1.2 Presentation of the Network Management Card (NMC)

1.2.1 Compatibility with UPSs

The Minislot Network Management Card is compatible with the UPS listed into the compatibility list:

- Pulsar MX All models
- MX, MX frame All models
- Pulsar M 2200 / 3000 All models
- Pulsar 700 / 1000 / 1500 All models
- EX 700 / 1000 / 1500 / 2200 / 3000 All models
- Evolution 650 / 850 / 1150 / 1550 / 2000 All models
- Evolution S 1250 / 1750 / 2500 / 3000 All models
- Pulsar Evolution 500 / 800 / 1100 Technical level 06 or higher
- Pulsar Evolution 2200 / 3000 Technical level 05 or higher
- Pulsar Evolution 1500 Technical level 05 or higher
- EXtreme C 700 / 1000 / 1500 Technical level B2 or higher
- EXtreme C 2200 - 3200 Technical level 02 or higher
- Pulsar EX 700 / 1000 / 1500 RT (US°) Technical level 03 or higher
- Pulsar EX 2200 / 3200 (US°) Technical level 09 or higher
- EX 5 / 7 / 11 RT Equiped with Minislot port.
- Powerware 5130 All models
- 9120 All models
- 9130 All models
- 9135 All models
- 9170 All models

Network Management Card acquires information regarding the operation status of the UPS systems and provides remote control of the system through the ETHERNET network from any SNMP administration station or Web browser.

NMC also supplies alarms to the Intelligent Power Protector in order to trigger shutdowns or manage other automatic actions on protected servers.

1.2.2 Direct sending of E-mail

When a UPS event occurs, the Network Management Card can directly notify up to 4 addresses by e-mail. (see E-mail Notification and E-mail message settings)
1.2.3 Sending text messages (SMS)

SMS notification requires the use of a third-party application that converts emails to 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.0605040302@your-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 Software Suite 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 optional Environment Sensor (EMP) solution can be connected to the Card Settings port of the Network Management Cards.

Environment Sensor enables measurement of temperature and humidity around the UPS, allows managing external alarms via 2 dry contacts and notification of alarms according to pre-programmed thresholds. (see Environment 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 2005

As per European directives:
- EMC: 89/336/EEC and 93/68/EEC.

1.3.3 Configuration

The NMC Card can be easily installed while the UPS is online, maintaining the highest system availability

The user can configure the card with one of the following means:
- Web browser
- Telnet/SSH/CLI
- Local serial link (network parameters)
- BOOTP/DHCP (network parameters).
1.3.4 Administration

NEW features:
- Secured management through SNMP V3
- Support of dual stack IPv4 / IPv6
- Up to 35 workstations (in TCP connected mode) or up to 100 (in UDP broadcasted mode) protected by Intelligent Power Protector - Central or local configuration.
- Up to 5 browsers connected at the same time (3 in SSL).

Minimum recommended browser versions: Internet Explorer 8, Mozilla Firefox 3.6, Chrome.

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.

Backup logs in the non-volatile memory.

Languages available: English / French / Spanish / German / Italian / Chinese Traditional / Chinese Simplified / Japanese / Portuguese / Russian / Korean / Czech.

On-line help in English available for each page.

Card firmware update via the network.

Card Mass settings via the network with Intelligent Power Manager.

Firmware Mass Upgrade via the network with Intelligent Power Manager.

1.3.5 Network

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

Compatible with 1Gbits networks in 100 Mbits mode

1.3.5.1 List of ports used

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Direction</th>
<th>Type</th>
<th>Port Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSH</td>
<td>in</td>
<td>TCP</td>
<td>22</td>
</tr>
<tr>
<td>TELNET</td>
<td>in</td>
<td>TCP</td>
<td>23</td>
</tr>
<tr>
<td>SMTP</td>
<td>out</td>
<td>TCP</td>
<td>25</td>
</tr>
<tr>
<td>HTML</td>
<td>out</td>
<td>TCP</td>
<td>80</td>
</tr>
<tr>
<td>NTP</td>
<td>in/out</td>
<td>UDP</td>
<td>68, 67</td>
</tr>
<tr>
<td>BootP, DHCP</td>
<td>in/out</td>
<td>UDP</td>
<td>68, 67</td>
</tr>
<tr>
<td>SNMP V1 &amp; V3</td>
<td>in/out</td>
<td>UDP</td>
<td>161</td>
</tr>
<tr>
<td>TRAP SNMP</td>
<td>in/out</td>
<td>UDP</td>
<td>162</td>
</tr>
<tr>
<td>SSL</td>
<td>out</td>
<td>TCP</td>
<td>443</td>
</tr>
<tr>
<td>NSM in connected mode</td>
<td>in/out</td>
<td>TCP</td>
<td>5000</td>
</tr>
<tr>
<td>NSM in UDP broadcast mode</td>
<td>in/out</td>
<td>UDP</td>
<td>4679, 4680</td>
</tr>
</tbody>
</table>

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.
SMS notification requires the use of a third-party application that converts emails to SMS.
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 shielded CAT5 RJ45 network cables (maximum card/sensor distance: 10 m)

1.3.7 MIB (Management Information Base)

The card is Compatible with following MIBs:
MIB II (RFC 1213)
Internet Engineering Task Force (IETF) Standard UPS MIB (RFC 1628)
EATON Pulsar MIB (ex MGE) V1.7
EATON Powerware MIB (PowerMib)

See the appendix Chapter