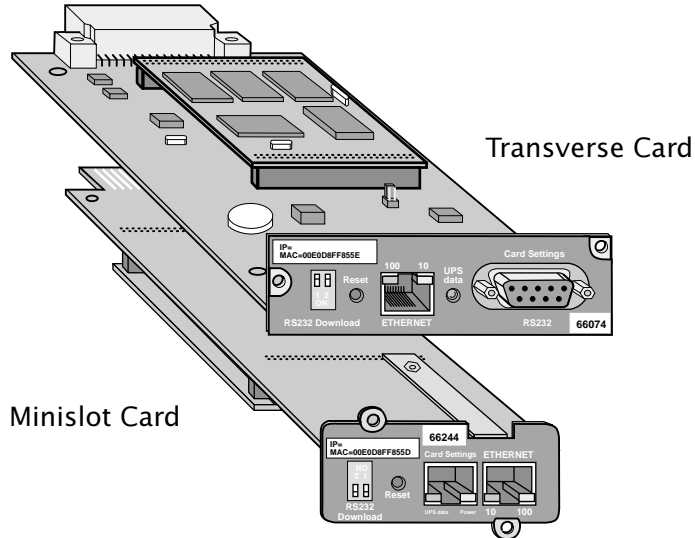
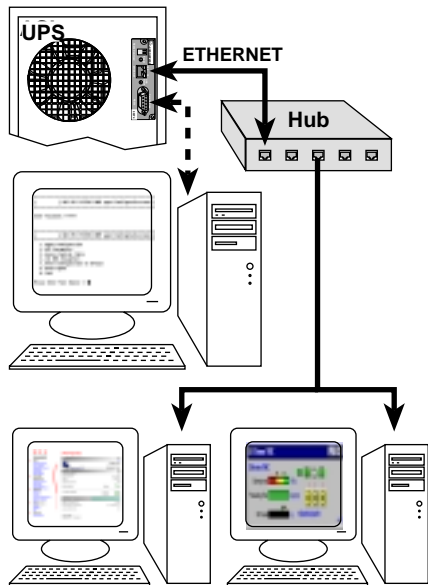
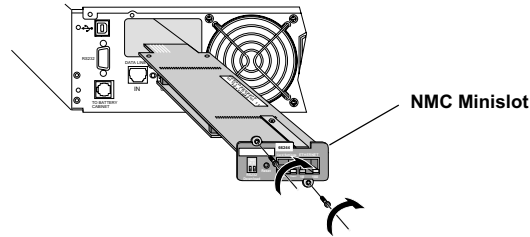
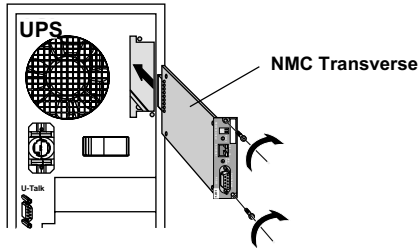


Network Management Card

Installation manual



Quick start



1. **Insert** and **screw** the communication card **NMC** inside the UPS slot. It is necessary to shut off the UPS.
2. **Configure** the network parameters:
 - ▶ If you have a **BOOTP/DHCP** server on your network, no manual settings are required. However, ask your network administrator to set the server parameters so that the IP address assigned to the card is in a range of fixed addresses.
 - ▶ If you do not have a BOOTP/DHCP server, the network parameters must be set **manually** via the **Card Settings** serial port. Contact your network administrator to obtain the setting values (sections 3.2 and 3.3).
3. **Connect** the Ethernet port to the network. Check 10 or 100 LED flashing.
4. **Read** IP address via the **Card Settings** serial port if you have a BOOTP/DHCP server on your network (sections 3.2 and 3.3).
5. To access the supervision and administration functions via your browser, enter **http://@IP/**
6. To access the supervision functions via your Network Management System (NMS), install, set up and run the selected application on the NMS station.
7. To access the other advanced configuration parameters, see the user manual available on the **Solution Pac 2** CD-ROM (go to Emb/index.htm) from GE release or on our Web-site at **www.mgeups.com** (Download area section).

Introduction

Thank you for selecting an MGE UPS SYSTEMS product to protect your electrical equipment.

The **Network Management Card** has been designed with the utmost care. We recommend that you take the time to read this manual to take full advantage of the many features of your new equipment.



We invite you to discover the entire MGE UPS SYSTEMS range of products and services by visiting our Web site at www.mgeups.com or by contacting your nearest sales representative.

Environment

MGE UPS SYSTEMS pays great attention to the environmental impact of its products during the design and manufacture stages, through to the end of its life cycle.

- ▶ This product complies with the most strict regulations.
- ▶ It does not contain CFCs or HCFCs.

Recycling of packing materials

Packing materials were selected to facilitate recycling. Please make sure they are correctly recycled in compliance with all applicable regulations.

Recycling of the product at the end of its life cycle

MGE UPS SYSTEMS undertakes to recycle all recovered products in installations, complying with applicable regulations. Please contact our sales office.



See the Environment section on our Web site at www.mgeups.com.

Special precautions

- ▶ If the card must be stored prior to installation, storage must be in a dry place.
- ▶ The admissible storage temperature range is -10° C to +70° C.

Foreword

EMC compatibility

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

- ▶ AT1 safety: **EN 60950/A11** (1998).
- ▶ EMC: **EN 61000-6-2** (1999), **EN 61000-6-3** (2002).

Conformity with European directives:

- ▶ Low voltage: **73/23/EEC** and **93/68/EEC**.
- ▶ EMC: **89/336/EEC** and **93/68/EEC**.

Federal Communication Commission (FCC) statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Pictograms used in this manual



Important operations.



Information, advice, help.



Visual indication.



Action.



Software screen accessed via the **Network Management Card**.

UPS Properties : Text in bold italics has been taken from the software.

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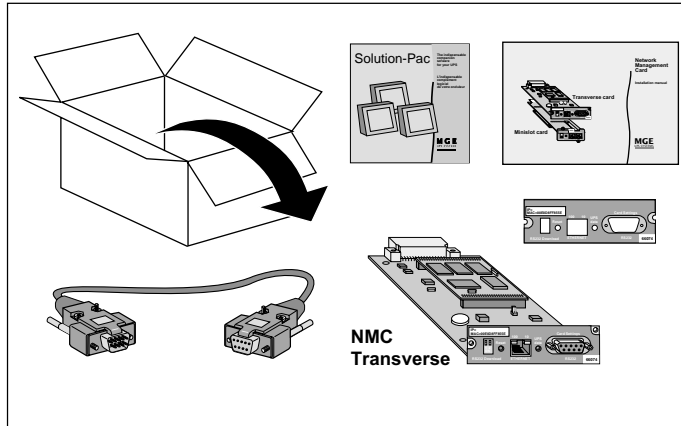
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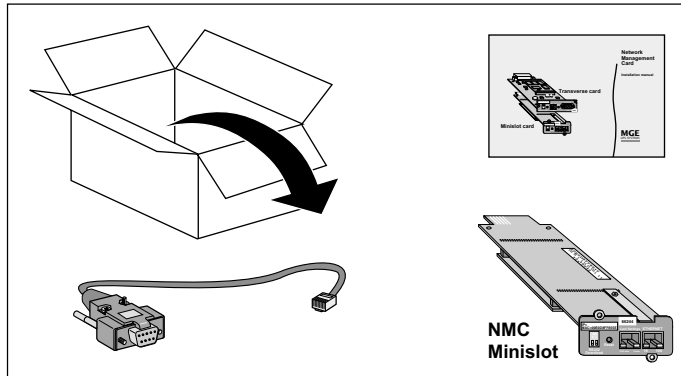
1. Presentation

1.1 Unpacking and check on contents



Network Management Card Transverse:

- ▶ An **NMC Transverse** communication card, with a standard front plate already installed.
- ▶ A front plate specially designed for **Galaxy PW** UPSs.
- ▶ A serial communication cable used for configuration and maintenance.
- ▶ Installation and user manual.
- ▶ The **Solution-Pac 2** CD-ROM.



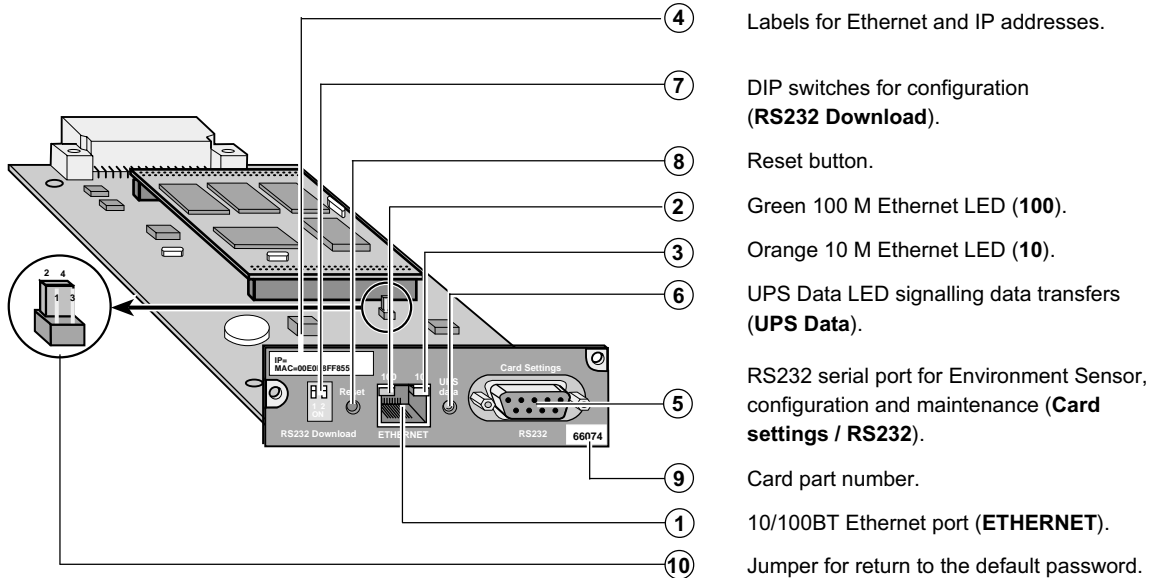
Network Management Card Minislot:

- ▶ An **NMC Minislot** communication card, with a standard front plate already installed.
- ▶ A serial communication cable used for configuration and maintenance.
- ▶ Installation and user manual.

1. Presentation

1.2 Overview

Network Management Card Transverse

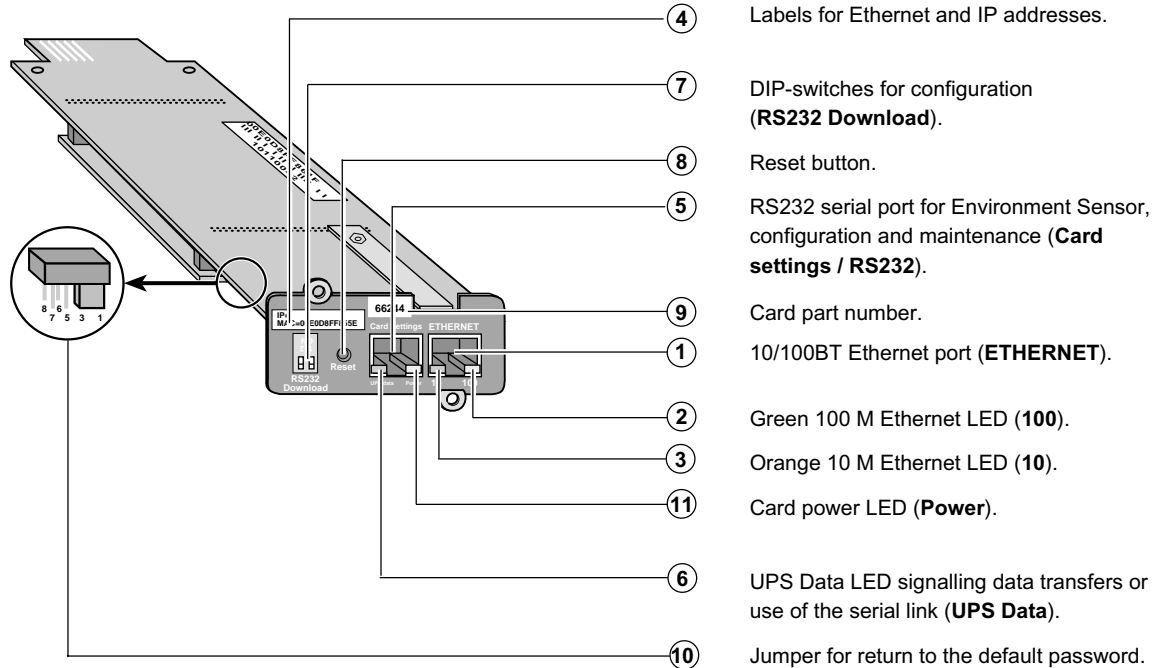


The address label ④ is made up of two areas:

- ▶ The upper line may be used to manually note the IP address assigned to the card.
- ▶ The lower line indicates the card Ethernet address (MAC address).

1. Presentation

Network Management Card Minislot

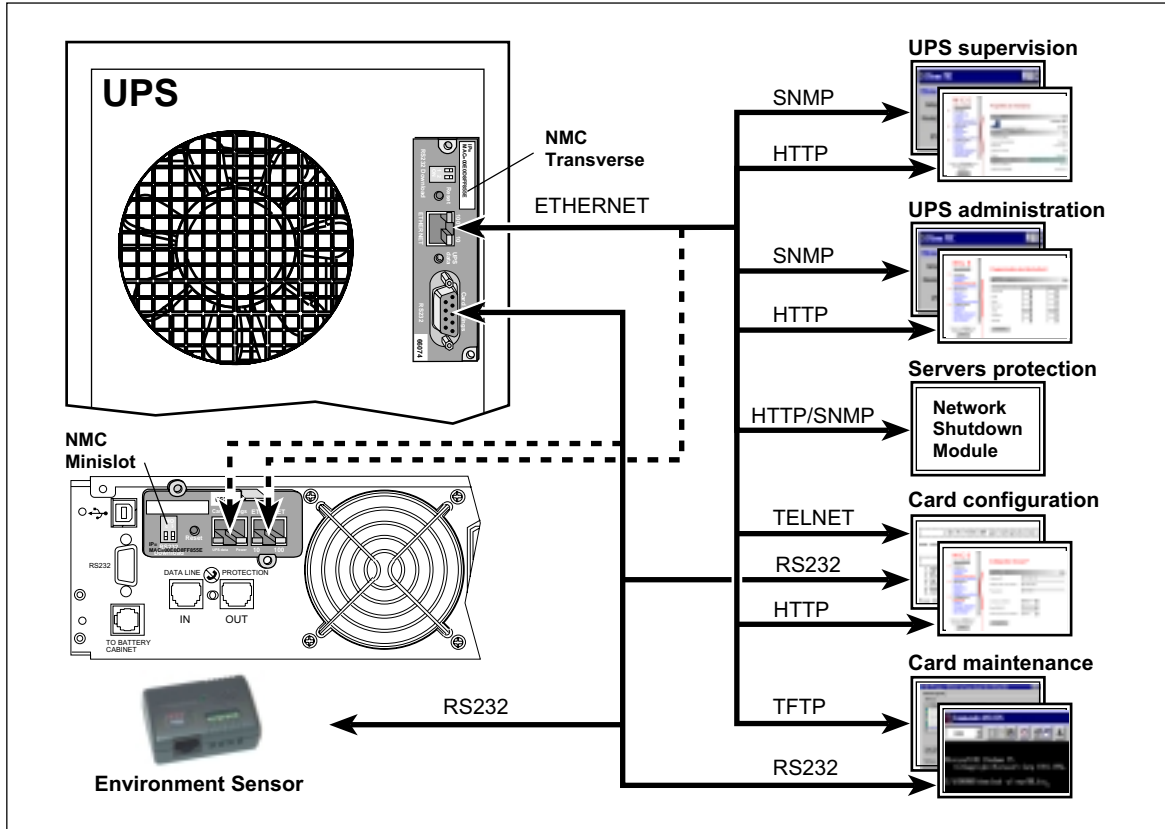


The address label (4) is made up of two areas:

- ▶ The upper area may be used to manually note the IP address assigned to the card.
- ▶ The lower area indicates the card Ethernet address (MAC address).

1. Presentation

1.3 Functions



1. Presentation

The **Network Management Card** is used to directly connect the **UPS** to a computer network, while simultaneously operating as a Web server and SNMP agent.

Remote connections are made using an ordinary internet browser or an NMS station.

All the functions offered by the **Network Management Card** are accessible via a number of MGE UPS SYSTEMS software applications, depending on the user's needs.

Functions	Mupgrade or Download	Web browser	Console		Supervision		Network Shutdown Module
			Direct	Telnet	EPM	Manag ^t -Pac	
Supervision UPS properties UPS log Event log Alarm subscription Direct email notification Environment parameters		yes yes yes yes yes yes			yes yes yes yes	yes yes	yes yes yes
Configuration - Administration Network parameters Community name Shutdown parameters Scheduled shutdown Management table Time		yes yes yes yes yes yes	yes yes	yes yes yes			yes yes
Maintenance Network cards discovery Firmware upgrade Reset agent Factory reset	yes (Mupgrade) yes	yes yes	yes yes	yes yes			
Servers/Workstations protection							yes

1. Presentation

1.4 Technical characteristics

Functions	Characteristics
Supervision	<ul style="list-style-type: none">▶ Simultaneous connection of up to 15 browsers.▶ Up to 500 events stored in memory with battery backup.▶ Automatic refresh of the Properties page.
Alarms	<ul style="list-style-type: none">▶ Alarm notification via Browser (applet), email and SNMP (trap).
Protection of client stations	<ul style="list-style-type: none">▶ Up to 50 protected stations.
Network	<ul style="list-style-type: none">▶ Fast ETHERNET 10/100 Mbits, auto-negotiation.▶ HTTP 1.1, SNMP V1, TELNET, TFTP, NTP, BOOTP, DHCP.▶ Simultaneous management of protocols.
Browsers	<ul style="list-style-type: none">▶ Microsoft Internet Explorer 5.x or higher.▶ Netscape Navigator 6.x or higher.
International	<ul style="list-style-type: none">▶ Web pages in English, French, German, Italian and Spanish.▶ Automatic detection of browser language.
NMS	<ul style="list-style-type: none">▶ Enterprise Power Manager (EPM).▶ Management-Pac 2.
MIB	<ul style="list-style-type: none">▶ Standard MIB II.▶ MGE V1.6 MIB.▶ IETF MIB.
Configuration	<ul style="list-style-type: none">▶ Access via a password.▶ Setting of parameters: IP, System, Date/time, Community name, etc.
Downloads	<ul style="list-style-type: none">▶ Single card or Multicard via the network using Mupgrade.▶ Single card via TFTP or an RS232 serial link.

1. Presentation

1.5 List of parameters and default values

Functions	Parameters	Default values	Possible values
Network	<ul style="list-style-type: none"> ▶ IP Address ▶ Subnet Mask ▶ Gateway Address ▶ Host ▶ Domain name ▶ Telnet Connection ▶ BOOTP/DHCP ▶ Network Upgrade ▶ Primary DNS Server ▶ Secondary DNS Server ▶ SMTP Server ▶ NTP Server 	<ul style="list-style-type: none"> ▶ 172.17.xx.yy (see section 3.1) ▶ 255.255.0.0 ▶ 0.0.0.0 ▶ UPS xxxx ▶ ups.domain.com ▶ Enable ▶ Enable ▶ Enable ▶ 0.0.0.0 ▶ 0.0.0.0 ▶ smtpserver.domain.com ▶ 0.0.0.0 	<ul style="list-style-type: none"> ▶ Network IP address ▶ Network IP address ▶ Network IP address ▶ Host name ▶ Domain name ▶ Enable/Disable ▶ Enable/Disable ▶ Enable/Disable ▶ Network IP address ▶ Network IP address ▶ IP address or DNS name ▶ Network IP address
System	<ul style="list-style-type: none"> ▶ UPS Contact ▶ UPS Location ▶ History Log Interval (sec) ▶ Refresh Rate (sec) ▶ Default Language ▶ Outputs name ▶ System stop duration (sec) ▶ Working time on battery (min) before stop 	<ul style="list-style-type: none"> ▶ Computer Room Manager ▶ Computer Room ▶ 60 ▶ 10 ▶ Auto ▶ Master/Group1/Group2 ▶ 120 ▶ 30 	<ul style="list-style-type: none"> ▶ 32 characters max. ▶ 32 characters max. ▶ 20 to 99999 ▶ 5 to 99999 ▶ Auto/English/French/German/Italian/Spanish ▶ 30 characters max. ▶ 0 to 9999 ▶ 0 to 1092
Manager table		▶ (Empty list)	▶ 50 max.

Remarks. Same password must be used to modify those parameters via internet browser, serial link or Telnet.

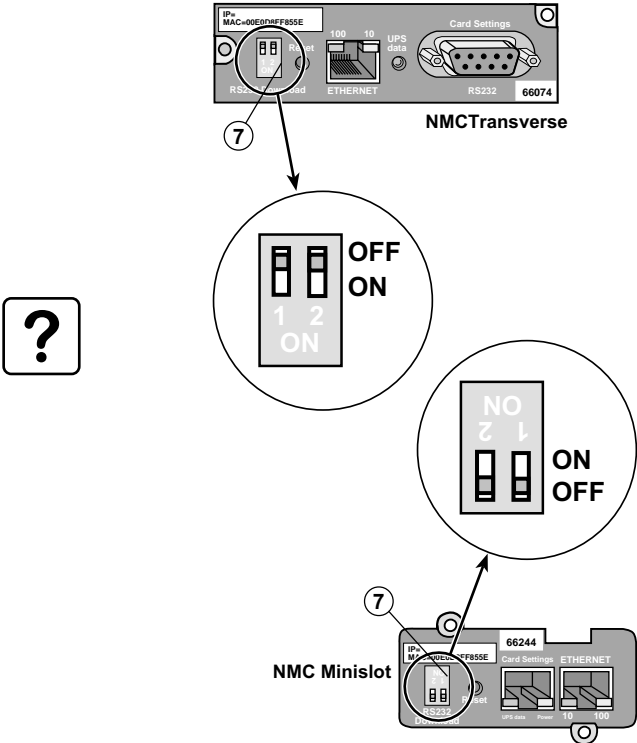
1. Presentation

Functions	Parameters	Default values	Possible values
Access control	<ul style="list-style-type: none"> ▶ Manager Login ▶ Password ▶ Current community read-only ▶ Current community read/write ▶ Trap Port Number 	<ul style="list-style-type: none"> ▶ MGEUPS ▶ MGEUPS ▶ public ▶ public ▶ 162 	<ul style="list-style-type: none"> ▶ 10 characters max. ▶ 10 characters max. ▶ 31 characters max. ▶ 31 characters max. ▶ (free)
Email notification	<ul style="list-style-type: none"> ▶ Recipients ▶ Logs attached files ▶ Sender ▶ Subject ▶ Text ▶ Evenement table 	<ul style="list-style-type: none"> ▶ recipientx@domain.com ▶ None ▶ ups@domain.com ▶ MGE UPS SYSTEMS ▶ None ▶ UPS fault / UPS Off sequence in progress 	<ul style="list-style-type: none"> ▶ 4 recipients max. ▶ Measures / Events / System / Environment logs ▶ 60 characters max. ▶ see configuration page ▶ 136 characters max. ▶ see configuration page
Environment	<ul style="list-style-type: none"> ▶ Temperature unit ▶ Temperature threshold ▶ Humidity threshold 	<ul style="list-style-type: none"> ▶ Celsius ▶ 40°C max. / 5°C min. ▶ 90% max. / 5% min. 	<ul style="list-style-type: none"> ▶ Celsius / Fahrenheit ▶ 0 to 70°C ▶ 0 to 100%
Time	<ul style="list-style-type: none"> ▶ Setting time ▶ Time zone ▶ Daylight Saving Time 	<ul style="list-style-type: none"> ▶ Set manually ▶ GMT-05 Eastern Time ▶ OFF 	<ul style="list-style-type: none"> ▶ NTP Server / Computer ▶ (see list) ▶ ON / OFF
Serial link	<ul style="list-style-type: none"> ▶ Speed ▶ Data bits ▶ Stop bit ▶ Parity 	<ul style="list-style-type: none"> ▶ 9600 bauds ▶ 8 ▶ 1 ▶ None 	<ul style="list-style-type: none"> ▶ (not authorized) ▶ (not authorized) ▶ (not authorized) ▶ (not authorized)

Remarks. Same password must be used to modify those parameters via internet browser, serial link or Telnet.

2. Installation

2.1 Installation DIP-switch settings 7

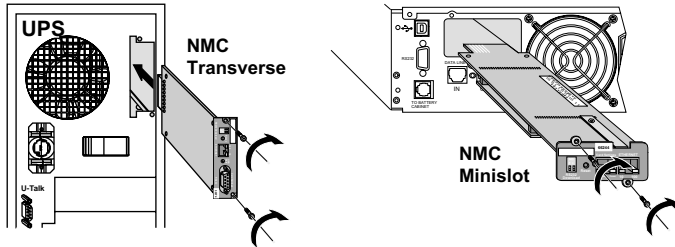


Switch 1	Switch 2	Function
ON	ON	Reserved
ON	OFF	Serial link downloads enabled
OFF	ON	Reserved
OFF	OFF	Operational mode (default)

To get more information about downloading, see section 5.3.

2. Installation

Installation in a UPS equipped with slots

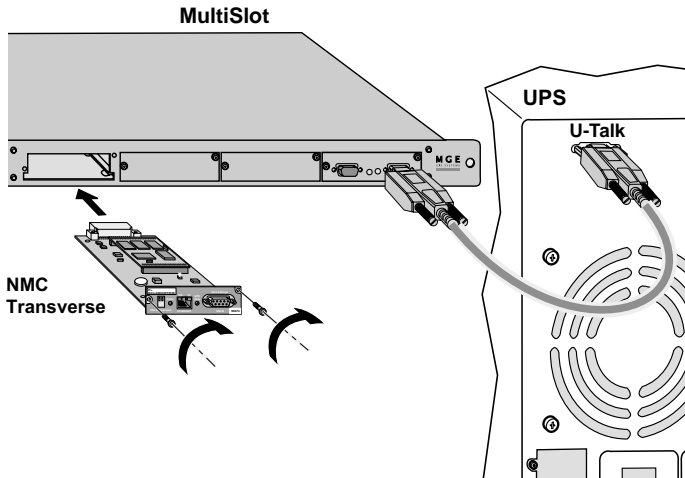


It is not necessary to turn the UPS off.

1 - Using a screwdriver, remove the cover from a free slot in the UPS.

2 - Insert and secure the communication card in the UPS.

Installation in a MultiSlot module



This installation is possible only with the **NMC Transverse**.

1 - Using a screwdriver, remove the cover from a free slot in the **MultiSlot** module.

2 - Insert and secure the communication card in the **MultiSlot** module.

2. Installation

2.2 Environment Sensor installation

Refer to the 34003783EN installation manual included in the Environment Sensor kit (66846).

2.3 Connection of the Ethernet link



To make use of the full potential of your installation, we recommend using shielded cables with shielded RJ45 connectors.

Connection to a hub

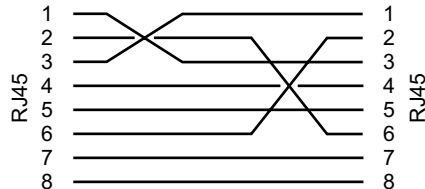
Straight-through 10/100 Base-T cable



If the **Network Management Card** is connected to a hub, use a straight-through cable.

Connection to a computer

Crossover 10/100 Base-T cable



If the **Network Management Card** is connected to a computer, use a crossover cable.

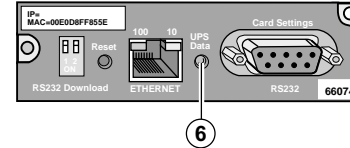
2. Installation

2.4 Indications

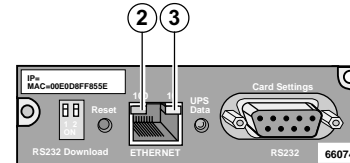
Network Management Card Transverse



Green LED ⑥ UPS Data	Function
Slowly flashing (1 s)	Start phase
Rapidly flashing	Dialogue with the UPS or MultiSlot
Random flashing	Data exchange with the UPS or MultiSlot
Off	Card fault



Green 100 LED ②	Orange 10 LED ③	Function
Slowly flashing (1 s)	Off	100M Ethernet traffic
Off	Slowly flashing (1 s)	10M Ethernet traffic
Off	Off	Ethernet not connected



The card is operational approximately 30 seconds after insertion.

2. Installation

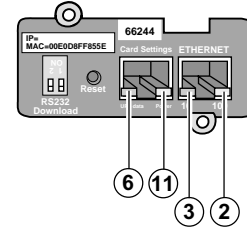
Network Management Card Minislot



Green Power LED ⑪	Orange UPS Data LED ⑥	Function
On	Random flashing	Terminal communication operational
Off / On	Rapid flashing	Download via RS232
Flashing alternately		Diagnostics mode
On	On	Card fault

100 LED ②	10 LED ③	Function
Slowly flashing (1 s)	Off	100M Ethernet traffic
Off	Slowly flashing (1 s)	10M Ethernet traffic
Off	Off	Ethernet not connected

The card is operational approximately 30 seconds after insertion.



3. Configuration

3.1 Default IP address

The **Network Management Card** comes with a default IP address. This address is derived from the MAC address on the label on the front of the card.

The format of the MAC address is **00 E0 D8 LL MM NN**, where:

- ▶ **00 E0 D8** is the manufacturer code in hexadecimal format,
- ▶ **LL MM NN** is the serial number of the card in hexadecimal format.

The default IP address of the card is made up of four bytes of which the last two are derived from the MAC address.

The format of the IP address is 172.17.xxx.yyy, where:

- ▶ **172.17** is a fixed value,
- ▶ **xxx** is the decimal value of the MM byte,
- ▶ **yyy** is the decimal value of the NN byte.

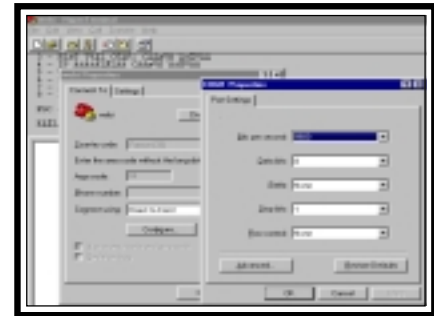
For example, for a MAC address 00 E0 D8 04 0A 15, the corresponding default IP address is 172.17.10.21.

3.2 Parameter settings

Via the serial link



- ▶ Run Hyper Terminal on a PC running Windows (9x, Me, NT4.0, 2000 or higher).
- ▶ Connect the card to the PC using the cable supplied.
- ▶ Set up the terminal with the following communication parameters:
 - ▷ 9600 bauds. ▷ 8 data bits.
 - ▷ 1 stop bit. ▷ no parity.
 - ▷ no flow control.
 - ▷ ASCII: "**echo typed characters locally**" option disabled.
- ▶ Press the **Carriage return** key. The configuration menu is displayed.
- ▶ Enter the password (MGEUPS by default).
- ▶ The main menu is displayed.
- ▶ Select one of the items in the configuration menu.

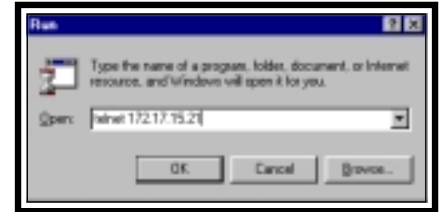


3. Configuration

Via the network

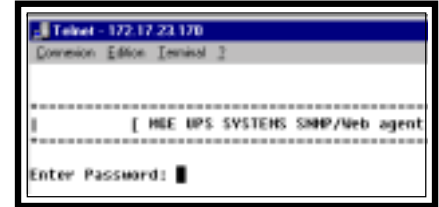
Via Telnet

- ▶ Check that the card is connected to the ETHERNET network.
- ▶ Launch the "**Run**" command under Windows on a PC.
- ▶ Enter **telnet @IP**
- ▶ Connection is made. A screen is displayed.
- ▶ Enter the password (MGEUPS by default).
- ▶ The main menu is displayed.
- ▶ Select one of the items in the configuration menu.



Via a browser

- ▶ Check that the card is connected to the ETHERNET network.
- ▶ Run the browser on a PC.
- ▶ Enter the URL **http://@IP/**
- ▶ The main page is displayed.
- ▶ Select one of the items in the settings menu.



3.3 Setting the network parameters

The **Network Management Card** requires the following network parameters:

- ▶ The **IP address** used for identification on the network.
- ▶ The **Subnet mask** which defines the group of users to which it is connected.
- ▶ The address of the **Gateway** to which it connects to communicate with another subnet.

The network parameters are set up each time the system is started:

- ▶ Automatically if the network is equipped with a BOOTP or DHCP server;
- ▶ With the fixed parameters set manually if an IP address server is not available.

If the BOOTP/DHCP server is not ready, saved parameters are used.



3. Configuration

The table below presents the initialisation mode for the network parameters:

Network configuration	Mode sélectionné	Fonctionnement
BOOTP/DHCP server installed	▶ BOOTP/DHCP enabled	▶ Reception and use of the network parameters sent by the server (10s max.).
	▶ BOOTP/DHCP disabled	▶ Use of manual settings.
No server available	▶ BOOTP/DHCP enabled	▶ Attempt to connect to a BOOTP/DHCP server for ten seconds, then use settings saved during previous connection or default IP address.
	▶ BOOTP/DHCP disabled	▶ Use of manual settings.



Important. 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.

Via the serial link or Telnet

- ▶ Select the "**Agent configuration**" command by entering 1.
- ▶ Select the item numbers and modify all the IP parameters (address, mask, gateway).
- ▶ Once all the modifications have been made, exit following the instructions on the screen.

Via a browser

- ▶ Select the "**IP network**" command in the configuration menu.
- ▶ Modify all the IP parameters (address, mask, gateway).
- ▶ Click the "**Save changes**" button.
- ▶ Enter the user name (MGEUPS by default) and the password (MGEUPS by default).



Important. The modifications of the network parameters are taken into account when the card is restarted.

3. Configuration

3.4 Restarting the card



Manually

- ▶ Press the **Reset** (8) button.

Via the serial link or Telnet

- ▶ Select the "**Restart agent**" command by entering 6.
- ▶ Then follow the instructions on the screen.

Via a browser

- ▶ Select the "**System**" command in the configuration menu.
- ▶ Click the "**Reset communication**" button.
- ▶ Enter the user name (MGEUPS by default) and the password (MGEUPS by default).

Remarks:

- ▶ The card is operational approximately 30 seconds after it is started.
- ▶ User customized parameters are not modified after a restart.
- ▶ Pressing the **Reset** (8) button does not modify any parameters.



3. Configuration

3.5 Restoring the default parameters



If problems occur during the configuration procedure or if the password is lost, it is possible to return to the default parameters (factory settings), listed in section 1.5.

Via Telnet or Hyper Terminal

- ▶ Select the "**Agent configuration**" command by entering 1.
- ▶ Select the "**Reset configuration to default**" command by entering 5.
- ▶ Then follow the instructions on the screen.



Via a browser

- ▶ Select the "**System**" command in the configuration menu.
- ▶ Click the "**Factory Reset**" button. The IP parameters are kept if the option is selected.
- ▶ Enter the user name (MGEUPS by default) and the password (MGEUPS by default) if necessary.



Remark. Date and time are not modified after restoring default parameters.

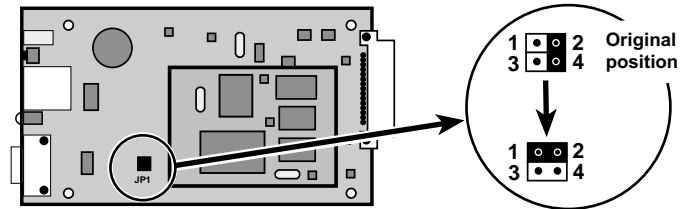
3. Configuration

3.6 Restoring the default password

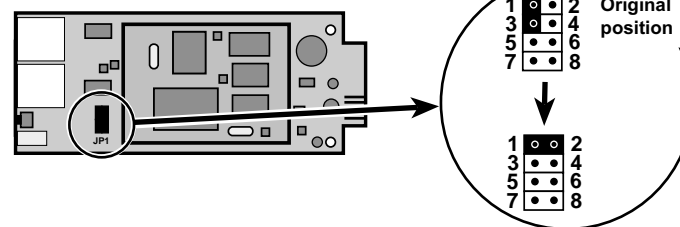
If you lose your password, to restore the default one MGEUPS, you must perform following steps:

- ▶ Pull out the card from the UPS slot.
- ▶ Move jumper as shown below.
- ▶ Insert the card inside the UPS slot and wait for 30 seconds.
- ▶ Pull out the card from the UPS slot again.
- ▶ Move jumper to the original position shown below.
- ▶ Insert the card inside the UPS slot, secure it, and wait for 30 seconds
- ▶ Password is now reset to MGEUPS. You can customise it again.

NMC Transverse



NMC Minislot



Remark. When the jumper is not returned to its original position, MGEUPS password is restored every time the card is restarted.

4. Operation

4.1 Operating test following installation and configuration



- ▶ Launch the "**Run**" command in Windows on a station connected to the same subnet.
 - ▶ Enter **ping @IP** (example: ping 172.17.10.21).
- If no answer is sent by the card, check the network parameters.
- ▶ Use the browser to go to the URL address **http://@IP/** and check the page for the "**UPS Properties**".

The screenshot displays the 'UPS Properties' web page for an MGE Evolution 500 UPS. The left sidebar contains a navigation menu with categories: UPS, Logs and Notifications, Settings, Environment, and Services. The main content area is titled 'UPS Properties' and includes a 'Help' link. Below the title, it shows 'Evolution 500' and 'Computer Floor'. A section titled 'UPS Status' contains a sub-section 'About your UPS'. The 'UPS Information' section shows: Control: On, Power source: AC Power, Battery: Charging, Output load level: 0%, and Master output: Master: On. The 'Controlled outlets' section shows Group 1: On and Group 2: On. The 'Battery Status' section shows a full battery charge level (100%) and a remaining backup time of 11h 8 min 23 sec. The last periodic test was performed on 2004/07/08 at 13:50:09.

4.2 Advanced operation

To discover all the advanced functions offered by the **Network Management Card**, see the user documentation on the **Solution-Pac 2 CD-ROM** or on the **www.mgeups.com** site.

5. Maintenance

5.1 Troubleshooting



Problem	Cause	Solution
All the LEDs are off.	The card is not supplied with power.	<ul style="list-style-type: none">▶ Check that the UPS is on.▶ Check that the card is correctly inserted and secured in its slot.▶ Remove the card and insert it again.
The "10" or "100" LED remains off following connection of the cable.	The Ethernet link is not running.	<ul style="list-style-type: none">▶ Check the cable.▶ If connection is made using a hub, check that the hub is supplied with power.
The "UPS data" LED is off.	The card has faulted.	<ul style="list-style-type: none">▶ Contact the after-sales technical support.
Connection using the browser is not possible.	The network parameters are incorrect.	<ul style="list-style-type: none">▶ Check that the "10" or "100" LED is on.▶ Check that the URL corresponds to the current address of the card.▶ Check that the computer can access the address (check the "Subnet-mask" and the "Default gateway" for the computer)▶ Check the position of the jumper.▶ Use the "Ping" command to test the connection.
The configuration menu does not work.	<ul style="list-style-type: none">▶ The RS232 serial link is not operational.▶ The IP address entered by the user is incorrect.	<ul style="list-style-type: none">▶ Make sure the cable used is that supplied with the card.▶ Check the terminal parameters.▶ Test the link using the default parameters.



Note: if the problem cannot be solved, contact the after-sales technical support at the address indicated on the www.mgeups.com site.

5.2 Loss of password

To return to the default password, see section 3.6.

5. Maintenance

5.3 Firmware upgrade

The **Network Management Card** firmware can be upgraded easily through two different download procedures:

- ▶ Via ETHERNET with **Mupgrade** software tool (Windows only).
- ▶ Via ETHERNET with **tftp** command (Unix and Windows).
- ▶ Via serial link with **Download** software tool.

Both software tools Mupgrade and Download are available on the **Solution-Pac 2** CD-ROM or on www.mgeups.com.

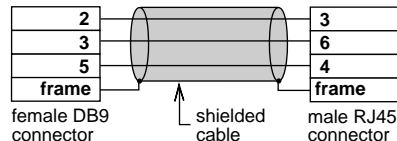
MGE UPS SYSTEMS Web site is periodically upgraded with new firmware releases.

To get more information about those software tools, refer to the **NMC** user manual on the **Solution-Pac 2** CD-ROM or on www.mgeups.com.

5.4 Loss of serial cable

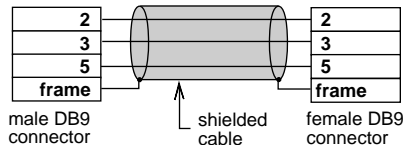
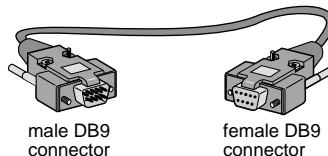
For Network Management Card Minislot

DB9/RJ45 cable (1,8 m max)



For Network Management Card Transverse

DB9/DB9 cable (1,8 m max)



6. Appendix

6.1 Glossary

BOOTP	Bootstrap Protocol. A protocol for restart of products connected to the network.
DHCP	Dynamic Host Configuration Protocol. A protocol for the dynamic assignment of network parameters.
DST	Daylight Saving Time.
Ethernet	Technology used in local networks.
EPM	Enterprise Power Manager.
HTTP	HyperText Transfer Protocol. A protocol based on TCP (port 80) used to transfer requests and data between a server and a browser.
Internet	Network established worldwide for interconnections between computers, based on the TCP/IP protocol.
Intranet	Local network offering the same services as the internet.
IP address	Logic address of an element connected to a network. It is a unique address in the given network.
MAC address	Physical address assigned to a card. It is unique for each card.
MultiSlot	An expansion module for communication cards.
NMC	Network Management Card.
NMS	Network Management System.
NSM	Network Shutdown Module.
NTP	Network Time Protocol.
SNMP	System Network Management Protocol.
UPS	Uninterruptible Power System.
URL	Uniform Resource Locator: the unique address for a page on the internet.

