPS status" zone: Essential information:

- ▶ The various icons showing the status of the UPS are:

	<ul style="list-style-type: none"> • Normal operation
	<ul style="list-style-type: none"> • Alarm present. This icon links directly to the alarm page.

• 	• Utility power present
• 	• Battery operation
• 	• Loss of communication with the UPS
• 	• Battery fault
•  (green outlet)	• Outlet powered
•  (red outlet)	• Outlet not powered or not protected

"Communication": indicates the status of the communication between the card and the UPS

"Power source": indicates whether the power comes from the utility or from the UPS battery

"Batteries": indicates whether the battery is being charged, discharged, or is faulty

"Output load level": indicates the power percentage used at UPS output

"Master output": indicates if the UPS output is protected

"Controlled outlets": indicates if the controlled outlets (if available) are powered.

4.2.1.3 "Battery status" zone

- ▶ "Bargraph": graph showing the remaining battery charge (in percent)
- ▶ "Battery charge level": remaining battery charge (in percent)
- ▶ "Remaining backup time": Estimation of the battery's maximum backup time remaining before UPS shutdown
- ▶ "Last periodic test": Result of the last automatic battery test carried out by the UPS


Possible values are:

- **OK**: the test was completed correctly
- **NOK**: the battery needs to be checked
- **Deactivated**: the automatic battery test is not validated on the UPS

The "About your UPS" zone provides information on the UPS and the card, in particular, the model range and software version.

About your UPS


UPS	
UPS Name :	Pulsar M 3000
UPS Firmware revision :	PR2C
Network Management Card	
Firmware revision :	V_1_03



4.2.2 On-line help

On-line contextual help in English is available at the top of each page by clicking on the **Help** link, which is always located on the top right corner. The navigation menu of the on-line help is identical to that of the card's pages.

The Help page always opens a new window.



UPS

- ▶ [UPS Properties](#)
- ▶ [UPS Control](#)
- ▶ [Weekly Schedule](#)
- ▶ [Shutdown Parameters](#)
- ▶ [Alarm Table](#)

Logs and Notification

- ▶ [Measurements](#)
- ▶ [Event Log](#)
- ▶ [System Log](#)
- ▶ [Email Notification](#)

Settings

- ▶ [Network](#)
- ▶ [System](#)
- ▶ [Notified Applications](#)
- ▶ [Access Control](#)
- ▶ [Time](#)
- ▶ [Firmware upload](#)

Environment

- ▶ [Status](#)
- ▶ [Settings](#)
- ▶ [Log](#)

Network Management Card Help

UPS Properties Help

This is the page by default, displaying the fundamentals status of the UPS.

UPS feature identifies the UPS, which is powering the electrical network.

UPS Status feature describes how the UPS is currently working.

Battery Status gives informations on the battery autonomy.

Remaining backup time : Estimation of the remaining battery backup time based on the nominal value.

Refresh : The Web browser refreshes this page every 10 seconds.

Alarm triangle : If an alarm appears, a red triangle is displayed. Click on it to see the current alarm page. When there is no alarm the green OK icon is displayed.

4.2.3 UPS control

Click on the "UPS Control" section in the menu

UPS configuration may prevent the shutdown and restart commands from being properly run. Read the UPS user manual for more information.

The screenshot shows the MGE UPS SYSTEMS Pulsar M 3000 web interface. The left sidebar contains a menu with the following items:

- UPS**
 - UPS Properties
 - UPS Control
 - Weekly Schedule
 - Shutdown Parameters
 - Alarm Table
- Logs and Notification**
 - Measurements
 - Event Log
 - System Log
 - Email Notification
- Settings**
 - Network
 - System
 - Notified Applications
 - Access Control
 - Time
 - Firmware Upload
- Environment**
 - Status
 - Settings
 - Log

The main content area is titled "UPS Control" and features a table with the following columns: Output, Status, Control, Off Delay, Toggle Duration, and On Delay.

Output	Status	Control	Off Delay	Toggle Duration	On Delay
Master	On	Safe power down & reboot		145 sec	
Group1	On	None	0 sec	0 sec	0 sec
Group2	On	None	0 sec	0 sec	0 sec

Below the table are "Execute" and "Save" buttons.

This page enables triggering of [startup and shutdown sequences](#) for the UPS main output and controlled outlets.

- The status of each output is displayed by a symbol associated with the **Off** label (red symbol) or **On** (green symbol).
- The shutdown sequences take into account the time required for the registered servers to shut down without losing data ([see shutdown parameters](#)).
- The main outlet has priority over the controlled outlets. Shutdown of the main outlet causes the controlled outlets to shut down. Controlled outlets can only be started if the master outlet is on.

The Check column proposes six different commands, and a command is only actually started after clicking on **'Execute'**:

"Safe power down": A sequence to switch off output power is launched immediately. The systems supplied are shut down correctly while the shutdown sequence is running, then the output is cut.

"Safe power down & reboot": A sequence to switch off then restore output power is launched immediately. The powered systems are shut down correctly during the shutdown sequence, then the output is switched off.

Finally, the restart sequence is launched at the end of the time delay specified in the **"Toggle duration"** parameter. The output status is updated.

"Immediate On": A sequence to switch on output power is launched immediately. The output is re-powered and the systems supplied start up correctly.

"Delayed, safe power down": This is the same switch off sequence as for the **"Safe power down"** command, but postponed by the number of seconds programmed in the "Off Delay" parameter.

"Delayed, safe power down & reboot": This is the same switch off then on sequence as for the **"Safe power down & reboot"** command, but postponed by the number of seconds programmed in the "Off Delay" parameter.

"Delayed On": This is the same switch on sequence as for the **"Immediate On"** command, but postponed by the number of seconds programmed in the "On Delay" parameter.

The **Save** button saves the **Off Delay**, **Toggle duration** and **On Delay** parameters on the card.

Security: The administrator must click on **Save** and enter his/her login/password to save modifications or run commands. The default login and password by default are: **MGEUPS**

4.2.4 UPS weekly schedule programming

Click on the "Weekly schedule" section of the menu.

UPS configuration may prevent the shutdown and restart commands from being properly run. Read the UPS user manual for more information.

The weekly schedule enables the administrator to optimise power consumption or program a reboot of the protected equipment at a set time.

In a shutdown sequence, the **Network Shutdown Modules** connected to the card are informed and ensure that each machine is shut down correctly before the UPS output is switched off.

Up to 7 UPS shutdown sequences can be programmed in one week, with a minimum shutdown delay of 30 minutes.

The On / Off sequences are valid only if the card's time has been properly set.

Security: The administrator clicks on "Save" and enters his/her login / password to save any edits. The login and password by default are:

MGEUPS

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Weekly Schedule [Help](#)

Day	Shutoff Time	Restart Time
Sunday	-	-
Monday	20:00	07:00
Tuesday	20:00	07:00
Wednesday	20:00	07:00
Thursday	20:00	07:00
Friday	20:00	07:00
Saturday	-	-

Save

UPS

- UPS Properties
- UPS Control
- Weekly Schedule
- Shutdown Parameters
- Alarm Table

Logs and Notification

- Measurements
- Event Log
- System Log
- Email Notification

Settings

- Network
- System
- Notified Applications
- Access Control
- Time
- Firmware Upload

Environment

- Status
- Settings
- Log

4.2.5 Shutdown parameters

This page enables viewing and configuration of UPS operating parameters in battery mode and for power restoration. Click on the "Shutdown parameters" section in the menu to see the list of parameters.



Pulsar M 3000

UPS

- ▶ [UPS Properties](#)
- ▶ [UPS Control](#)
- ▶ [Weekly Schedule](#)
- ▶ [Shutdown Parameters](#)
- ▶ [Alarm Table](#)

Logs and Notification

- ▶ [Measurements](#)
- ▶ [Event Log](#)
- ▶ [System Log](#)
- ▶ [Email Notification](#)

Settings

- ▶ [Network](#)
- ▶ [System](#)
- ▶ [Notified Applications](#)
- ▶ [Access Control](#)
- ▶ [Time](#)
- ▶ [Firmware Upload](#)

Environment

- ▶ [Status](#)
- ▶ [Settings](#)
- ▶ [Log](#)

Shutdown Parameters [Help](#)

Output	On battery	System Shutdown	Restart
<input type="radio"/> Master	Shutdown if Remaining time under: <input type="text" value="180"/> sec if Capacity under: <input type="text" value="20"/> % <input type="checkbox"/> after: <input type="text" value="30"/> min	Shutdown duration: <input type="text" value="120"/> sec See also additional Shutdown configuration on Environment Settings	if Capacity exceeds: <input type="text" value="0"/> %
<input type="radio"/> Group1	Switch Off after: <input type="text" value="99999"/> sec if Capacity under: <input type="text" value="0"/> %	Shutdown duration: <input type="text" value="120"/> sec	Switch On after: <input type="text" value="3"/> sec
<input type="radio"/> Group2	Switch Off after: <input type="text" value="99999"/> sec if Capacity under: <input type="text" value="0"/> %	Shutdown duration: <input type="text" value="120"/> sec	Switch On after: <input type="text" value="6"/> sec

Show advanced parameters

Save modified settings :

Save

Export settings to file :

Download

Import settings from file :

Parcourir...

Upload

When you tick the **Show advanced parameters** option, extra parameters are displayed. These parameters enable, in particular, adjustment of certain thresholds related to the percentage of remaining battery charge level.

The **Output** column enables each outlet to be named (maximum 20 characters).

Note

As priority is given to the main outlet, the card cannot supply the controlled outlets when main outlet power is off.

For the main outlet ("Master" by default)

The first shutdown criteria initiates the restart of the [shutdown sequence](#).

- ▶ **If remaining time is under** (0 to 99999 seconds, 180 by default) is the minimum remaining backup time from which the shutdown sequence is launched.
- ▶ **If battery capacity is under** (0 to 100%); this value cannot be less than that of the UPS and is the minimum remaining battery capacity level from which the shutdown sequence is launched.
- ▶ **Shutdown after** (0 to 99999 minutes, not validated by default) is the operating time in minutes left for users after a switch to backup before starting the shutdown sequence.
- ▶ **Shutdown duration** (120 seconds by default) is the time required for complete shutdown of systems when a switch to backup time is long enough to trigger the shutdown sequences. It is calculated automatically at the maximum of Shutdown duration of subscribed clients but can be modified in the Advanced mode.
- ▶ **If battery capacity exceeds** Minimum battery level to reach before restarting the UPS after utility restoration

Important: Certain UPSs do not support this option

For the controlled outlets ("group 1 or group 2" by default)

The page enables programming of operation time and level in backup mode to manage outlet load shedding in the event of electric power failure:

- ▶ **Switch Off after** (from 0 to 99999, 65535 by default) defines the time during which the outlet is supplied starting from the moment of utility failure. Caution, this time includes the outlet shutdown duration.
- ▶ **Switch Off if battery capacity under** (0 by default) is an extra condition for outlet shutdown that can trigger the shutdown sequence before the shutdown duration runs out.
- ▶ **Shutdown duration** is the time required for complete shutdown of the systems supplied by the outlet when an outlet shutdown sequence is launched.
It is calculated automatically using the maximum shutdown durations of notified applications on the outlets.
- ▶ **Switch On after** (from 0 to 99999, default 65535) is the period between main output startup and startup of the relevant programmable outlet, therefore outlet startup can be delayed in relation to the main output.

Important: Certain UPSs do not support this option

Export settings to file: Enables exportation ("Download" button) and saving of card configuration information.

Import settings from file: Enables selection of a configuration file ("Browse" button) and uploading ("Upload" button) of card configuration information

Security: The administrator has to click on **Save** and enter his/her login/password to save any modifications. The login and password by default are: **MGEUPS**

4.2.6 Viewing the alarms

- Click on "**Alarm Table**" in the menu to view the list of current alarms. The table of managed alarms is included in the [appendix](#).

The screenshot shows the MGE UPS SYSTEMS web interface for a Pulsar M 3000. On the left is a navigation menu with sections for 'UPS' and 'Logs and Notification'. The 'UPS' section includes links for 'UPS Properties', 'UPS Control', 'Weekly Schedule', 'Shutdown Parameters', and 'Alarm Table'. The 'Logs and Notification' section includes links for 'Measurements', 'Event Log', 'System Log', and 'Email Notification'. The 'Alarm Table' link is highlighted with a red bracket. The main content area displays the 'Alarm Table' with a 'Help' link. The table contains the following data:

Alarm Time	Alarm Description
2006/03/15 14:39:22	Normal AC voltage out of tolerance
2006/03/15 14:39:23	Bypass AC voltage out of tolerance
2006/03/15 14:39:35	Normal AC NOK
2006/03/15 14:39:35	UPS on battery

4.2.7 Measurements

Click on "**Measurements**" in the menu

The following measurements are saved and time-stamped (env. 430):

- ▶ **"Input voltage"**: Value of the utility voltage supplying the UPS
- ▶ **"Input frequency"**: Value of the utility frequency supplying the UPS
- ▶ **"Output voltage"**: Value of the output voltage of your UPS
- ▶ **"Output load (%)"**: Value of the percentage of load at UPS output
- ▶ **"Battery capacity (%)"**: Percentage of charge available in the battery
- ▶ **"Remaining time (min.)"**: Estimation of the remaining backup time
- ▶ The save frequency of these values is defined in the "[System](#)" page (60 seconds by default). Approximately 435 time-stamps are stored permanently on the card. The oldest time-stamps are automatically deleted.
- ▶ **"Save Log"** enables all saved values to be opened or saved in CSV format. (compatible with Excel type spreadsheets)
- ▶ **"Clear Log"** enables deletion of all records. Enter the login/password to validate this action.



Pulsar M 3000

- UPS**
 - ▶ [UPS Properties](#)
 - ▶ [UPS Control](#)
 - ▶ [Weekly Schedule](#)
 - ▶ [Shutdown Parameters](#)
 - ▶ [Alarm Table](#)
- Logs and Notification**
 - ▶ **[Measurements](#)**
 - ▶ [Event Log](#)
 - ▶ [System Log](#)
 - ▶ [Email Notification](#)

Measurements Help							
		<input type="button" value="Save Log"/>		<input type="button" value="Clear Log"/>			
Date	Time	Input voltage (Volt)	Input frequency (Hertz)	Output voltage (Volt)	Output load (%)	Battery capacity (%)	Remaining time (mn)
2006/03/15	14:40:09	230	50	230	0	100	120
2006/03/15	14:39:06	230	50	230	0	100	120
2006/03/15	14:38:04	230	50	230	0	100	120
2006/03/15	14:36:56	230	50	230	0	100	120
2006/03/15	14:35:50	230	50	230	0	100	120
2006/03/15	14:34:49	231	50	230	0	100	120
2006/03/15	14:33:44	230	50	230	0	100	120

4.2.8 Event log

Click on **"Event Log"** in the menu

- ▶ **"Save log"** enables all saved values to be opened or saved in CSV format. (compatible with Excel type spreadsheets)
- ▶ **"Clear log"** enables deletion of all records. The administrator must enter his/her login / password to validate this action.

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Event Log [Help](#)

Save Log Clear Log

Date	Time	Event Description
2006/03/15	14:41:56	Bypass AC phase out of tolerance
2006/03/15	14:41:04	Bypass AC phase OK
2006/03/15	14:40:59	Bypass AC phase out of tolerance
2006/03/15	14:39:55	Bypass AC phase OK
2006/03/15	14:39:46	UPS on normal AC
2006/03/15	14:39:46	Normal AC OK
2006/03/15	14:39:44	Bypass AC voltage OK
2006/03/15	14:39:44	Bypass AC phase out of tolerance

The card can save 435 events. The table of managed alarms is included in the [appendix](#).

4.2.9 System log

Click on **"System log"** in the menu

- ▶ **"Save log"** enables all saved values to be opened or saved in CSV format. (compatible with Excel type spreadsheets)
- ▶ **"Clear log"** enables deletion of all records. The administrator must enter his/her login / password to validate this action.

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Evénements système [Aide](#)

Enregistrer Effacer

Date	Heure	Description événement
2006/03/14	14:34:40	Carte reprogrammée
2006/03/14	14:24:57	Démarrage de la carte
2006/03/14	12:58:34	Environment sensor : Retour de communication
2006/03/14	12:31:49	Network Management Card startup
2006/03/14	12:17:58	Environment sensor : Communication restored
1969/12/31	23:59:59	Network Management Card startup

The card can save 435 events. The table of managed alarms is included in the [appendix](#).

4.3 Notification

4.3.1 Email Notification

The card offers the possibility of redirecting UPS alarms to an e-mail server. The format of these e-mails is compatible with mobile telephone transfer systems using text messages (SMS).



Pulsar M 3000

Email Notification
[Help](#)

UPS

- ▶ [UPS Properties](#)
- ▶ [UPS Control](#)
- ▶ [Weekly Schedule](#)
- ▶ [Shutdown Parameters](#)
- ▶ [Alarm Table](#)

Logs and Notification

- ▶ [Measurements](#)
- ▶ [Event Log](#)
- ▶ [System Log](#)
- ▶ [Email Notification](#)

Settings

- ▶ [Network](#)
- ▶ [System](#)
- ▶ [Notified Applications](#)
- ▶ [Access Control](#)
- ▶ [Time](#)
- ▶ [Firmware Upload](#)

Environment

- ▶ [Status](#)
- ▶ [Settings](#)
- ▶ [Log](#)

Recipient list

recipient1@domain.com	Save
recipient2@domain.com	
recipient3@domain.com	
recipient4@domain.com	

Recipient :

Attached files : Measurements
 Event Log
 System Log

Periodic report : Every day(s) at:
day of next report:

[Email Message Settings](#)
Configure SMTP Server on [Network Settings](#)

Notified events for the selected Recipient	
Battery operation	
UPS on battery	<input type="checkbox"/>
UPS on normal AC	<input type="checkbox"/>
UPS Off sequence in progress	<input checked="" type="checkbox"/>
Low battery	<input type="checkbox"/>
UPS alarms	
Battery fault	<input type="checkbox"/>
Battery OK	<input type="checkbox"/>
UPS overload	<input type="checkbox"/>
UPS returns to normal load	<input type="checkbox"/>
UPS fault	<input checked="" type="checkbox"/>
UPS OK	<input type="checkbox"/>
UPS communication failed	<input type="checkbox"/>
UPS communication restored	<input type="checkbox"/>
Charger fault	<input type="checkbox"/>
Output on by-pass	<input type="checkbox"/>
Return from by-pass	<input type="checkbox"/>
Software alarms	
Firmware upgrade	<input type="checkbox"/>

Export settings to file :

Import settings from file :

- ▶ **Recipient List:** On the left side of this page, up to four recipients can be configured to receive e-mails from the card. Each addressee has its own trigger events, selected from the right side of the page, for which an e-mail is sent. The card's log indicates e-mail transmission errors

Each recipient is configured with the following parameters

 - ▶ **Recipient:** (Field is limited to 49 characters) this is the e-mail address of the person or department to receive the e-mail. The default value is recipientx@domain.com
 - ▶ **Attached files:** The files selected (Measurements, Event log, System log, Environment measurements) are enclosed with each e-mail sent. The files are sent in CSV format
 - ▶ **Periodic report:** In addition to the e-mails sent when events occur, a periodic e-mail containing the 3 log files can be sent to the recipient every x days at the time specified by the user.

To configure the first transmission, specify the day, time and frequency of the next transmission in the "next report" box. After this date, the page will show the date and time of the next transmission.

Data are sent in CSV format.
- ▶ **Save:** Saves any modifications.
- ▶ **Test** enables an e-mail to be sent to the recipient immediately. This is one way of checking e-mail transmission, particularly access to the SMTP server configured in "Network" settings. A transmission report is added to the system log.

The event label in the subject and text of the message is replaced with a test label.

If the user makes any modifications to the page, they must be saved before using the "Test" function.
- ▶ **Notified events:**

The right side of the page shows the events that can be notified.

By default, only the main events of battery operation and a few UPS alarms are accessible. All the events appear if the **Show/Hide Events** option is actuated.

By default, two events are selected for notification. The user can modify this pre-selection by ticking other events or can, on the contrary, restore the initial configuration by clicking **Set Default**.
- ▶ **Email Message Settings:** access to the message configuration page
- ▶ Network Settings: enables the name of the SMTP server to be entered. [See page](#)
- ▶ Export settings to file: **Enables exportation ("Download" button) and saving of card parameterisation information.**
- ▶ Import settings from file: **Enables selection of configuration file ("Browse" button) and uploading ("Upload" button) of card configuration information.**
- ▶ Security: **The administrator has to click on Save and enter his/her login/password to save any modifications. The default login and password are: MGEUPS**

4.3.2 E-mail Message Settings

This page enables customisation of the content of the messages received by recipients of e-mails sent by the card. Customisation is common to the four recipients that can be notified (see [E-mail notification](#)).



Pulsar M 3000

UPS

- [UPS Properties](#)
- [UPS Control](#)
- [Weekly Schedule](#)
- [Shutdown Parameters](#)
- [Alarm Table](#)

Logs and Notification

- [Measurements](#)
- [Event Log](#)
- [System Log](#)
- [Email Notification](#)

Settings

- [Network](#)
- [System](#)
- [Notified Applications](#)
- [Access Control](#)
- [Time](#)
- [Firmware Upload](#)

Environment

- [Status](#)
- [Settings](#)
- [Log](#)

Email Message Settings

[Help](#)

These settings are common for all the recipients, which can be notified by E-mail.

Sender :

ups@domain.com

Subject :

MGE UPS SYSTEMS - <Event message>

MGE UPS SYSTEMS

UPS Name

UPS Location

Event message

Message text :

Type here your own text

Save

• **Sender**

(59 characters maximum) identifies the source of the message. The default value is *ups@domain.com*.

This field is free. However, depending on the type of SMTP server configuration, it is possible that the server checks that the domain name contained in the Sender address exists, and even that the user in the Sender address belongs to this domain.

• **Subject**

enables the user to specify the subject of the e-mail to be sent. By entering some free text and selecting from several optional fields, if desired, the message subject is built:

- **UPS name** recalls the name of the UPS; it may or may not be selected.
- **UPS location** recalls the geographic location of the UPS (see System Settings); it may or may not be selected.
- **Event message** identifies the event generating the e-mail; it may or may not be selected.

• - **Message text** is a free zone.

The body of the e-mail sent is composed of:

- **Message text**, which is free text.
- The date and time of the event, as saved in the log.
- URL of the card, enabling a direct link with the card to be established.
- Attachments, as configured for the e-mail recipients .- duplication of the subject, as configured.

De ups@domain.com A patrick.vincent
Objet MGE UPS SYSTEMS - Extreme 1000... cc

MGE UPS SYSTEMS - Extreme 1000C - Computer Room - Test message
Date : 2006/02/13 Time : 14:24:27
URL : <http://172.17.21.146>



MGE UPS SYSTEMS LogUpsMesure.csv

4.4 Configuration

The parameters of this menu can only be modified after entering the "Login" and "Password". The following screen is proposed automatically:



The default login and password are: MGEUPS

Each field accepts up to 10 characters max.

After the login and password are entered, they remain active for 5 minutes.

If the browser is closed, they will have to be re-entered.

An error in either field results in systematic rejection of the requested action (save, page access, card reboot...). After three unsuccessful attempts, the browser must be rebooted.

These two fields do not travel "decoded" on the IT network. They are encrypted with an MD5 type algorithm, ensuring total confidentiality.

In the event of [password loss](#), the user can return to the default values via the maintenance menu.

4.4.1 Network settings

Click on "Network" in the menu.

This menu enables the administrator to configure the network parameters of the card and authorisation of the remote upgrade of the embedded system.

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Pulsar M 3000

Network Settings [Help](#)

IP Address :

Subnet Mask :

Gateway Address :

Hostname :

Domain Name :

BOOTP/DHCP :

Firmware Upload :

Primary DNS Server :

Secondary DNS Server :

SMTP Server (for Email Notification) :

Save modified settings :

Export settings to file :

Import settings from file :

- ▶ **IP Address:** The IP address of the card (e.g.: 172.17.22.252).
- ▶ **Subnet Mask:** The mask of the sub-network of your network (e.g.: 255.255.255.0).
- ▶ **Gateway Address:** Indicate the IP address of the gateway to access the stations located outside the card's subnet (e.g.: 172.17.17.1).
- ▶ **Hostname** must be suited to the card. This is the first part of the fully qualified domain name, used by the DNS.
As the card does not support NetBIOS protocol, the hostname will only be sent to DNS if the DHCP server sends it the hostname with the new IP address. This mechanism is described in the update of the DNS protocol RFC 2136
- ▶ **Domain Name** is the domain to which the card belongs. This is the part of the fully qualified domain name that follows the hostname and is used by the DNS. The default value of the two parameters comprising the fully qualified domain name: ups.domain.com
- ▶ **BOOTP/DHCP:** Authorises (choose "Enabled") configuration of network parameters with your BootP/DHCP server when the card is booted.
Mode of card operation with server: After each startup, the card makes 5 attempts to recover the network parameters. If no response is

received from the server, the card boots with the last saved parameters from the previous start. These parameters are those shown on the page.

The default value for this parameter is "Enable"

Note 1:

If the hostname is not used, the IP address supplied by the DHCP server must be fixed to maintain connection with the clients installed on the stations to be protected.

Note 2:

During the first connection, if the DHCP query is not successful, the NMC starts with the following IP configuration:

IP address: 172.17.16.16

Subnet mask: 255.255.255.0

Gateway Address: 0.0.0.0

- ▶ **Firmware Upload:** Authorise (choose "Enabled") remote updating of the card's embedded software.
The default value for this parameter is "Enabled".
- ▶ **Primary DNS Server:** contains the IP address of the main DNS server ensuring conversion of the domain name to IP address.
- ▶ **Secondary DNS Server:** contains the IP address of the secondary DNS server ensuring conversion of the domain name to IP address if the primary DNS server is not available.
- ▶ **SMTP Server:** contains the name or IP address of the local server with which the card connects to send e-mails.
It may be filled in either as host + domain name (DNS resolution), or directly with the IP address.
The default value is smtpserver. The card uses the standard port (25) for sending e-mails.

Export settings to file: Enables exportation ("Download" button) and saving of card configuration information.

Import settings from file: Enables selection of a configuration file ("Browse" button) and uploading ("Upload" button) of card configuration information.

Important note:

The card must be rebooted after any changes to these parameters.. [See "System" page](#)

Security: The administrator has to click on **Save** and enter his/her login/password to save any modifications.

4.4.2 System

Click on "**System**" in the menu.

This menu enables the customisation of the information on the [UPS properties](#) pages.

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System Settings [Help](#)

UPS

- UPS Properties
- UPS Control
- Weekly Schedule
- Shutdown Parameters
- Alarm Table

Logs and Notification

- Measurements
- Event Log
- System Log
- Email Notification

Settings

- Network
- System**
- Notified Applications
- Access Control
- Time
- Firmware Upload

Environment

- Status
- Settings
- Log

UPS Contact : Computer Room Manager

UPS Location : Computer Room

Default Language : English

History log interval (sec): 60

Environment log interval (sec): 300

Save modified settings : Save

Export settings to file : Download

Import settings from file : Parcourir... Upload

Reset Communication

Keep TCP/IP parameters Factory Reset

- UPS Contact:** This text field is limited to 49 characters. Enter the name of the person responsible for UPS administration at IT network level and/or electrical maintenance. This field does not appear on any other Web page. By default, its value is "Computer Room Manager".
- UPS Location:** Enter a description (limited to 49 characters) of the location of the UPS in your installation (e.g. Computer room E1-C066). This text is displayed in the home page. By default, its value is "Computer Room".
- Default Language:** Enables initialisation of the browser language at card connection. Choice of one of the available languages: **English, French, German, Spanish, Italian** changes the language of the html interface pages (reboot the browser after modification).
- History log interval:** [from 5 to 99999 sec., 60 by default]. Measurement save period.
- Environment log interval:** [from 60 to 99999 sec., 300 by default]. Temperature and humidity measurement save period.
- Reset Communication button:** performs a remote reboot of the card without modifying the configuration. This action is compulsory for consideration of any changes made on the "**Network Settings**" page. Security of this operation is ensured by requesting Login and Password.
- Factory Reset button:** enables restoration of the default configuration of all the card's parameters. TCP/IP parameters: IP address, subnet mask, gateway and BootP/DHCP value are maintained if the "**Keep TCP/IP parameters**" option is selected. Security of this operation is ensured by requesting Login and Password. The default login and password are: **MGEUPS**
- Export settings to file:** Enables exportation ("Download" button) and saving of card configuration information.
- Import settings from file:** Enables selection of a configuration file ("Browse" button) and uploading ("Upload" button) of card configuration information.

4.4.3 Notified Applications

Click on "**Notified Applications**" in the menu.

Security: The administrator has to enter his/her login/password in order to view this information.

This menu enables:

- ▶ The addition of the supervision stations receiving traps and configuration of the trap type.
- ▶ To list all the Notified Applications and the main parameters.
- ▶ To test the operation of notified applications
 - ▶ by simulating power loss
 - ▶ by sending a real shutdown sequence.

MGE UPS SYSTEMS Pulsar M 3000

Notified Applications [Help](#)

All	Nr	Hostname or IP address	Application Name	Output	Configuration	Shutdown duration (sec)	Shutdown after: (min)
<input type="checkbox"/>	1	MISFR0079F	Shutdown Module V2.6	Master	CENTRALIZED	120	
<input type="checkbox"/>	2	172.17.23.126	HP OV server				

Select the applications to be removed.

Select the applications to be tested.

Select the Network-Management-System to be modified.

Up to 50 destinations can be managed by the card.

Important note: It is not necessary to add the Network Shutdown Modules protecting your servers in this list. These modules subscribe and unsubscribe themselves automatically.

Select an entry in the list to modify the values in the edit zone at the bottom of the page. The table displays the following information:

- ▶ The **All** button: Allows the following information to be displayed:
- ▶ **Nr** is the index where the application is stored into the table
- ▶ Hostname or Address IP: By priority, the hostname of the computer is displayed when the IP address can be converted into a hostname by a DNS server or if the application has been entered as a hostname.
- ▶ Application Name: sent by the application during subscription or entered manually.
- ▶ Output: number of the UPS output from which the client is powered.

- ▶ Configuration: shows where the parameters of the Network Shutdown Module come from: Local (coming from the application) or Central (coming from the card).
The [Central shutdown configuration](#) is available by clicking on the Configuration link.
- ▶ Shutdown duration: the shutdown duration necessary to properly shutdown the computer.
- ▶ **Shutdown after:** the time available to the user from the power failure until the launch of the shutoff sequence of the UPS and equipment. This parameter is optional.

Many actions are available on this page:

- ▶ **Remove:** Depending on the kind of application, the selected ones will definitively disappear from the table as SNMP applications, or they will disappear and automatically re-subscribe as Network Shutdown Module applications.
- ▶ **Utility failure Test:** Two alarms, 'Utility failure' and 'Utility restored' spaced 60 seconds apart, will be sent to the applications selected, making sure that the applications can be reached over the network.
Shutdown Test: This test simulates a UPS on battery operation. It enables an easy check to see if the server protection works correctly.
 - No intervention on the UPS is required.
 - The applications selected will process the simultaneous alarms and perform an actual shutdown sequence.

WARNING!

- This test will generate a REAL shutdown sequence of the selected servers on which the Network Shutdown Module application is running.

- ▶ **Add NMS:** allows an SNMP trap receiver to be added such as a Network Management System.
- ▶ **Modify NMS:** allows an SNMP trap receiver to be modified.
Both buttons open a new window where it is possible to enter the Application name, the Hostname or IP Address, the Trap community and the severity.

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UPS

- ▶ [UPS Properties](#)
- ▶ [UPS Control](#)
- ▶ [Weekly Schedule](#)
- ▶ [Shutdown Parameters](#)
- ▶ [Alarm Table](#)

Logs and Notification

- ▶ [Measurements](#)
- ▶ [Event Log](#)
- ▶ [System Log](#)
- ▶ [Email Notification](#)

Settings

- ▶ [Network](#)
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- ▶ [Time](#)
- ▶ [Firmware Upload](#)

Network-Management-System

Nr: 1

Application Name: HP OV server

Hostname or IP address: 172.17.23.126

Protocol: SNMP V1

Trap Community: public

Severity: 1 - Warning

Cancel Save

The default severity value is 1 - Warning

4.4.4 Central shutdown configuration

Click on "**Notified Applications**" in the menu, then "**Configuration**".

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Pulsar M 3000

Central shutdown configuration [Help](#)

This configuration will be used by the Network-Shutdown-Modules, on next connection.

Shutdown Parameters

Shutdown after: min Shutdown duration : sec

Broadcast

Administrators

Users

This page is used to define either the "shutdown" or the "notification" settings used by the Network Shutdown Modules that connect to Network Management Card. These settings are used by the Network Shutdown Modules if they are in central-configuration mode or if their configuration is not valid.

- ▶ Shutdown duration: the shutdown duration necessary to properly shutdown the computer.
- ▶ Shutdown after: the time available to the user from the power failure until the launch of the shutoff sequence of the UPS and equipment. This parameter is optional. Uncheck the box if you wish not to use this parameter.
- ▶ Broadcast : Sends network notifications to the Administrators and Users groups on events declared in the server hosting the NSM

If you wish to set up a new configuration for the Network Shutdown Modules already set to "central-configuration mode", proceed as indicated below:

- ▶ Change the Network Shutdown Module parameters in the "Notified Applications" page.
- ▶ Click the "Save" button.
- ▶ In this page, select the NSMs for which you want to apply the new configuration.
- ▶ Press the "Remove" button.
- ▶ The NSMs selected will disconnect then reconnect and use the new configuration.

4.4.5 Access control

Click on "**Access Control**" in the menu.

To access this page, the login and password are systematically requested if they have not already been entered.

This menu enables configuration of the different parameters enabling secure access to the card via a browser or SNMP.

The screenshot shows the 'Access Control' configuration page for the Pulsar M 3000. The interface includes a sidebar menu on the left with categories: UPS, Logs and Notification, Settings, and Environment. The main content area is titled 'Access Control' and contains the following configuration fields:

- Enter New Manager Login :** MGEUPS
- Enter New Password :** [masked]
- Confirm New Password :** [masked]
- Current Community Read-Only is :** public
- Change Community Read-Only :** public
- Security mode:**
 - Authentication for configuration
 - Full authentication
 - SSL and full authentication

At the bottom of the configuration area, there are three buttons: 'Save', 'Download', and 'Upload'.

- ▶ **Login:** This text field is limited to 10 characters. - Enables secure access and modification of pages. Default value "MGEUPS".
- ▶ **Change / Confirm password:** This text field is limited to 10 characters. - Enables secure access to Configuration menu pages. Default value "MGEUPS".
- ▶ **Current Community Read name:** Indicates the SNMP community name used for read operations.
- ▶ **Change Community Read-Only:** This text field is limited to 49 characters - Enables the SNMP community name used for read operations to be changed.
- ▶ **Security mode:** manages the various authentication methods for page access
 - ▶ **Authentication for configuration:** Only the configuration pages are protected by login / password.
 - ▶ **Full authentication:** All pages are protected by login / password.
 - ▶ **SSL and full authentication:** All pages are protected by login / password and are only accessible in SSL
- ▶ **SSL Access:** When selected, access to the Web interface is made in secure mode (https).

Connections with Network Shutdown Modules stay in standard mode (secure TCP)

SSL Security Implementation:

SSL	→ version 3.0
TLS	→ version 1.0
Method	→ TLS_RSA_WITH_512_MD5
Auth	→ RSA
Key Exchange	→ RSA
Encryption	→ RC4_512

Digest → MD5
Changes take effect after a card reboot

Export settings to file: Enables exportation ("Download" button) and saving of card configuration information.

Import settings from file: Enables selection of a configuration file ("Browse" button) and uploading ("Upload" button) of card configuration information

4.4.6 Date and time

Click on "**Date and Time**" in the menu.

This menu enables initialisation of the date and time of the card in three different ways. The date format is always of year/month/day type

- Set manually:** Enables initialisation of the date and time of the card, with the values entered in the Date and Time fields. This update is made after clicking on the "**Save**" button.
 Maximum drift is +/- 2 min./month
- Synchronize with NTP server:** Enables connection with a time server, either available on the company's internal network or on the Web. This server communicates GMT time. The IP address or hostname of the time server must be entered, and the time zone of your geographic area must then be selected from the list. Connection is made with the server and the date and time are set after clicking on the "Save" button. Time is updated every five hours, thus preventing any drift in the time. After two attempts, if the NTP server is not accessible, the card shifts to manual mode.
 The card uses the NTP protocol (UDP 123 port). The "firewall" must be set to transmit queries outside the intranet. No error message is generated if the time server contact fails.

Note 1:

The even the card is used in a UPS supporting time-stamping, the card's time is automatically synchronized with that of the UPS.

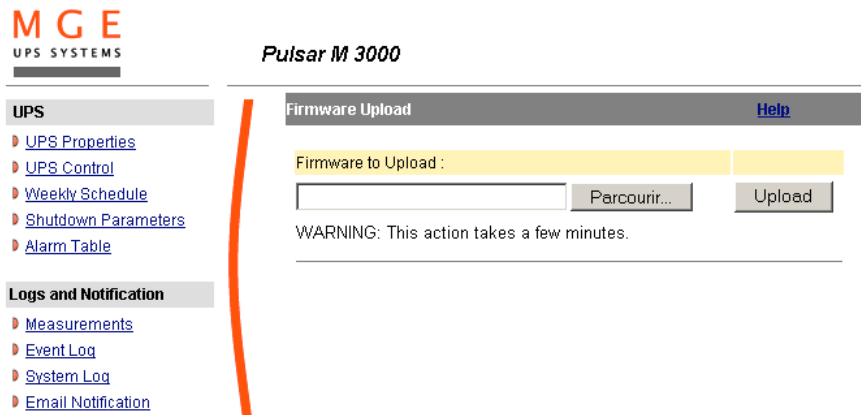
Note 2:

After startup, if the card is in manual mode or if no NTP server was reached, the card initializes at 01/01/1970

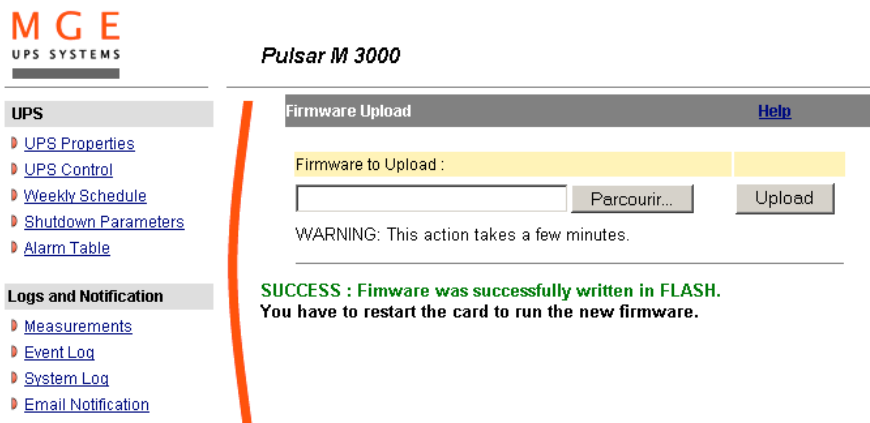
4.4.7 Firmware upload

Click on "**Firmware Upload**" in the menu.

This menu enables a new firmware version to be uploaded



To upload a new version of the card's firmware, select the file to be loaded using the "Browse..." button and click Upload. Do not interrupt the operation before the card displays the following screen:



4.5 Environment Sensor (option)

The environment sensor (66846) is an option that enables temperature and humidity to be measured, and indication of the position of two external contacts. It is connected with a standard network cable to the **Card Settings** port of the Network Management Card.

The card automatically detects sensor presence. The main menu then displays an additional section "**Environment**" with the following elements:

- ▶ **Status**
- ▶ **Configuration**
- ▶ **Log**

Important note: To switch the serial port to the configuration mode, just disconnect the cable and [reset the card](#).

4.5.1 Characteristics

- ▶ Temperature measurement from 0 to 70 °C with +/- 1°C accuracy
- ▶ Measurement of humidity from 0 to 100% with +/- 6% accuracy
- ▶ Min / max time-stamped function for temperature and humidity
- ▶ Choice of temperature readings in Celsius or Fahrenheit
- ▶ High and low thresholds, hysteresis and offset adjustable via Web interface
- ▶ Possibility of notification of status changes by e-mail, SMS or SNMP trap
- ▶ Position detection of 2 dry contacts (maximum sensor/contact distance: 20 m)
- ▶ Name and status of each configurable contact
- ▶ Recording of events and measurements in the card log
- ▶ Possibility of shutting down the installation safely if one of the thresholds is exceeded or dry contact status change
- ▶ Connection to the Network Management Card by CAT5 straight RJ45 network cables (maximum card/sensor distance: 20 m)

4.5.2 Environment Status

The screenshot shows the 'Environment Status' page for a Pulsar M 3000 UPS. On the left is a navigation menu with categories: UPS, Logs and Notification, Settings, and Environment. The main content area is titled 'Environment Status' and includes a 'Help' link. It features two gauge sections: 'Temperature' and 'Humidity'. Each gauge shows a current value (22.6 °C and 23.0 % respectively), a scale from 0 to 70 °C or 0 to 100 %, and a graduated bar with red zones at the ends. Below each gauge are 'Reset Min/Max' and 'Calibrate' buttons, and a link to 'Configure thresholds on Environment Settings'. The 'Temperature' section also shows 'Min: 18.9 recorded on 2006/03/15 04:24:32' and 'Max: 29.5 recorded on 2006/03/14 16:45:37'. The 'Humidity' section shows 'Min: 18.4 % recorded on 2006/03/14 16:49:17' and 'Max: 90.2 % recorded on 2006/03/14 16:45:37'. At the bottom, 'Input #1' and 'Input #2' sections show the last status change time and whether the input is open.

For both measurements, a graduated gauge proposes the following functions:

The cursor indicates the current value.

Two red zones to the left and right represent the high and low thresholds that can be set on the **Environment Settings** page.

When the measured value enters one of these zones, an alarm can be notified (see **Notification** parameter in the **Environment Settings** page).

Time-stamped minimum and maximum temperatures show the extreme values recorded since the last **Reset Min/Max**, a thin dotted line shows their positions on the gauge.

Min and Max can be forced at any time to the current value by clicking on the **Reset Min/Max** button.

Calibrate: The sensor is factory-calibrated, but the user can apply an offset to adjust the measurement.

Input #1 and **Input #2** show the position of the two contacts acquired by the sensor.

The position is displayed with the parameters entered in the **Environment Settings** page.

The last status change of each contact is time-stamped.

The Internet browser updates this page every 10 seconds

4.5.3 Environment Settings



Pulsar M 3000

- UPS
 - UPS Properties
 - UPS Control
 - Weekly Schedule
 - Shutdown Parameters
 - Alarm Table
- Logs and Notification
 - Measurements
 - Event Log
 - System Log
 - Email Notification
- Settings
 - Network
 - System
 - Notified Applications
 - Access Control
 - Time
 - Firmware Upload
- Environment
 - Status
 - Settings
 - Log

[Help](#)

	Sensor name:	Notification	System Shutdown
Temperature	High threshold: <input style="width: 40px;" type="text" value="24"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">°C ▾</div> <div>Low threshold: <input style="width: 40px;" type="text" value="5"/></div> </div>	<input type="checkbox"/>	<input type="checkbox"/>
	Hysteresis: <input style="width: 40px;" type="text" value="2"/>		
Humidity	High threshold: <input style="width: 40px;" type="text" value="90"/> %	<input type="checkbox"/>	<input type="checkbox"/>
	Low threshold: <input style="width: 40px;" type="text" value="5"/> %	<input type="checkbox"/>	<input type="checkbox"/>
	Hysteresis: <input style="width: 40px;" type="text" value="5"/> %		
Input #1:	<input style="width: 60px;" type="text" value="Input #1"/> <input style="width: 60px;" type="text" value="closed"/> when closed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input style="width: 60px;" type="text" value="open"/> when open	<input type="checkbox"/>	<input type="checkbox"/>
Input #2:	<input style="width: 60px;" type="text" value="Input #2"/> <input style="width: 60px;" type="text" value="closed"/> when closed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input style="width: 60px;" type="text" value="open"/> when open	<input type="checkbox"/>	<input type="checkbox"/>

Show advanced parameters

Save modified settings :

Export settings to file :

Import settings from file :

The environment sensor measures temperature, humidity and gives the status of the 2 contacts (used for door, alarms or generator unit). The temperature and humidity thresholds can be adjusted and can trigger notification and correct shutdown of the protected system.

The **Sensor name** is the function name given to the sensor, usually it enables location of the sensor.

Temperature: Choose the temperature unit (°C or °F) from the selection box.

High threshold: if this value is exceeded, a **notification** if enabled. The default value is 40 °C / 104 °F.

Low threshold: If this value is exceeded, a **notification** if enabled. The default value is 5 °C / 41 °F.

Hysteresis must be set to prevent multiple notifications if temperature fluctuates around a threshold.

The default value is 2 °C / -3.6 °F.

The high alarm disappears when the value drops below the **High threshold - Hysteresis value**

The low alarm disappears when the value returns above the **Low threshold - Hysteresis value**

Humidity

High threshold: If this value is exceeded, a **notification** is sent if this is validated. The default value is 90%.

Low threshold: If this value is exceeded, a **notification** is sent if this is validated. The default value is 5%.

Hysteresis must be set to prevent multiple notifications if humidity fluctuates around a threshold. The default value is 5%.

The high alarm disappears when the value drops below the **High threshold - Hysteresis value**

The low alarm disappears when the value returns above the **Low threshold - Hysteresis value**

Input #1 and **Input #2:** Enter an identifier corresponding to the acquired contact (e.g.: rack door, air conditioning, generator unit, etc.). Max. length is 28 characters.

when closed and **when open:** are the names associated to the two contact positions. (e.g.: "open" and "closed" for a door, "On" and "Off" for a generator).

Each status change triggers a **notification** if enabled.

When the Notification box is enabled, the following functions are activated for each event selected:

- display in the [list of current alarms](#)
- Consideration in the [UPS log](#)
- SNMP trap generation
- notification by e-mail (if the Environment sensor notification option is enabled in the [e-mail notification](#) page)

The list of messages is given in the [appendix](#)

System shutdown can be triggered for each notification if this option is enabled. If notification is disabled, the Shutdown option cannot be used.

Export settings to file: Enables exportation ("Download" button) and saving of card configuration information.

Import settings from file: Enables selection of a configuration file ("Browse" button) and uploading ("Upload" button) of card configuration information.

Security: The user must be identified to access this page.

4.5.4 Log

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Environment Log Data [Help](#)

Save Log Clear Log

Date	Time	Temperature (°C)	Humidity (%)
2006/03/15	15:05:41	22	22
2006/03/15	15:01:01	22	22
2006/03/15	14:55:04	23	23
2006/03/15	14:49:43	23	22
2006/03/15	14:44:25	23	22
2006/03/15	14:39:04	23	22
2006/03/15	14:33:40	23	22
2006/03/15	14:28:16	23	21
2006/03/15	14:22:54	23	22
2006/03/15	14:17:31	23	21
2006/03/15	14:12:09	23	22
2006/03/15	14:06:50	23	21
2006/03/15	14:01:31	23	22
2006/03/15	13:56:12	23	23
2006/03/15	13:50:53	23	24
2006/03/15	13:45:34	23	23

UPS

- UPS Properties
- UPS Control
- Weekly Schedule
- Shutdown Parameters
- Alarm Table

Logs and Notification

- Measurements
- Event Log
- System Log
- Email Notification

Settings

- Network
- System
- Notified Applications
- Access Control
- Time
- Firmware Upload

The two environment sensor measurements: Temperature and Humidity are recorded at an interval defined by the **Environment log interval** in the [System settings](#) page.

By default, this period is 300 seconds.

Each measurement is dated and stored in the log of the UPS's communication card.

The size of log files is limited by a time indexing system.

The user can **Save** the log on his/her workstation at any time, in a CSV format file.

The user can also **Clear** the files contained in the card to reset the log.

5 Server protection

5.1 Set-up of the shutdown parameters

The Network Shutdown Module, on protected server boot, subscribes itself automatically to [notified applications](#) list and sends its essential data:

- **IP Address or hostname of the server on which it is installed:** So that the card can inform it of power events.
- Time required to shutdown the server (Shutdown Duration, configurable in the "Set-up" menu of each NSM): The card takes into account the longest shutdown time of all the Network Shutdown Modules subscribed (This is the Shutdown duration of the [Shutdown parameters](#) page to manage UPS shutdowns without affecting any of Shutdown Modules connected).

During normal operation, the Network Shutdown Module periodically checks its connection with the card.

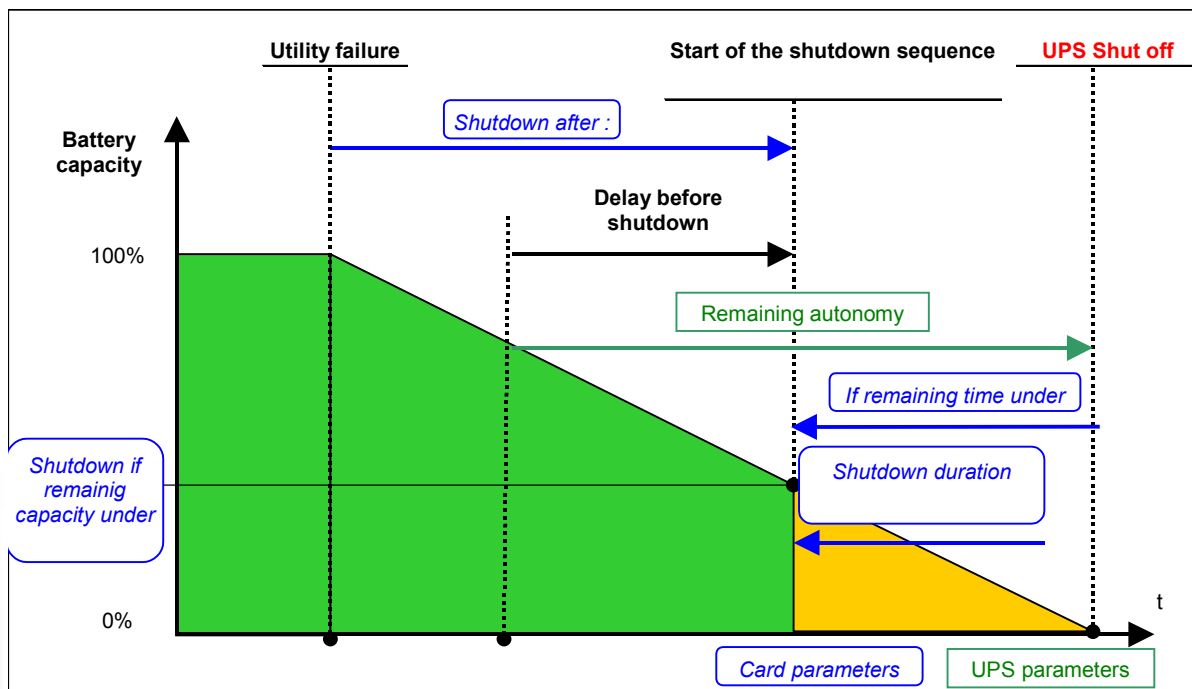
In case of a major power event, the card sends information to the Network Shutdown Module which reacts according to the situation. (shutdown order, programmed actions, messages to the administrator and to users via the network)

When the server shuts down, the Network Shutdown Module unsubscribes itself from the [notified applications](#).

5.1.1 Shutdown criteria managed by the Network Management Card

During an extended power failure, three criteria may cause the server shutdown procedure to be initiated. If several criteria are selected, (See page [Shutdown parameters](#)), the first criterion encountered will launch the shutdown procedure.

At the end of the shutdown procedure, when all servers have been shut down, the UPS may shut down to avoid unnecessary discharge of its batteries, depending on its configuration.



5.1.1.1 Backup time before initiating the shutdown procedure (Shutdown After - Shutdown Timer)

When the UPS switches to battery, the **Network Management Card** starts the Shutdown Timer countdown and launches the system shutdown procedure at the end of the countdown.

This value must be chosen so that users have time to complete their tasks and disconnect, without exceeding battery backup time.

Note 1:

The Network Shutdown Module can also manage its own Shutdown Timer (configurable in the Shutdown Module "set-up" menu of each Network Shutdown Module) launched when the UPS switches to battery.

Note that if this criterion is selected to initiate system shutdown, automatic system reboot when power is restored is not guaranteed (e.g. power restoration if only this system was shut down).

5.1.1.2 Initiating the shutdown procedure when the battery level is lower than: (If Capacity under)

When the card detects that the remaining backup time percentage is less than the configured level, the shutdown sequence is started. By default, this value is set at 20%.

Note:

The UPS already manages an equivalent parameter for the end of backup pre-alarm.

The card does not accept values less than that programmed in the UPS.

Check the UPS documentation.

5.1.1.3 Shutdown when backup time is less than

When the Network Management Card detects that the percentage of backup time remaining is less than the value set, the shutdown sequence is started.

5.1.1.4 Shutdown duration

Duration (in seconds) required for the system protected by the Shutdown Modules to shut down.

The Network Shutdown Modules transmit their own "Shutdown duration" to the Network Management Card.

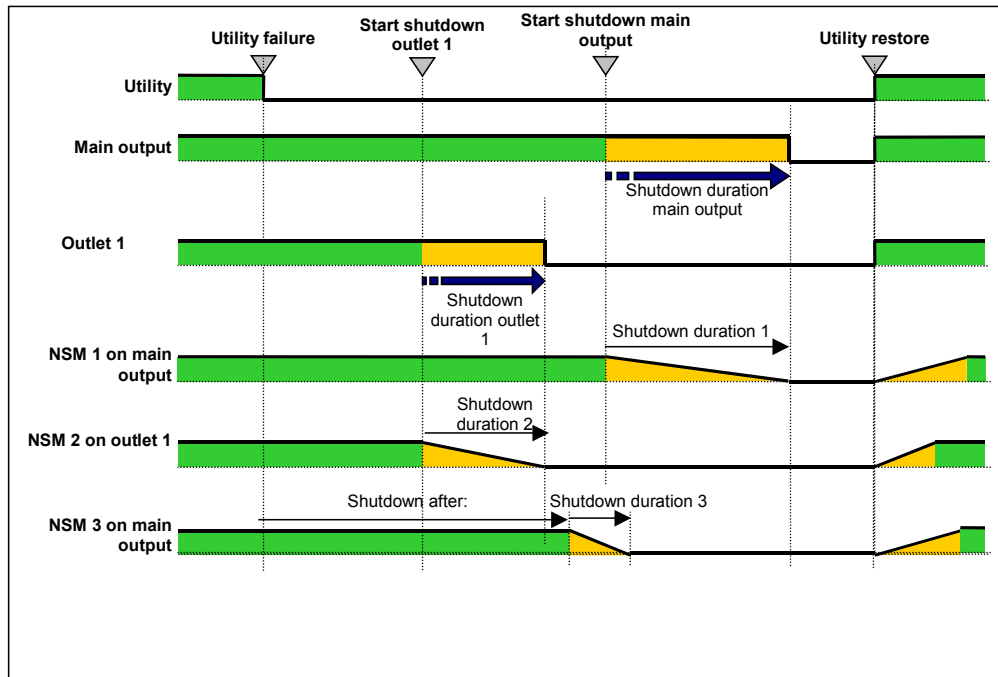
Based on these values (maximum Shutdown duration of all subscribed customer systems) that the card will send to the delayed shutdown order to the UPS.

5.1.2 Controlled outlets

Certain UPS models are equipped with controlled outlets (generally 2) which are always dependant on the UPS's main outlet. Shutdown of the main outlet systematically causes shutdown of the programmable outlets.

The following notations are used to identify these outlets:

- ▶ **Main outlet:** Main
- ▶ **Controlled outlet 1** 1
- ▶ **Controlled outlet 2** 2



5.1.3 Protection of a server connected to a controlled outlet

Network Shutdown Modules (NSM) starting with version 3.0 are compatible with the controlled outlets.

After connecting the server electrically to one of the controlled outlets, the NSM must be informed of the outlet number to which it is connected.

Refer to the documentation of the NSM available on the internet site www.mgeups.com section "[Download area – embedded Software](#)."

5.1.3.1 Load shedding or sequential shutdown

It is possible to optimise backup time by shutting down non-priority equipment or sequencing the shutdown of several devices.

Two shutdown criteria are possible:

- ▶ Shutdown of outlets after a set battery back-up time (After)
- ▶ Shutdown of outlets at a given battery discharge level (if battery capacity under)

It is possible to specify values for both criteria. The first criterion reached will initiate server shutdown.

5.1.3.2 Sequential startup

It is possible to delay outlet power-on to reduce inrush currents on startup or to sequence the startup of several devices.

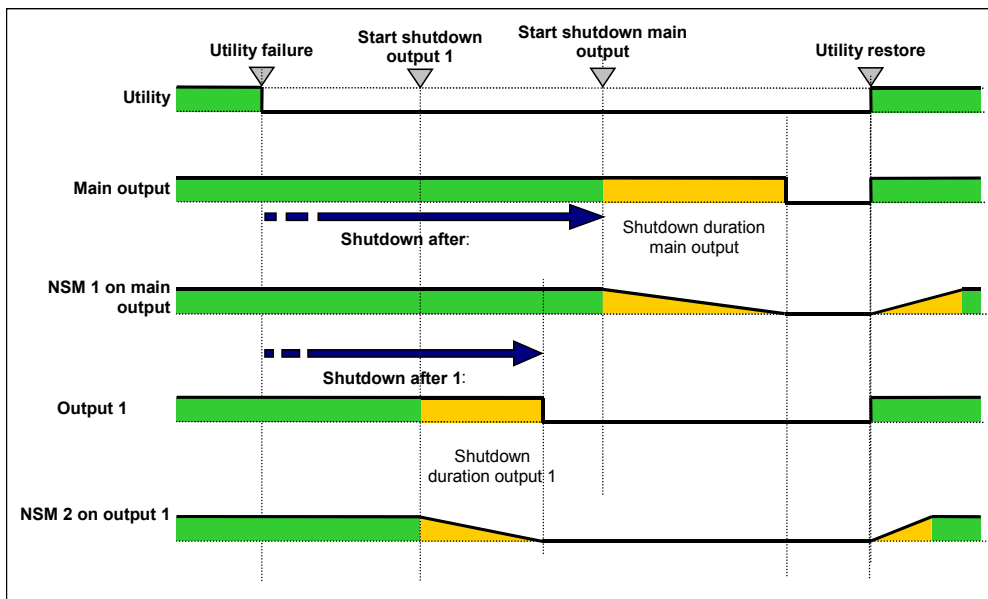
Controlled outlet startup after a given time is based on startup of the main outlet.

5.2 The different server and UPS shutdown sequences

5.2.1 Extended power outage, shutdown initiated by the Shutdown Timer (Shutdown after)

During battery backup time, the **Shutdown Timer of the Network Management Card** is reached: After a user-defined backup time period ([Shutdown parameters](#) page), the shutdown of all servers is initiated, followed by the UPS shutdown (depending on its configuration). The UPS restarts when utility power is restored (depending on its configuration)

Shutdown duration: Maximum value of shutdown times of the Network Shutdown Modules subscribed to the card. This value is updated each time a client subscribes/ unsubscribes.

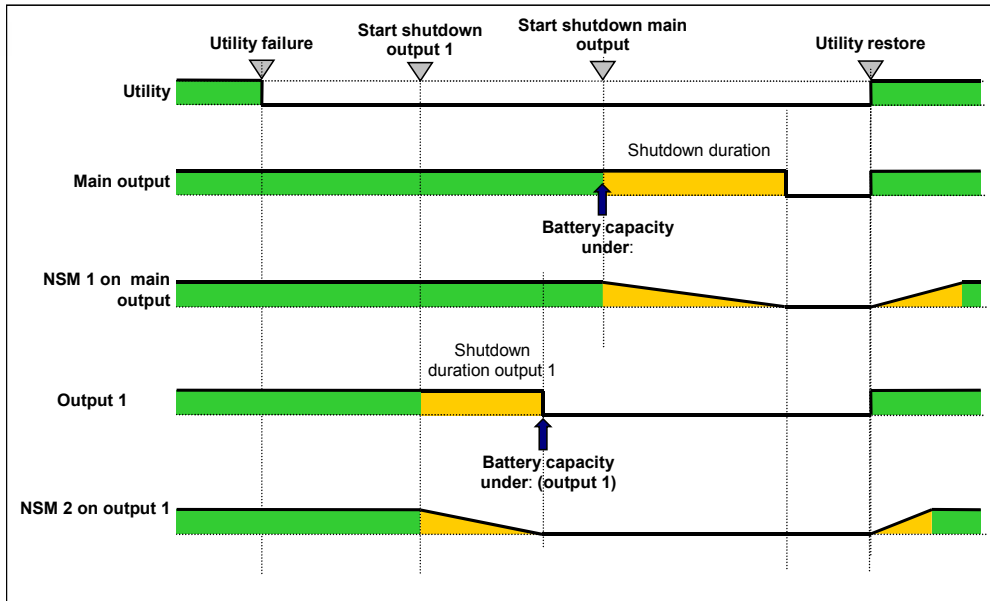


5.2.2 Extended power outage, shutdown initiated by the "Low battery power" message

When the "Low battery power" criterion is displayed, the UPS is shut off after taking into account the shutdown duration of the servers.

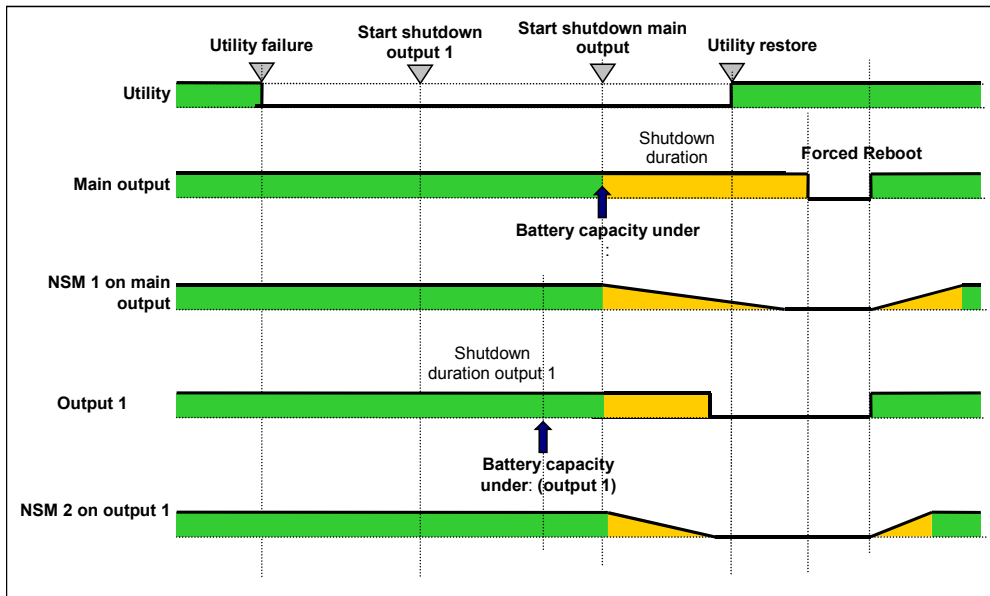
"Low battery power": The message appears if either of the two following criteria is checked:

- Low Battery Level
- Low Battery Delay



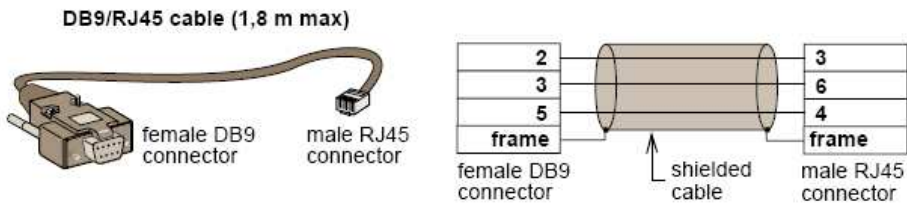
5.2.3 Case of power restoration before the end of the "shutdown duration" counter

If power is restored before the end of the Shutdown Duration, the UPS is shut off after the Shutdown Duration for a time equal to the forced reboot delay (10 seconds)



6 Configuration via RS232

- Use the cord supplied with the card.



- Connect the card to a computer equipped with a hyperterminal type emulator. The serial link must be set at 9600 baud, 8 bits, no parity, 1 stop bit, and without flow control.
- Check that UPS power is on.
- Enter the **MGEUPS** or **mgeups** password (non modifiable).
- The menu is in English only.

MGE UPS SYSTEMS
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- 1 : Reset
- 2 : Network configuration
- 3 : Set Login Password to Default
- 4 : Return to Default Configuration
- 5 : Exit

6.1 Choice 1: Restart / Reset

Use this function to restart the card; two choices are possible

- 1 : Hardware Reset: Equivalent to a restart of the electrical power supply.
- 2 : Restart application: Restarts only the application part.

Reset

- 1 : Hardware Reset
 - 2 : Restart application
 - 3 : Exit
-

6.2 Choice 2: Network Configuration

Use this function to access network settings.

```
-----
Network settings
-----
```

```
1 : Read Network settings
2 : Modify Network settings
3 : Exit
-----
```

6.2.1 Choice 1: Read Network settings

Enables reading of the card's routine settings

```
-----
Network configuration :
Mode : DHCP
IP address : 172.17.21.209
Subnet mask : 255.255.248.0
Gateway : 172.17.17.1
-----
```

6.2.2 Choice 2: Modify Network settings

Enables the modification of network parameters

```
-----
For each of the following questions, you can press <Return> to select the value
shown in braces, or you can enter a new value.
-----
```

```
Should this target obtain IP settings from the network?[N]
Static IP address [172.17.21.146]?
Subnet Mask IP address [255.255.248.0]?
Gateway address IP address [172.17.17.1]?
-----
```

In DHCP mode, the card can receive the following parameters according to the DHCP server settings

- IP address
- Subnet Mask
- Gateway address
- Primary DNS server
- Secondary DNS server

The card must be [restarted](#) in order for the new parameters to be taken into account.

6.3 Choice 3: Lost password / Set Login Password to Default

In the even the login or password is lost, choice 3 enables the return to the default password:

```
-----
MGE UPS SYSTEMS
```

```
NETWORK MANAGEMENT CARD
-----
```

```
1 : Reset
2 : Network configuration
3 : Set Login Password to Default
```

- 4 : Return to Default Configuration
- 5 : Exit
- 7 : Exit

Wait for the confirmation message.

```
-----  
Login Password are succesfully been set.  
-----
```

The card is now accessible via the Web with the password MGEUPS.

Enables the return to the new default password: MGEUPS

6.4 Choice 4: Return to Default Configuration

MGE UPS SYSTEMS
NETWORK MANAGEMENT CARD

- 1 : Reset
- 2 : Network configuration
- 3 : Set Login Password to Default
- 4 : Return to Default Configuration
- 5 : Exit
- 7 : Exit

enables restoration of the [default configuration](#) of all the card's parameters

```
-----  
Configuration has been set to default one.  
You must Reset the card.  
-----
```

7 Appendices

7.1 Tables of alarms and events

7.1.1 Table of alarms

List of time dated alarms

Alarm on

Battery fuse blown
 Battery temperature fault
 Battery charger fault
 Charger temperature fault
 End of Warranty
 Contact MGE <http://www.mgeups.com/lcm>
 End of battery life
 Contactor MGE <http://www.mgeups.com/lcm>
 End of life of the wearing parts
 Contactor MGE <http://www.mgeups.com/lcm>
 Chopper fault
 Normal AC frequency out of tolerance
 Normal AC fuses blown
 Normal AC module fault
 Normal AC voltage out of tolerance
 Bypass AC frequency out of tolerance
 Automatic Bypass fault
 Automatic Bypass overload
 Automatic Bypass overtemperature
 Bypass AC phase out of tolerance
 Automatic Bypass thermal overload
 Load not protected - On Automatic Bypass
 Bypass AC voltage out of tolerance
 Load not protected - On Manual Bypass
 Inverter limitation
 Inverter fuses blown
 Inverter fault
 Inverter overload
 Inverter overtemperature
 Inverter thermal overload
 Load short circuit
 Normal AC NOK
 Low battery
 UPS communication failed
 UPS data base not available
 UPS on battery

Alarm off

Battery fuse OK
 Battery temperature OK
 Battery charger OK
 Charger temperature OK
 LCM message OK

 LCM message OK

 LCM message OK

 Chopper OK
 Normal AC frequency OK
 Normal AC fuses OK
 Normal AC module OK
 Normal AC voltage OK
 Bypass AC frequency OK
 Automatic Bypass OK
 Automatic Bypass load OK
 Automatic Bypass temperature OK
 Bypass AC phase OK
 Automatic Bypass load OK
 Load protected - Return from Bypass
 Bypass AC voltage OK

 Inverter end of limitation
 Input fuses OK
 Inverter OK
 Inverter load OK
 Inverter temperature OK
 Inverter load OK
 Load OK
 Normal AC OK
 Battery OK
 UPS communication restored
 UPS data base OK
 UPS on normal AC

Load not powered	Load powered
UPS internal fault	UPS OK
Battery fault	Battery OK
UPS overload	UPS returns to normal load
UPS overtemperature	UPS temperature OK
Imminent UPS shutoff	UPS OK
<Sensor name>: Temperature is above high threshold xx °C	<Sensor name>: La température est au dessus du seuil haut xx °C
<Sensor name>: Humidity is above high threshold xx %	<Sensor name>: L'humidité est au dessus du seuil haut xx %
<Sensor name>: Temperature is below low threshold xx °C	<Sensor name>: La température est en dessous du seuil bas xx °C
<Sensor name>: Humidity is below low threshold xx %	<Sensor name>: L'humidité est en dessous du seuil bas xx %
<Sensor name>: <Input #1 label> <when closed label>	<Sensor name>: <Input #1 label> <when closed label>
<Sensor name>: <Input #1 label> <when open label>	<Sensor name>: <Input #1 label> <when open label>
<Sensor name>: <Input #2 label> <when closed label>	<Sensor name>: <Input #2 label> <when closed label>
<Sensor name>: <Input #2 label> <when open label>	<Sensor name>: <Input #2 label> <when open label>

7.1.2 Table of UPS events

List of time dated informations

Alarm on

- Battery fuse blown
- Battery temperature fault
- Battery charger fault
- Charger temperature fault
- End of Warranty
- End of battery life
- End of life of the wearing parts
- Outlet 1 open
- Outlet 2 open
- Chopper fault
- Normal AC switch (Q1) open
- Normal AC frequency out of tolerance
- Normal AC fuses blown
- Normal AC module fault
- Normal AC voltage out of tolerance
- Automatic Bypass switch (Q4S) open
- Bypass AC frequency out of tolerance
- Automatic Bypass fault
- Automatic Bypass overload
- Automatic Bypass overtemperature
- Bypass AC phase out of tolerance
- Automatic Bypass thermal overload
- Load not protected - On Automatic Bypass
- Bypass AC voltage out of tolerance

Alarm off

- Battery fuse OK
- Battery temperature OK
- Battery charger OK
- Charger temperature OK
- LCM message OK
- LCM message OK
- LCM message OK
- Outlet 1 closed
- Outlet 2 closed
- Chopper OK
- Normal AC switch (Q1) closed
- Normal AC frequency OK
- Normal AC fuses OK
- Normal AC module OK
- Normal AC voltage OK
- Automatic Bypass switch (Q4S) closed
- Bypass AC frequency OK
- Automatic Bypass OK
- Automatic Bypass load OK
- Automatic Bypass temperature OK
- Bypass AC phase OK
- Automatic Bypass load OK
- Load protected - Return from Bypass
- Bypass AC voltage OK

Battery switch (QF1) open	Battery switch (QF1) closed
Manual Bypass switch (Q3BP) closed	Manual Bypass switch (Q3BP) open
Load not protected - On Manual Bypass	
Inverter limitation	Inverter end of limitation
Inverter fuses blown	Input fuses OK
Inverter fault	Inverter OK
Inverter overload	Inverter load OK
Inverter overtemperature	Inverter temperature OK
Inverter thermal overload	Inverter load OK
Output switch (Q5N) open	Output switch (Q5N) closed
Load short circuit	Load OK
Normal AC NOK	Normal AC OK
Low battery	Battery OK
UPS communication failed	UPS communication restored
UPS data base not available	UPS data base OK
UPS on battery	UPS on normal AC
Load not powered	Load powered
UPS internal fault	UPS OK
Battery fault	Battery OK
UPS overload	UPS returns to normal load
UPS overtemperature	UPS temperature OK
Imminent UPS shutoff	UPS OK
< Sensor Name> : Temperature is above high threshold <xx> (°C) or (°F)	<Sensor Name> : Temperature is in normal range
< Sensor Name> : Humidity is above high threshold <xx> (%)	<Sensor Name> : Temperature is in normal range
< Sensor Name> : Temperature is below low threshold <xx> °C or (°F)	<Sensor Name> : Temperature is in normal range
< Sensor Name> : Humidity is below high threshold <xx> (%)	<Sensor Name> : Temperature is in normal range
<Sensor name>: <Input #1 label> <when closed label>	
<Sensor name>: <Input #1 label> <when open label>	
<Sensor name>: <Input #2 label> <when closed label>	
<Sensor name>: <Input #2 label> <when open label>	

7.1.3 Table of system alarms

Network Management Card startup
Send test mail SUCCESS
Send test mail ERROR
Send mail to <recipient> ERROR
<Sensor name> Communication failure
<Sensor name> Communication restored
Firmware upgraded

7.2 SNMP objects

7.2.1 MGE MIB

The NMC card implement reduce MGEUPS MIB, with the objects bellow managed.

The entire MIB description is available on www.mgeups.com area "[Download area – embedded Softwares](#)."

Le chemin d'accès à la MIB MGEUPS est **1.3.6.1.4.1.705.1**.

MIB object	SNMP Format	Add.path
upsmgIdentFamilyName	String	{1,1,0}
upsmgIdentModelName	String	{1,2,0}
upsmgIdentSerialNumber	String	{1,7,0}
upsmgIdentFirmwareVersion	String	{1,4,0}
upsmgConfigLowBatteryTime	seconds	{4,7,0}
upsmgConfigLowBatteryLevel	%	{4,8,0}
upsmgConfigAutoRestart	1(yes) 2(no)	{4,9,0}
upsmgConfigVARating	VA	{4,12,0}
upsmgBatteryRemainingTime	seconds	{5,1,0}
upsmgBatteryLevel	%	{5,2,0}
upsmgBatteryVoltage	deciVolts	{5,5,0}
upsmgBatteryCurrent	deciAmps	{5,6,0}
upsmgBatteryFaultBattery	1(yes) 2(no)	{5,9,0}
upsmgBatteryReplacement	1(yes) 2(no)	{5,11,0}
upsmgBatteryLowBattery	1(yes) 2(no)	{5,14,0}
upsmgBatteryChargerFault	1(yes) 2(no)	{5,15,0}
upsmgBatteryLowCondition	1(yes) 2(no)	{5,16,0}
upsmgInputPhaseNum		{6,1,0}
mginputIndex_1		{6,2,1,1,1,0}
mginputIndex_2		{6,2,1,1,2,0}
mginputIndex_3		{6,2,1,1,3,0}
mginputVoltage_1	DeciVolts	{6,2,1,2,1,0}
mginputVoltage_2	DeciVolts	{6,2,1,2,2,0}
mginputVoltage_3	DeciVolts	{6,2,1,2,3,0}
mginputFrequency_1	DeciHz	{6,2,1,3,1,0}
mginputFrequency_2	DeciHz	{6,2,1,3,2,0}
mginputFrequency_3	DeciHz	{6,2,1,3,3,0}
mginputCurrent_1	DeciAmps	{6,2,1,6,1,0}
mginputCurrent_2	DeciAmps	{6,2,1,6,2,0}
mginputCurrent_3	DeciAmps	{6,2,1,6,3,0}
upsmgInputBadStatus		{6,3,0}
upsmgOutputPhaseNum		{7,1,0}
mgoutputPhaseIndex_1		{7,2,1,1,1,0}
mgoutputPhaseIndex_2		{7,2,1,1,2,0}
mgoutputPhaseIndex_3		{7,2,1,1,3,0}
mgoutputVoltage_1	deciVolts	{7,2,1,2,1,0}

mgoutputVoltage_2	deciVolts	{7,2,1,2,2,0}
mgoutputVoltage_3	deciVolts	{7,2,1,2,3,0}
mgoutputFrequency_1	deciHz	{7,2,1,3,1,0}
mgoutputFrequency_2	deciHz	{7,2,1,3,2,0}
mgoutputFrequency_3	deciHz	{7,2,1,3,3,0}
mgoutputLoadPerPhase_1	%	{7,2,1,4,1,0}
mgoutputLoadPerPhase_2	%	{7,2,1,4,2,0}
mgoutputLoadPerPhase_3	%	{7,2,1,4,3,0}
mgoutputCurrent_1	deciAmps	{7,2,1,5,1,0}
mgoutputCurrent_2	deciAmps	{7,2,1,5,2,0}
mgoutputCurrent_3	deciAmps	{7,2,1,5,3,0}
upsmgOutputOnBattery	1(yes) 2(no)	{7,3,0}
upsmgOutputOnByPass	1(yes) 2(no)	{7,4,0}
upsmgOutputUtilityOff	1(yes) 2(no)	{7,7,0}
upsmgOutputOverLoad	1(yes) 2(no)	{7,10,0}
upsmgAgentIpAddress		{12,1,0}
upsmgAgentSubnetMask		{12,2,0}
upsmgAgentDefGateway		{12,3,0}
upsmgAgentType		{12,6,0}
upsmgAgentMibVersion		{12,11,0}
upsmgAgentFirmwareVersion		{12,12,0}
upsmgAgentCommUPS	1(yes) 2(no)	{12,13,0}

If the Environment Sensor is detected , the following information are managed.

upsmgEnvironAmbientTemp	0.1 degré	{8,1,0}
upsmgEnvironAmbientHumidity	0.1 %	{8,2,0}
upsmgEnvironmentNum		{8,6,0}
upsmgEnvironmentSensorTable		{8,7,0}
upsmgEnvironmentEntry		{8,7,1,0}
upsmgEnvironmentIndex		{8,7,1.1 }
upsmgEnvironmentComFailure	1(yes) 2(no)	{8,7,1.2}
upsmgEnvironmentTemperature	0.1 degré	{8,7,1.3}
upsmgEnvironmentTemperatureLow	1(yes) 2(no)	{8,7,1.4}
upsmgEnvironmentTemperatureHigh	1(yes) 2(no)	{8,7,1.5}
upsmgEnvironmentHumidity	0.1 %	{8,7,1.6}
upsmgEnvironmentHumidityLow	1(yes) 2(no)	{8,7,1.7}
upsmgEnvironmentHumidityHigh	1(yes) 2(no)	{8,7,1.8}
upsmgEnvironmentInput1State	closed(1), open(2)	{8,7,1.9}
upsmgEnvironmentInput2State	closed(1), open(2)	{8,7,1.10}

7.2.2 Table des TRAPS : (1.3.6.1.4.1.705.1.11)

SNMP traps are sent when alarms appears and desappears.

Level : 1:informational , 2:major, 3:critical

MIB TRAP	Trap #	niveau
-upsmgBatteryFault	Trap 1	Level 3
-upsmgBatteryOK	Trap 2	Level 1
-upsmgAtLowBattery	Trap 5	Level 3
-upsmgFromLowBattery	Trap 6	Level 1
-upsmgChargerFault	Trap 7	Level 3
-upsmgChargerOK	Trap 8	Level 1
-upsmgOnBattery	Trap 11	Level 2
-upsmgReturnFromBattery	Trap 12	Level 1
-upsmgOnByPass	Trap 13	Level 2
-upsmgReturnFromByPass	Trap 14	Level 1
-upsmgUtilityFailure	Trap 17	Level 2
-upsmgUtilityRestored	Trap 18	Level 1
-upsmgOverLoad	Trap 21	Level 3
-upsmgLoadOK	Trap 22	Level 1
-upsmgOverTemperature	Trap 23	Level 3
-upsmgTemperatureOK	Trap 24	Level 1
-upsmgOffToStart	Trap 29	Level 2
-upsmgOffInProgress	Trap 31	Level 3
-upsmgCommunicationFailure	Trap 37	Level 3
-upsmgCommunicationRestored	Trap 38	Level 1

If the Environment Sensor is detected , the following information are managed.:

- upsEnvironmentComFailure	Trap 53	Level 2
- upsEnvironmentComOK	Trap 54	Level 2
- upsEnvironmentTemperatureLow	Trap 55	Level 2
- upsEnvironmentTemperatureHigh	Trap 56	Level 2
- upsEnvironmentTemperatureOK	Trap 57	Level 2
- upsEnvironmentHumidityLow	Trap 58	Level 2
- upsEnvironmentHumidityHigh	Trap 59	Level 2
- upsEnvironmentHumidityOK	Trap 60	Level 2
- upsEnvironmentInput1Closed	Trap 61	Level 2
- upsEnvironmentInput1Open	Trap 62	Level 2
- upsEnvironmentInput2Open	Trap 64	Level 2
- upsEnvironmentInput2Closed	Trap 63	Level 2

The level is used to select traps to be sent to the supervisor. This adjustment is available from the "Notified applications" page

8 Glossary

Bootp:

Protocol based on UDP used to allocate an IP address corresponding to an Ethernet card during the startup phase. Defined by the RCF 951

Community name:

Access key to access SNMP agent information

DHCP Dynamic Host Configuration Protocol

This IETF protocol enables remote, automatic, self-configuration of the IP addresses of a workstation.

DNS Domain Name Sevice

The DNS protocol ensure correspondence between the name of a machine and its IP address

E-mail

Electronic means of transmitting messages and/or files.

Gateway

Interconnection equipment between networks with different conventions, to enable communication between them

HTML

(HyperText Markup Language) Language used to describe hypertext pages on the web.

HTTPS : is the secure version of HTTP, the communication protocol of the World Wide Web. It was invented by Netscape Communications Corporation to provide authentication and encrypted communication and is used in electronic commerce.

IP

Internet Protocol. Network layer protocol in the TCP/IP stack offering a no-connection inter-network service . The IP protocol offers functions for addressing, service type specification, fragmentation and re-assembling and security. Defined in RFC 791.

MIB MANAGEMENT INFORMATION BASE

- Group of software commands to control and administrate a device through the network. Each type of device (server, hub, PC, UPS, etc.) has its own MIB

NETWORK MANAGEMENT CARD

Communication cards to supervise UPS and communicate with Network Shutdown Module to insure power protection on servers

NETWORK MANAGEMENT PROXY

Communication software installed on a PC connected to the UPS to supervise it and communicate with Network Shutdown Module to insure power protection on servers

NMS NETWORK MANAGEMENT STATION (SNMP)

The dedicated PC or workstation is used on the company's networks to administrate all devices connected to the network. Data are transmitted using the SNMP protocol. Popular NMS systems include HP OpenView, IBM Tivoli, CA Unicenter, etc.

NSM : NETWORK SHUTDOWN MODULE

Protection software installed on a PC or server to protect it

NTP Network Time Protocol

Protocol to position a set of machines on a network at the same time.

Programmable outlet (controlled outlet):

Outlet that can be remote-switched on or off. UM-Client components enable management of such outlets.

REBOOT –

To restart a system after an interruption.

- To perform an obstacle-free “reboot”, it is essential that the system is correctly and carefully shut down beforehand.
- The reboot is usually automatic if the computer is re-supplied with electricity (from the utility or from the UPS).

RFC

Request for Comments. All documents defining internal Internet operation.

SNMP (SIMPLE NETWORK MANAGEMENT PROTOCOL)

Protocol used to remote-supervise, administrate and control devices connected to a company network.

SMTP (SIMPLE MAIL TRANSFER PROTOCOL)

Enables message transfer between e-mail servers or between the client and its server. It is based on the server's port 25. It is described in RFC 821

SSL (Secure Sockets Layers) is a protocol developed by Netscape Communications Corporation for securing data transmission in commercial transactions on the Internet. Using public-key cryptography, SSL provides server authentication, data encryption, and data integrity for client/server communications

Subnet mask:

Mask of bits used to identify and differentiate the network address and the equipment address in an IP address.

Normally, the mask is automatically determined by the class of address, which defines in a unique manner the network part/equipment part division of the IP address.

- Class A: internet address: 255.0.0.0.
- Class B: internet address: 255.255.0.0.
- Class C: internet address: 255.255.255.0.

TCP/IP

Transmission Control Protocol/Internet Protocol. Common name of a series of protocols developed by the DOD in the US to help build Internet networks throughout the world.

Telnet

Internet protocol used for terminal emulation, i.e. enabling a computer to connect with a server as if it was a simple terminal locally connected to this server.

Trap (SNMP)

This term describes an event that affects an MIB variable. Traps are sent to the manager, which is programmed to perform specific tasks upon reception of the

traps.