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Important!

Please read this document carefully through before going onsite to the customer and carrying out the actions of this document.

In order to resolve the raised matter it is important that either a qualified electric engineer is there at the same time as the procedure requires the UPS to be detached from the wall outlet or that the main circuit breaker for the wall outlet to which the UPS is wired up to can be switched off so that there is no current flowing to the UPS.

The default directory into which this guide, the upgrade software and the firmware code is being installed is C:\2130-xrx_pcns_issue. Directory structure:

```
\---2130-xrx_pcns_issue
   +---firmware
   +---instructions
   +---lynxinstall
```

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Overview

This document informs you on how to upgrade the UPS firmware code to eliminate an installation issue with PowerChute Network Shutdown when two 2130-6RX or two 2130-8RX are to be configured for failover.

Prerequisites

1. Laptop with Windows 2000 or higher with a physical RS-232 serial port connector
2. http://www-1.ibm.com/support/docview.wss?uid=psg1MIGR-57756 – Current firmware code for the Network Management Card (NMC). **Note** - you'll need only the file apc_hw02_aos253_sumx254d.exe from the archive 39m7069.zip. Upgrade instructions can be found in the IBM Network Management Card User's Guide (see below)
3. Wiring diagram for the 2130-6RX and 2130-8RX from the support link http://www-1.ibm.com/support/docview.wss?uid=psg1MIGR-60255
4. Serial cable CRU 73P5767

5. Guides
   a) http://www-1.ibm.com/support/docview.wss?uid=psg1MIGR-58641
        25r5636a.pdf - IBM UPS 7500XHV / IBM UPS 10000XHV
                 Uninterruptible Power Supply Operation and Setup Guide
   b) http://www-1.ibm.com/support/docview.wss?uid=psg1MIGR-58684
        25r5648.pdf - IBM Network Management Card User's Guide

Affected units

- IBM UPS 7500XHV, 2130-6RX
- IBM UPS 10000XHV, 2130-8RX

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Problem description

Installing PowerChute Network Shutdown (PCNS) 2.2 on HS20/40 failed under the following configuration.

The Operating System is Windows 2000 SP4 or Windows 2003 no service pack. Other OSes may be affected as well.

The error message below appeared.
"Could not confirm supported Smart-UPS at 192.168.1.XX1"
"Could not confirm supported Smart-UPS at 192.168.1.XX2"

Configuration

Two Bladecenters are connected to two redundant UPS 10000XHV for providing redundant power. Power supply to both Bladecenters can be maintained even if one of two UPSes should fail.
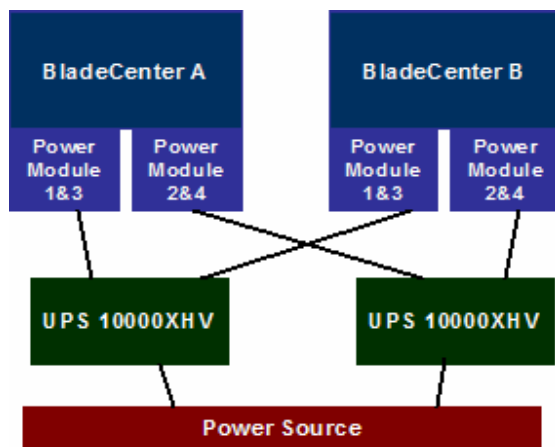
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Questions for the customer

1. Can you ping the IP address of the UPS after the error message appeared?
   - If it failed, it is necessary to verify network connection again.
   - If the ping worked then the software installation failed

2. When installing PCNS on redundant power configuration, which option is the customer using to install the PCNS?
   E.g. custom install -> "install for multiple smart UPS devices" or another option?

3. What is the code level of the Network Management Card? The latest code level is 2.5.4

Additional information

The error message appears when installing PCNS software. The error messages may appear when registering an IP address at the setup of PCNS. These messages come from PCNS S/W. This is caused by the change of the system unit name from "IBM UPS" to "IBM_UPS"

NOTE: The UPS firmware upgrade to delete the underscore in the UPS name is a different firmware upgrade procedure than having the latest v2.5.4 firmware installed.

The NMC firmware revision 2.5.4 has nothing to do with this issue. The UPS firmware needs to be upgraded, not the NMC firmware. They are two separate pieces of code.

The problem exists independent from the version of PCNS used.

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Check the UPS

Find out what the UPS Name is for the IBM UPS7500XHV or IBM UPS10000XHV unit using CTRL-A using a HyperTerminal session and the UPS control console. Please see the instructions below.

Terminal Mode to view UPS ID

Terminal Mode is a menu driven interface that enables enhanced configuration of the UPS.

Connect the serial cable CRU 73P5767 to the serial port on the back of the UPS.

1. Open a terminal program - e.g. HyperTerminal
    From the Desktop, go to Start => Programs => Accessories => Communication =>HyperTerminal.

2. Double-click on the HyperTerminal icon.
    Follow the prompts to choose a name and select an icon. Disregard the message, "...must install a modem," if it is displayed. Click OK.

    From within HyperTerminal, go to File => Properties. On the "Connect To" tab, select the COM port that is connected to your UPS.

    Click on the "Configure" button. The port settings are:
      - bits per second - 2400
      - data - bits 8
      - parity - none
      - stop bit - 1
      - flow control - none

    Click OK

3. In the HyperTerminal window, type <Shift-Y>.

4. The letters **"SM"** should appear, meaning that you are now in SmartMode, communication with the UPS via the UPS-Link language.

5. Next, type <CTRL-A>.

6. The response will then be displayed on the screen, either **"IBM UPSx"** or **"IBM_UPSx"**, depending on the UPS firmware version and the model.

7. Next, type <Shift-R>.

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8. The response will be "**BYE**", indicating that you have exited SmartMode.

9. Exit HyperTerminal.

Additional information

If PCNS 2.2 or PCNS 2.2.1 is installed with 2 IBM UPS75000XHV or 2 IBM UPS10000XHV units (in a redundant configuration) PCNS may not install if there is an underscore in the UPS Name "IBM_UPS". "IBM_UPS" is not recognized by PCNS.

If the underscore is present, the UPS hardware upgrade procedure must be performed to change the name to "IBM UPS".

Steps to take before upgrading the UPS firmware

Removing the Network Management Card (NMC)

In order to perform the next steps you must have the document 25r5636a.pdf - IBM UPS 7500XHV / IBM UPS 10000XHV Uninterruptible Power Supply Operation and Setup Guide available.

1. Turn off the UPS via the front panel. Press this button until all LEDs are turned off. See the User's Guide "Chapter 2: Operation" on page 11 (page 15 of 29 of the 25r5626a.pdf file)

2. Disconnect all load attached to the UPS. See the User's Guide "Chapter 1: installation", subsection "Connecting Equipment and Power to the Rear Panel of the Uninterruptible Power Supply" on page 9 (page 13 of 29 of the 25r5626a.pdf file)

3. Switch off all Output Circuit Breakers. See the User's Guide "Chapter 1: installation", subsection "Connecting Equipment and Power to the Rear Panel of the Uninterruptible Power Supply" on page 9 (page 13 of 29 of the 25r5626a.pdf file)

4. Disconnect the UPS from the wall outlet. This must be done by a qualified electrical engineer!

   -- OR --

   Turn off the main circuit breaker for the wall outlet to which the UPS is wired up to.

5. Remove the NMC from the UPS. See the User's Guide "Chapter 1: installation", subsection "Connecting Equipment and Power to the Rear Panel of the Uninterruptible Power Supply" on page 9 (page 13 of 29 of the 25r5626a.pdf file)

Setting the UPS to "brains-up" for performing the firmware upgrade

In order to perform the next steps you must have the document 25r5636a.pdf - IBM UPS 7500XHV / IBM UPS 10000XHV Uninterruptible Power Supply Operation and Setup Guide available. For proper UPS wiring please follow the instructions given in document MIGR-60255:

http://www-1.ibm.com/support/docview.wss?uid=psg1MIGR-60255

WARNING! The electrical wiring must be performed by a qualified electrical engineer!

1. Wire the UPS up as required by the customer

   -- OR --

   Turn on the main circuit breaker for the wall outlet to which the UPS is wired up to.

2. Make sure that all Output Circuit Breakers are turned off. See the User's Guide "Chapter 2: Operation" on page 11 (page 15 of 29 of the 25r5626a.pdf file)

3. Make sure that the Input Circuit Breaker is turned on. See the User's Guide "Chapter 2: Operation" on page 11 (page 15 of 29 of the 25r5626a.pdf file)

4. Do not attach any load to the UPS!

5. Do not turn the UPS on at all!

After the above steps none of LEDs on the front panel are illuminated and the fans of the UPS should be running. If they are not running, turn on the UPS temporarily so that the fans start to spin. Once they are up and running turn off the UPS until no LEDs are illuminated.

Laptop preparation

In order to successfully complete the firmware upgrade of the UPS set the regional settings of your Windows based Laptop to English-US. This ensures that the upgrade software Lynx operates without problems.

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Flash Upgrade Procedure

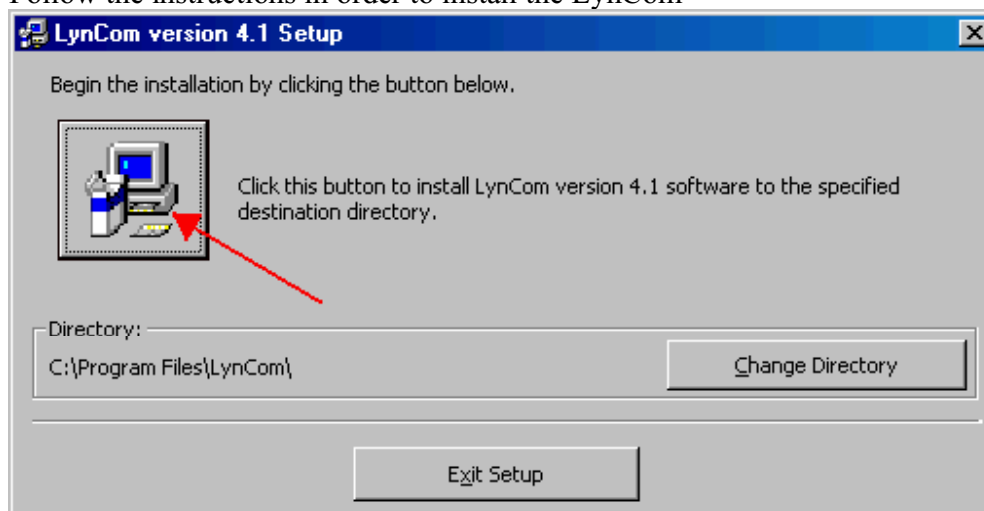Below are the Firmware upgrade instructions.

WARNING
Please note that the process described below is <u>strictly</u> IBM and APC confidential.

Instructions

1. You must log-in as an Administrator or as a Power User in order to be able to install this application.

2. Uninstall and remove all the files when the upgrade is finished.

3. Make sure that no other application is running when the firmware upgrade is performed.

4. Put the firmware LX2_2I3.HEX file into a safe place, preferably on a floppy disk. Please note that .hex file is not encrypted and should be kept in the safe place or deleted as soon as the unit is upgraded.

5. In the directory containing the 3 files SETUP.LST, setup.exe, and LynCom.CAB , start the Setup.exe application to begin the installation process

6. Follow the instructions in order to install the LynCom

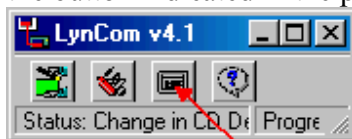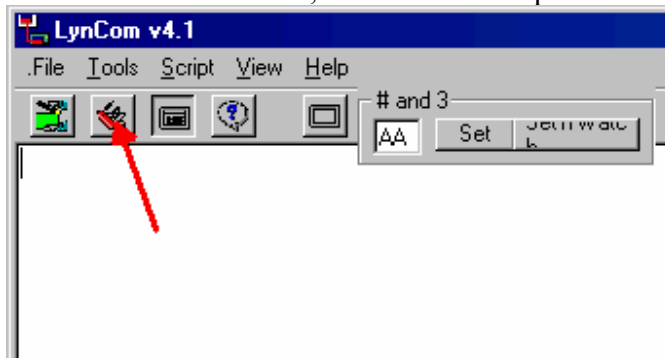**This document is strictly IBM confidential!**

7. Start the LynCom.

8. If the LynCom starts in small screen, switch into the full-screen mode by pressing the button indicated in the picture below:
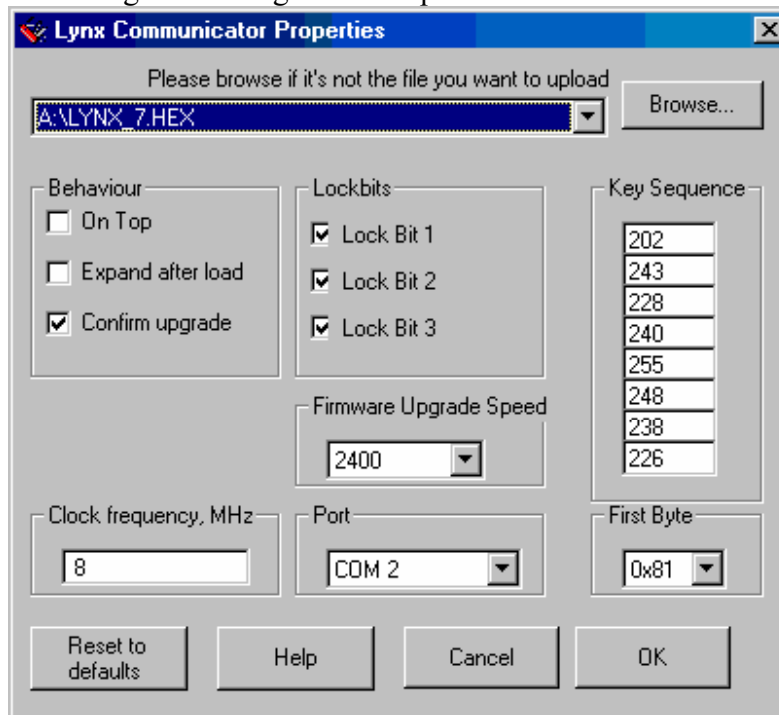
9. In the Full Screen Mode, click on the "Properties" button:

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10. The dialogue box should open:
Set/Change the settings as in the picture below:

- Browse to the firmware file LX2_2I3.HEX.
- Set the Behavior.
- Set the Lock-bits.
- Double check the Key Sequence.
- Set the Clock frequency.
- Set the Com Port to the Com port talking to the UPS.
- Set The First Byte.
- Set the Firmware Upgrade Speed.
- Click the "OK" button.

11. Put the Lynx into the standby state: Output is off, unit is brains-up:
- In the LynCom Window type: "Y", the unit should respond with "SM"
- Press "Ctrl-Q" key combination, the unit should respond with "04" (if the unit will not respond with "04", then the unit is not in standby state. Turn the unit off and try again.)

Note: disconnect all accessory cards prior to step 11! (NMC for example.) The expansion/smart-slot must be empty.

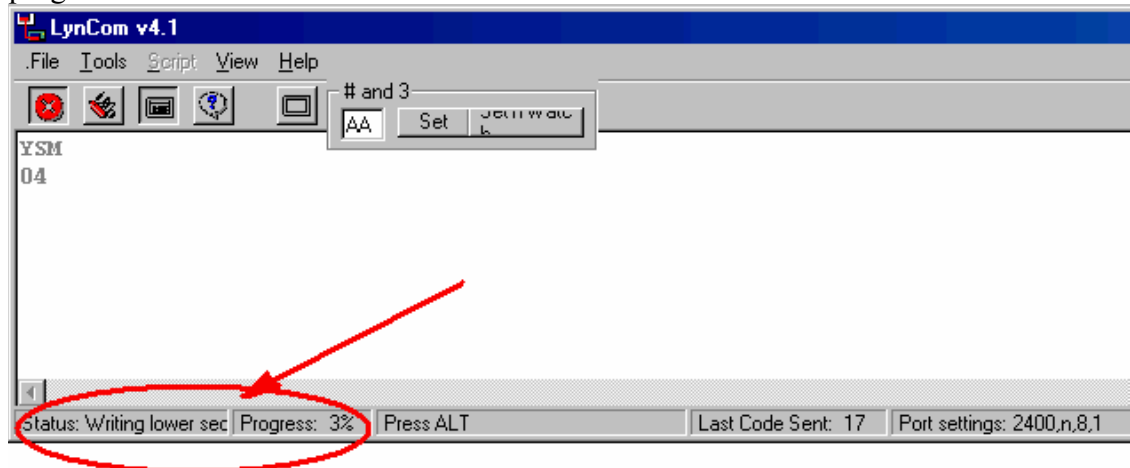**This document is strictly IBM confidential!**

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12. Initiate firmware upgrade process by hitting the "Start/Stop" key:
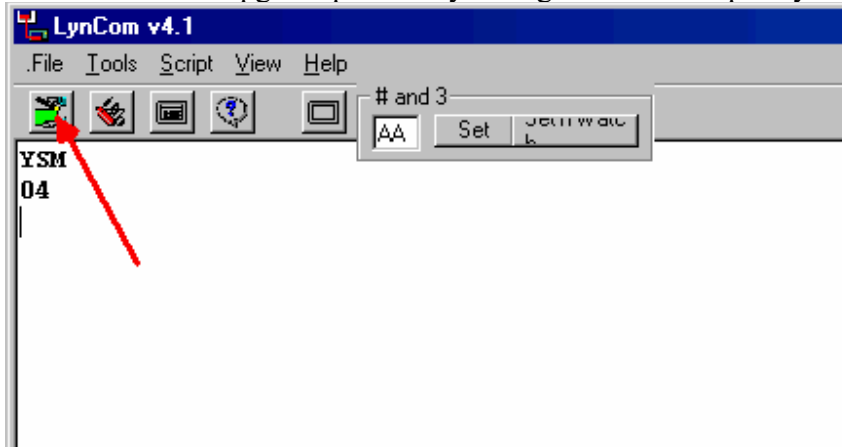
Press "Yes" key to confirm the firmware upgrade.

13. The UPS display should change, indicating firmware upgrade. The upgrade progress is shown in the small window in the lower-left corner:
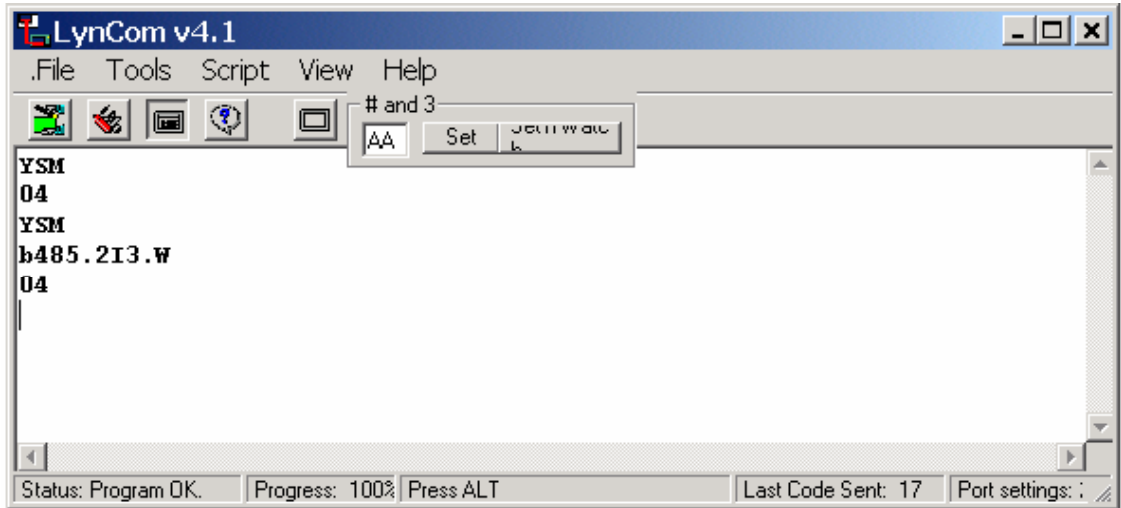

Warning: DO NOT interrupt the upgrade process.

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14. When the upgrade completes successfully the Lynx will enter the standby state. In the LynCom terminal window type: "Y" unit should respond with "SM", type "b" the unit should respond with xxx.yyy.z where yyy is the firmware version which should be "2I3" now.

```
LynCom v4.1                                                    _ □ ×
.File   Tools   Script   View   Help

                            # and 3
                            AA    Set    Jem wait

YSM
04
YSM
b485.2I3.W
04


Status: Program OK.    Progress: 100% Press ALT       Last Code Sent: 17   Port settings: ;
```

15. Close the Lynx application, remove it from your computer and delete all files associated with this procedure.

FAQ

1. Does the UPS output need to be off?
   Yes, the output must be turned off. See the procedure, where it explains on how to put the unit into the standby state. Also, make sure the smart slot is empty. No NMC card or any other card may be installed in the unit.

2. Does the customer need to shutdown?
   Yes. The output must be turned off.

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3. What type of cable is to be used? Is it the 0024C cable?
   Yes. Use the standard communication cable 940-0024C which is shipped with the UPS. The IBM CRU is 73P5767 which is the DB9 to DB9 serial cable

4. Are there any other risks involved with this upgrade that the FSE should be aware of?
   Yes. The upgrade can fail for the number of reasons (e.g. NMC card is not removed.) If the upgrade fails, check if everything has been done correctly according to the above procedure. Then try the upgrade process again. If this still fails then contact IBM support for further assistance.

5. Does the system regional settings / language need to be US English?
   Yes. It must be set to US English as else the Lyncom tool may fail to operate correctly.

Steps to take after the flash upgrade has been successfully completed

Reinstall the NMC card

In order to perform the next steps you must have the document 25r5636a.pdf - IBM UPS 7500XHV / IBM UPS 10000XHV Uninterruptible Power Supply Operation and Setup Guide available. For proper UPS wiring please follow the instructions given in document MIGR-60255:

http://www-1.ibm.com/support/docview.wss?uid=psg1MIGR-60255

WARNING! The electrical wiring must be performed by a qualified electrical engineer!

1. Turn off the UPS via the front panel. Press this button until all LEDs are turned off. See the User's Guide "Chapter 2: Operation" on page 11 (page 15 of 29 of the 25r5626a.pdf file)

2. Switch off all Output Circuit Breakers. See the User's Guide "Chapter 1: installation", subsection "Connecting Equipment and Power to the Rear Panel of the Uninterruptible Power Supply" on page 9 (page 13 of 29 of the 25r5626a.pdf file)

3. Disconnect the UPS from the wall outlet. This must be done by a qualified electrical engineer!

    -- OR --

    Turn off the main circuit breaker for the wall outlet to which the UPS is wired up to.

4. Install the NMC from the UPS. See the User's Guide "Chapter 1: installation", subsection "Connecting Equipment and Power to the Rear Panel of the Uninterruptible Power Supply" on page 9 (page 13 of 29 of the 25r5626a.pdf file)

5. Wire the UPS up as required by the customer

    -- OR --

    Turn on the main circuit breaker for the wall outlet to which the UPS is wired up to.

6. Turn on the UPS until all LEDs are lit

7. Verify the UPS name as detailed in the section "Check the UPS" on page 4 of this document

8. Perform the firmware upgrade for the NMC as detailed in the 25r5648.pdf - IBM Network Management Card User's Guide "Upgrading Firmware" on page 189 or launch the file apc_hw02_aos253_sumx254d.exe and follow the onscreen instructions. NB: you must log on to the UPS as administrator. See e. g. the User's Guide, Chapter "1: Installation", subchapter "Selecting the Output Voltage via Terminal Mode" on page 10 (page 14 of 29 of the 25r5626a.pdf file), steps 3 and 4

9. Turn on all Output Circuit Breakers and attach the load again. See the User's Guide "Chapter 1: installation", subsection "Connecting Equipment and Power to the Rear Panel of the Uninterruptible Power Supply" on page 9 (page 13 of 29 of the 25r5626a.pdf file)

10. You now should have a proper functioning UPS

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