

EP2200 Web Interface and Network Communications Guide

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The following procedure defines how to establish a network connection with the EP2200 uninterruptable power supply. The methods illustrated allow users to connect the EP2200 .NETpower network card to the Ethernet network for status monitoring and control of the EP2200 through various user interfaces such as web browsers, MIB browsers, and Terminal emulators like PuTTY. Please follow the instructions below to establish connections and configuration of the EP2200 uninterruptable power supply.

PRIOR TO CONTINUING:

It is recommended that the EP2200 network card be **configured prior to deployment in the field** to avoid delaying network service at the installation site.

In order to fully establish a connection to the EP2200 network card, we must know the network connection details of the network which we wish to communicate with. This information includes:

- Available IP Address
- Subnet Mask
- Default Gateway Address
- DNS Server(s) Address
- SMTP Server Address/Port Number

Please work with your network administrator to gather this information prior to continuing.

TOOLS AND PHYSICAL CONNECTION REQUIREMENTS:

The EP2200 network card comes with software that is used to discover connected network cards. This program must be used for initial configuration of the network card in order to allow access to the network card's web interface for further configuration. To perform connection and configuration of the EP2200 network card, the following is required:

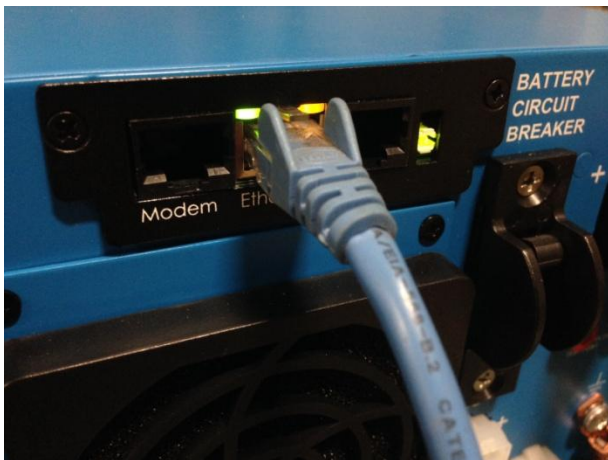
- Adequate test bench with utility power and 48V battery string
- EP2200 with installed .NETpower card
- CAT5 Straight-Through Ethernet cable, connected to the center Ethernet port
- Computer with LAN connection(s)
- SMCONFIG software CD
- PuTTY SSH/Telnet Client
- Chrome Web Browser (Recommended)
- iReasoning MIB Browser (Recommended)

Each EP2200 comes with a software CD containing the SMCONFIG software. Please obtain the software CD from Multilink and the required software prior to continuing with the configuration of the EP2200 network card.

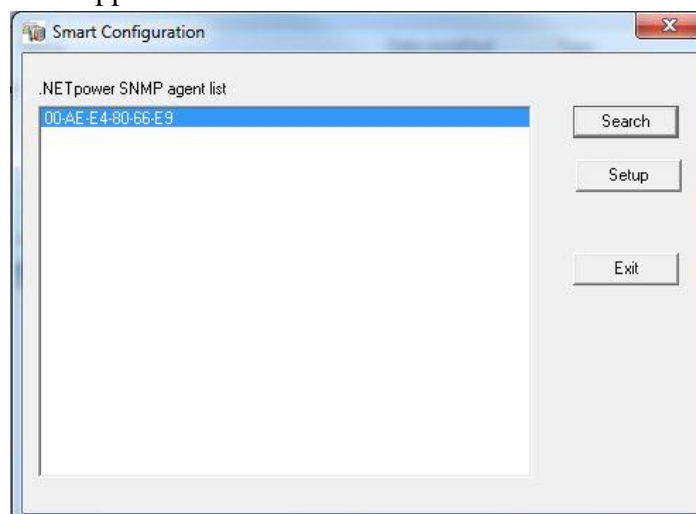
1. Network Card Configuration:

The .NETpower network card must be configured properly to allow for status monitoring and configuration of the EP2200 operating parameters. The following instructions walk through the configuration of the network settings of the network card prior to deployment in the field. A test bench shall be required to simulate the operating environment of the EP2200 in order to configure and test the network card. Please gather the necessary network information, equipment, and software packages listed above before continuing.

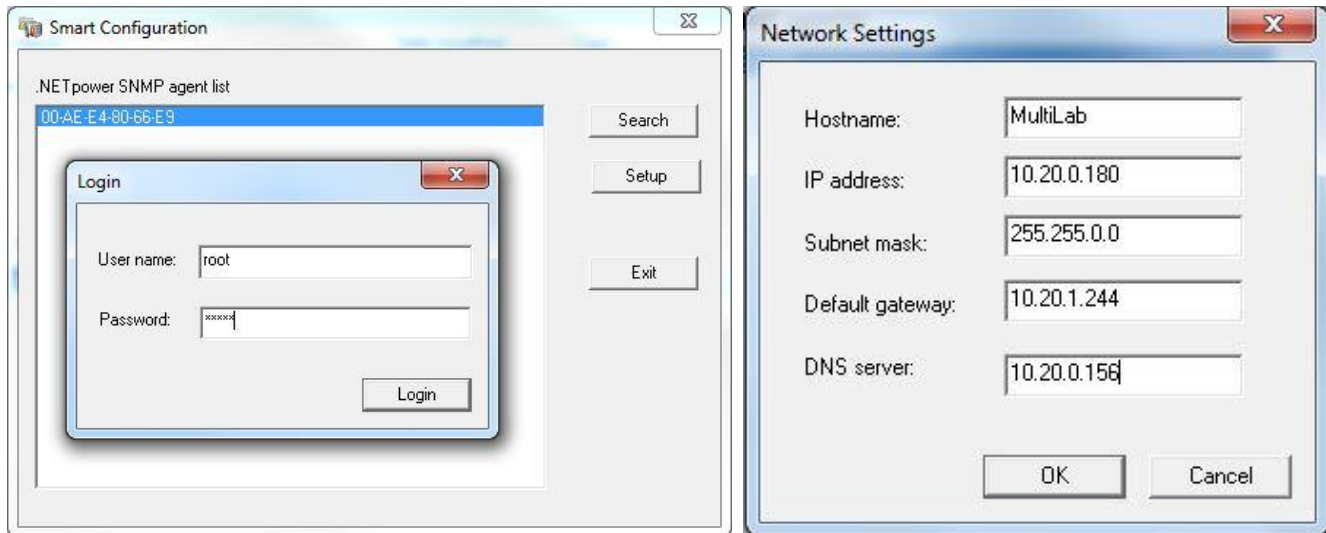
1. Please refer to the operations manual for inspection and wiring of the EP2200 prior to continuing. Utility power must be present to allow for minimal operation of the UPS for configuration prior to deployment in the field.
2. With the EP2200 connected to utility power, turn on the input breaker and allow the UPS to start.
3. A **direct connection** between the UPS network card and PC must be made in order to initially configure the network card. Connect the Straight-Through Ethernet cable to the Ethernet Port of the network card. Connect the other end to the PC's Ethernet Port. Adjust the PC's network adapter settings to match the IP range of the UPS network card (i.e. 192.168.1.10). The typical factory IP address of the network card is '192.168.1.51'. **NOTE:** Do not connect additional serial cables to the USB/DB9 connectors.



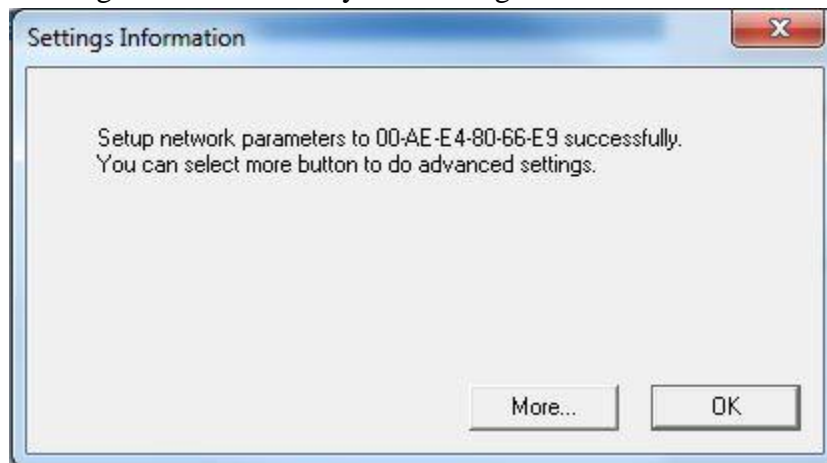
4. Verify that the 2 LEDs on the Ethernet Port are illuminated, with the Yellow LED actively flashing. The larger, Green LED of the network card will periodically flash to indicate power. **NOTE:** The Larger LED may also be used to reset the network card to its factory defaults. Hold for 10 seconds and then release.
5. Start the SMCONFIG software from the CD and click the "Search" button. The SMCONFIG program will broadcast a request for all SNMP agents to respond. If all connections have been made properly, the MAC address of the network card will appear on the screen.



6. Click the “Setup” button. A window will display asking for the login user name and password of the network card. The factory user name is **root** and the password is **synso**. Alternatively, both the user name and password may be **dnpower**. Click “login” and the network settings will display for the network card.



7. With the network information gathered prior to this procedure, enter the network settings required for this network card. Refer to the previous step for an example. The Hostname may be changed to name the UPS or to describe the location of the UPS; “4th and Main” for example. Click “OK” to save the changes made and verify that the network settings have successfully been changed.

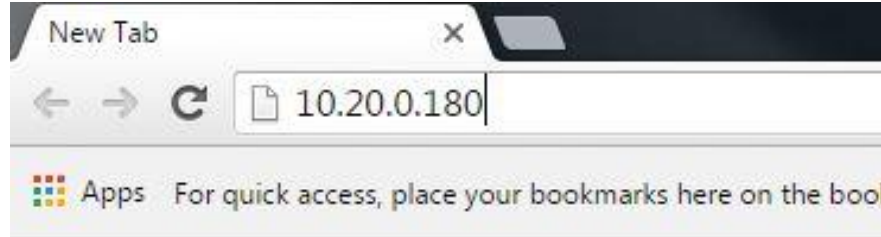


8. At this point, the network card of the UPS is configured for use in the field and may now be connected to the DOT/ITS network it was configured for. Additional configuration for E-mail notification and Event Actions will be **required**. Please continue this procedure if E-mail notification is necessary. Otherwise, the UPS may be powered down and issued for use. **NOTE:** The new IP address may not report on the LCD display until the UPS has been restarted.

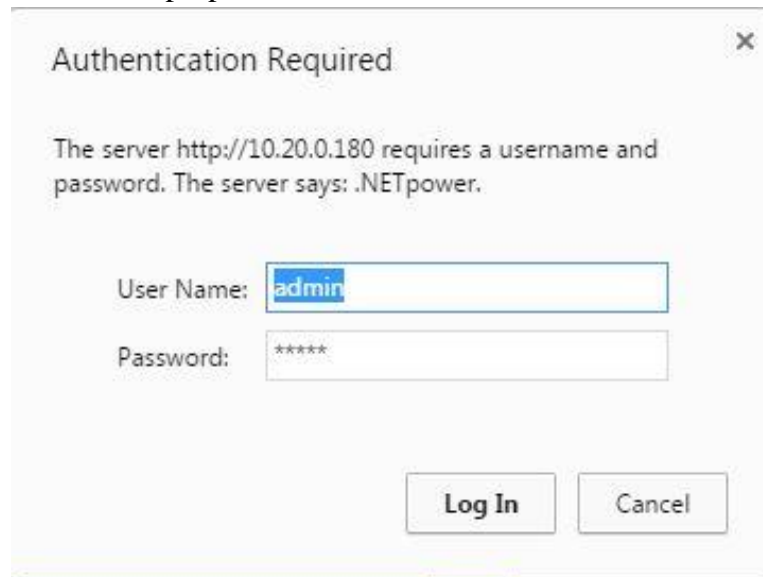
2. SMTP E-mail Server Configuration:

Additional configuration is required if E-mail notifications is required. The following instructions will walk through the necessary configuration of the SMTP server, including instructions for testing the SMTP connection and UPS email account settings.

1. With the network settings now established, we can enter the web interface and configure the e-mail server, event notification, and UPS settings. **NOTE:** If the direct connection is still in use, please update the PC's network adapter settings in order to communicate with the network card of the UPS.
2. Open a web browser and enter the IP address of the network card that has been assigned to the UPS into the address bar. If IP address is not known, scroll through the "Status" menu to display the IP address.



3. Press "Enter" and a screen displaying the network card interface will appear. Select the "Regular Interface" and a prompt asking for the user name and password will display. The factory user name is **root** and the password is **synso**. Alternatively, both the user name and password may be **dnpower**. The user name and password may be changed at a later time. **NOTE:** User name and password depicted in the following picture has been changed for demonstration purposes.



4. Click “Log In” and the home screen of the main menu will be displayed. If you entered a different Host name during the network card configuration, it will display as the ID name.

The screenshot shows the PowerDevice Manager web interface. The browser address bar displays `10.20.0.180/cgi-bin/dnpower.cgi?lang=0&`. The interface has a top navigation bar with tabs: Home, Configuration, Log, Control, and System. On the left, there is a sidebar with a tree view containing: Identification Information (selected), Configuration Information, Measured Information, and Summary Information. Below the tree view is a 'Links' section with three numbered links. The main content area is titled 'Identification Info' and contains two sections: 'Identification Info' and 'Basic Information Settings'. The 'Identification Info' section displays the following details: Manufacturer: Multilink, Inc., Model: EP2200, EEPROM Version: MuP2KV1.8, ID Name: MultiLab, and Attached: NA. The 'Basic Information Settings' section contains two input fields: 'Identification Name' (containing 'MultiLab') and 'Attached Device' (containing 'NA'). At the bottom right of this section are 'Apply' and 'Cancel' buttons.

5. Click on the “System” tab and then click the “Network” option in the column on the left.

The screenshot shows the PowerDevice Manager web interface with the 'System' tab selected. The browser address bar displays `10.20.0.180/cgi-bin/dnpower.cgi?page=63&`. The left sidebar now shows a different tree view: User, Date and Time, Network (selected), User Links, and Firmware Upgrade. The main content area is titled 'TCP/IP Settings' and contains three sections: 'TCP/IP Settings', 'DNS Configuration', and 'SMTP Server Configuration'. The 'TCP/IP Settings' section displays: IPv4 Method: DHCP (selected) and Manual (unselected), IP Address: 10.20.0.180, Subnet Mask: 255.255.0.0, Default Gateway: 10.20.1.244, and MAC Address: 00-AE-E4-80-66-E9. At the bottom right of this section are 'Reboot', 'Apply', and 'Cancel' buttons. The 'DNS Configuration' section contains three input fields: 'DNS Server 1 IP' (10.20.0.16), 'DNS Server 2 IP' (10.20.0.156), and 'DNS Server 3 IP' (empty). At the bottom right are 'Apply' and 'Cancel' buttons. The 'SMTP Server Configuration' section contains: SMTP Server: 10.20.0.207, SMTP Port: 25, Authorized: Enable (unselected) and Disable (selected), From: TestUPS@gomultilink.com, User Name: (empty), and Password: (empty). At the bottom right are 'Test', 'Apply', and 'Cancel' buttons.

6. In this menu, the option is allow the network administrator to use “DHCP” to assign new IP addresses is available. If this option is to be chosen, click “Apply” and the network card will reboot. SMCONFIG must be run again to determine the new IP address assigned or by scrolling through the front panel to reveal the network card settings. If a new IP address has been assigned, please re-enter this new IP address in the address bar of the web browser before continuing. Verify the previously entered network settings of the “Manual” option are preserved. Before proceeding, click the “Apply” button to save all changes.
7. To set up the email notification, the SMTP Server IP Address and Port Number of the network must be known and entered into this configuration.



The image shows the 'SMTP Server Configuration' web form. It has a blue header bar with the title. Below it, on a yellow background, are labels for 'SMTP Server:', 'SMTP Port:', 'Authorized', 'From:', 'User Name:', and 'Password:'. To the right of these labels are input fields. The 'Authorized' field has two radio buttons: 'Enable' and 'Disable', with 'Disable' selected. At the bottom right are three buttons: 'Test', 'Apply', and 'Cancel'.

8. SMTP is the server that is used to forward e-mail throughout the network. Enter the SMTP IP Address and Port Number that was gathered prior to this procedure.



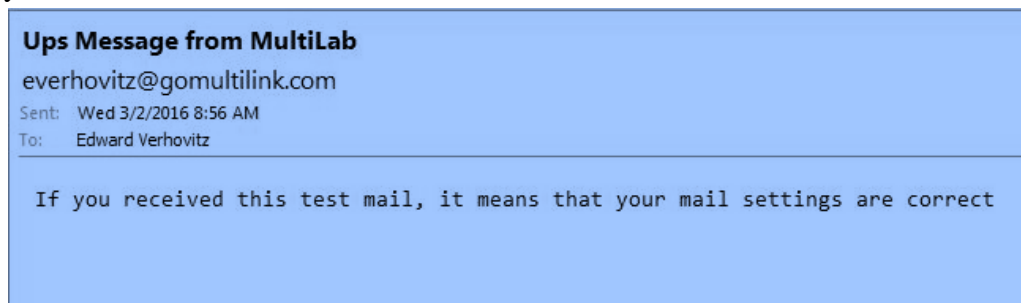
The image shows the 'SMTP Server Configuration' web form with the 'SMTP Server' field containing '10.20.0.207' and the 'SMTP Port' field containing '25'. The 'Authorized' radio buttons remain the same, with 'Disable' selected. The 'From:', 'User Name:', and 'Password:' fields are empty. The 'Test', 'Apply', and 'Cancel' buttons are at the bottom right.

9. To test the SMTP connection, a known email address can be used to send itself a test email. Enter an email address in the “From” textbox that can be used to verify the SMTP connection. Click “Apply” to save all changes.



The image shows the 'SMTP Server Configuration' web form. The 'SMTP Server' and 'SMTP Port' fields are the same as in the previous image. The 'From:' field now contains the email address 'everhovitz@gomultilink.com'. The 'User Name:' and 'Password:' fields are still empty. The 'Test', 'Apply', and 'Cancel' buttons are at the bottom right.

10. To test the SMTP connection, click “Test” to send a test email to the email address listed in the “From” textbox. Verify that a test email has been received.



11. If a test email from the UPS has been received, the SMTP connections are correct. An email address can now be entered for this UPS. If no e-mail authorization is required, select “Disable” and enter the desired email address of this UPS in the “From” textbox. If authorization is required, select “Enable”. An e-mail account for the UPS must be made with your Network Administrator to provide a user name and password. Click “Apply” to save all changes.

A screenshot of a "SMTP Server Configuration" dialog box. It has a blue header bar with the title. Below the header, there are several fields: "SMTP Server :" with the value "10.20.0.207", "SMTP Port :" with the value "25", "Authorized" with two radio buttons labeled "Enable" and "Disable" (where "Disable" is selected), "From :" with the value "TestUPS@gomultilink.com", "User Name :" with an empty field, and "Password :" with an empty field. At the bottom right, there are three buttons: "Test", "Apply", and "Cancel".

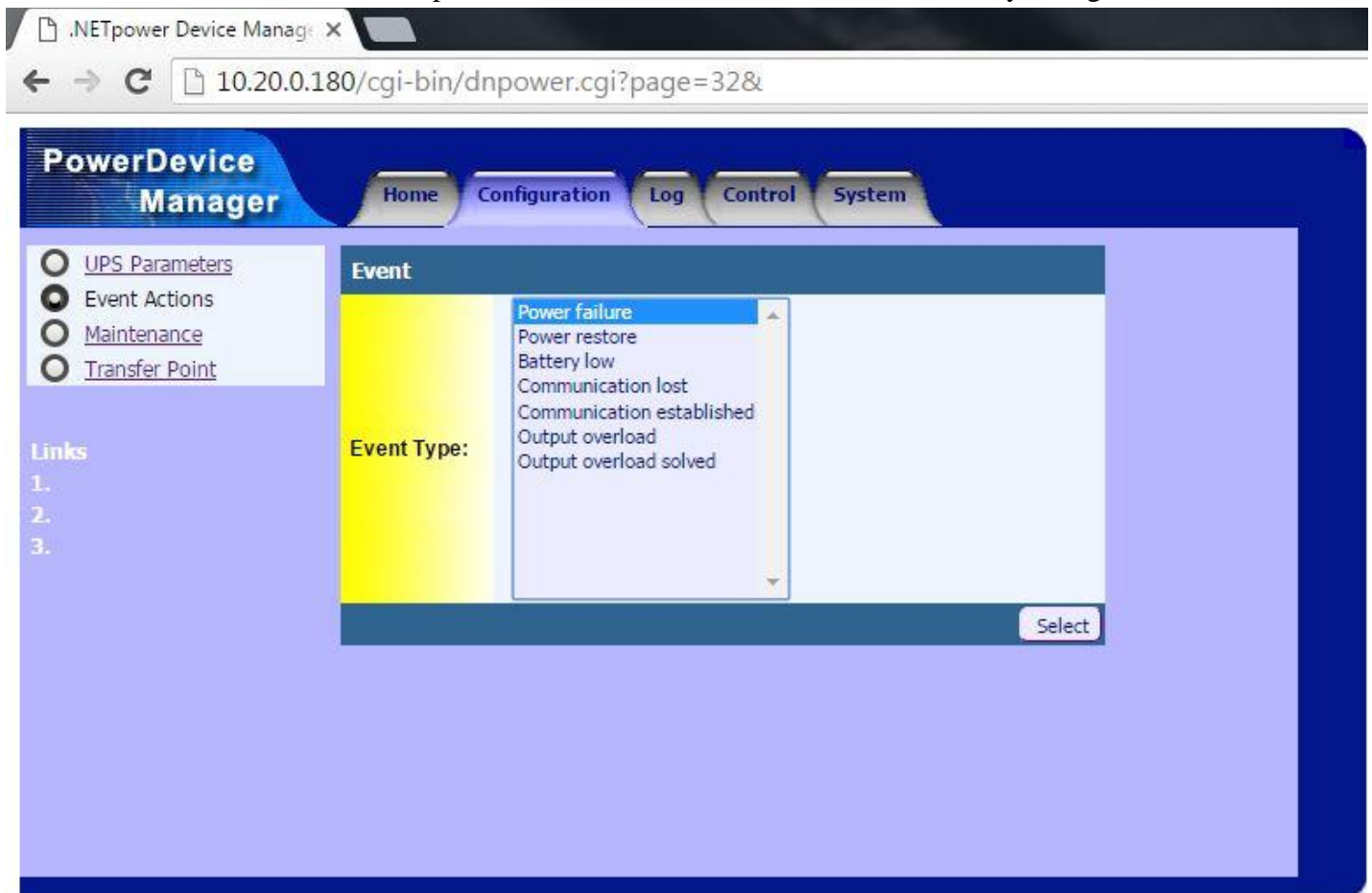
12. If the test email was not received, check the spam or junk folder of the email client. If no email is present, verify the network settings with the network administrator for the SMTP server IP address, Port Number, and email address in the “FROM” textbox. Click “Apply” to save all changes made and repeat steps 9-11 of this section.

3. Event Notification Configuration:

The .NETpower network card is capable of sending e-mail notifications in the event of power outages, power restoration, and additional conditions. The following instructions will walk through setting up the “Event Actions” option.

1. With the SMTP email server configured and tested, events may be setup to send an e-mail to 1 or more users if the event occurs. Click on the “Configuration” tab and click “Event Actions” in the column on the left. Then, select an option from the list and click “Select”. “Power Failure” will be chosen as an example.

NOTE: Additional events to improve and extend the notification of alarms may change without notice.



2. After clicking “Select”, the menu to enable notifications during a “Power Failure” will display. To enable e-mail notifications, click on the check box next to “Enable” under the “Power Failure – Send email” category. Below is an explanation of options available:
 - **Delay** - Entering a “Delay” will wait the specified time in seconds until an email notification will be sent to the users listed. A Delay of “0 sec(s)” will send an email notification at the time of the event. A Delay of “300 sec(s)” will delay 5 minutes before sending an email notification.
 - **Message** – After the length of Delay, an email notification containing a message will be sent. You may enter a message such as “Power Failure occurred at the #DATE-TIME#” or “Power Failure occurred at #HOSTNAME#.” Using the system tags “#DATE-TIME#” and “#HOSTNAME#” will list the time of the event and/or the ID name of the UPS.

- **TIP:** If you had changed the ID name/ Hostname of the UPS as a reference to its location (i.e. “4th and Main”), using the “#HOSTNAME#” system tag in the message field will help indicate where the Power Failure event occurred.
- **Recipients** – Enter the email address of the users to receive email notifications of an occurring event. Enter the email address of a single user such as “user1@email.com” or multiple users separated by a semi colon such as “user1@email.com;user2@email.com;user3@email.com”.

The screenshot shows the PowerDevice Manager web interface. The browser address bar displays "10.20.0.180/cgi-bin/dnpower.cgi?page=32&val=1001&". The interface has a blue header with the "PowerDevice Manager" logo and navigation tabs: Home, Configuration, Log, Control, and System. On the left, there is a sidebar with links: UPS Parameters, Event Actions, Maintenance, and Transfer Point. Below the sidebar, there are numbered links 1, 2, and 3. The main content area is titled "Power failure - Log" and contains several configuration sections:

- Power failure - Log:** Includes an "Enable:" checkbox which is checked.
- Power failure - Broadcast network message:** Includes "Enable:" (checked), "Delay:" (5 sec(s)), "Message:" (#HOSTNAME# is running on the batt), "Period:" (30 sec(s)), and "Recipients:" (broadcast).
- Power failure - Send email:** Includes "Enable:" (checked), "Delay:" (0 sec(s)), "Message:" (Power Failure occurred at the #DATE), and "Recipients:" (everhovitz@gomultilink.com).
- Power failure - Page users:** Includes "Enable:" (unchecked), "Delay:" (0 sec(s)), "Message:" (#1001#), and "Recipients:" (empty).

At the bottom of the configuration area, there are "Apply" and "Cancel" buttons, and a "<<<< Back" button.

3. Modify the Delay, Message, and Recipients fields as described above and click “Apply” to save all changes. Click the “<<<<Back” button to return to the list of “Event Actions”.
4. At this time, additional events may be configured prior to continuing. Click the “Apply” button after every event configuration to save all changes.
5. The network card for this UPS is now configured to send email notifications. A restart of the UPS is required in order for all changes to be applied. Turn off the Input Breaker on the UPS and allow the unit it shut down. **NOTE:** Do not disconnect the Ethernet cable from the network card.
6. The following is used to test the email notification for the “Power Failure” event. In order to test the “Power Failure” event notification functionality, a 48V battery string will be required to simulate a “Power Failure”.
7. Turn on the Input Breaker on the UPS and connect the 48V string to the UPS. Turn on the Battery Breaker.

8. Remove the utility power from the UPS by unplugging the power cord or opening the upstream Utility Breaker. Do not shut off the Input Breaker. The UPS should now be running “ON BATT” and an email notifying the user that a Power Failure has occurred will be sent shortly. **NOTE:** Email latency will depend on the set “Delay” time.

Ups Message from MultiLab

TestUPS@gomultilink.com

Sent: Wed 3/2/2016 10:07 AM

To: Edward Verhovitz

Power Failure occurred at the 2016/03/02 10:06:54

9. Plug the power cord back in or close the upstream Utility breaker to restore power to the UPS. After a brief period of time, the UPS will revert to line mode. If necessary, repeat step 8 to test the “Power Failure” event again.
10. If no email notification was received, check the spam or junk folder of the email client being used. If no email is present, shutdown the UPS and repeat steps 5 through 8 of this section. If repeating these steps does not work, verify settings in step 3. Ensure that each event is configured correctly by clicking “Apply” after all changes have been made.

4. Web Interface Guide:

In this section, additional web page options are explained. Each tab that is visible on the webpage offers valuable information regarding the current operating status of the EP2200 and various options that may be available for configuration. Periodically, the webpage will automatically refresh to update any currently displayed operating values. The following instructions describe the tabs of the Web Interface and any options that may be available for configuration.

Home Tab:

The Home Tab describes information about the Identification, Configuration, Measured Information and Summary Information of the currently monitored EP2200. These 4 sections are listed in the left column of the webpage.

- **Identification Information** – Provides UPS identification, model type, firmware version, the name of the UPS and if any environmental device is attached to the network card. The name of the UPS and attached device may be changed.

The screenshot shows the 'PowerDevice Manager' web interface. The 'Home' tab is selected. On the left, there are four links: 'Identification Information', 'Configuration Information', 'Measured Information', and 'Summary Information'. Below these are three numbered links (1, 2, 3). The main content area is divided into two sections. The first section, 'Identification Info', displays the following details: Manufacturer: Multilink, Inc., Model: EP2200, EEPROM Version: MuP2KV1.8, ID Name: TestUPS, and Attached: NA. The second section, 'Basic Information Settings', contains two input fields: 'Identification Name' with the value 'TestUPS' and 'Attached Device' with the value 'NA'. At the bottom right of this section are 'Apply' and 'Cancel' buttons.

- **Configuration Information** – Provides the current UPS operating configuration including Input, Output, Battery, and Transfer characteristics. Values may be changed in the Configuration Tab.

The screenshot shows the 'PowerDevice Manager' web interface with the 'Configuration' tab selected. On the left, the same four links are present, but 'Configuration Information' is now highlighted. Below them are the same three numbered links. The main content area displays 'Configuration Info' in a table format:

Input Voltage:	120	Volts
Input Frequency:	60.0	Hertz
Output Voltage:	120	Volts
Output Frequency:	60.0	Hertz
Battery Voltage:	48.0	Volts
Max Charger Current:	010	Amps
Low Voltage Transfer:	90	Volts
High Voltage Transfer:	150	Volts

- **Measured Information** – Displays the current operating values measured by the UPS. Values are automatically updated every 10 seconds.

PowerDevice Manager		Home	Configuration	Log	Control	System
<input type="radio"/> Identification Information <input type="radio"/> Configuration Information <input checked="" type="radio"/> Measured Information <input type="radio"/> Summary Information	Links 1. 2. 3.	Input Voltage: 116 Volts Frequency: 59.7 Hertz				
		Output Voltage: 117 Volts Output Watt: 0 Watt				
		Battery Voltage: 55.3 Volts				
		Temperature UPS 18 Degree C				
		Event / Timer Inverter Event: 00024 times Inverter Timer: 0000 Hours 10 Minutes Buck Event: 00000 times Buck Timer: 0000 Hours 00 Minutes Boost Event: 00001 times Boost Timer: 0000 Hours 00 Minutes				

- **Summary Information** – Provides a summary overview of operating conditions of the UPS. Relay Contact status for each of the relays is displayed. Values are automatically updated every 10 seconds. Contacts may be configured in the “Control” tab.

PowerDevice Manager		Home	Configuration	Log	Control	System
<input type="radio"/> Identification Information <input type="radio"/> Configuration Information <input type="radio"/> Measured Information <input checked="" type="radio"/> Summary Information	Links 1. 2. 3.	Summary Date & Time: 03/04/16 , 13:09:24 Sense Type: Normal Line Status: Normal Output Status: Linemode External Fan Status: [NotActivated] Faults: NONE Alarms: NONE				
		Contact Status Contact C1: [ONBATT]/[NotActivated] Contact C2: [ONBATT]/[NotActivated] Contact C3: [LOWBATT:47.5Volts]/[NotActivated] Contact C4: [LOWBATT:47.5Volts]/[NotActivated] Contact C5: [TIMER:2.00Hours]/[NotActivated] Contact C6: [TIMER:2.00Hours]/[NotActivated] Program I/P Contact: [Self-test]/[NotActivated]				

Configuration Tab:

The configuration tab displays the EP2200 operating conditions. UPS Parameters, Event Actions, Maintenance, and Transfer Point options allow for the configuration of Advanced Voltage Regulation (AVR) parameters, line qualification, and transfer points.

1. **UPS Parameters** – Describes the physical configuration of the Input and Output voltage and frequency.

The screenshot shows the 'PowerDevice Manager' interface with the 'Configuration' tab selected. On the left, a sidebar contains radio buttons for 'UPS Parameters' (selected), 'Event Actions', 'Maintenance', and 'Transfer Point'. Below these are 'Links' 1 and 2. The main area is divided into two sections: 'Input Configuration' and 'Output Configuration'. 'Input Configuration' shows 'Input Voltage: 120' and 'Input Frequency: 60.0'. 'Output Configuration' shows 'Output Voltage: 120' and 'Output Frequency: 60.0'.

Input Configuration	
Input Voltage:	120
Input Frequency:	60.0

Output Configuration	
Output Voltage:	120
Output Frequency:	60.0

2. **Event Actions** – Please refer to section **Event Notification Configuration**.

The screenshot shows the 'PowerDevice Manager' interface with the 'Configuration' tab selected. On the left, a sidebar contains radio buttons for 'UPS Parameters', 'Event Actions' (selected), 'Maintenance', and 'Transfer Point'. Below these are 'Links' 1, 2, and 3. The main area is titled 'Event' and contains an 'Event Type:' label next to a listbox. The listbox contains the following items: 'Power failure', 'Power restore', 'Battery low', 'Communication lost', 'Communication established', 'Output overload', and 'Output overload solved'. A 'Select' button is located at the bottom right of the listbox.

Event Type:
Power failure
Power restore
Battery low
Communication lost
Communication established
Output overload
Output overload solved

3. **Maintenance** – Describes various options that can be adjusted per user preference. Each option may have additional selections that are listed in the listbox or a textbox that can be used to enter a value. Each textbox has boundaries that will warn the user if the value entered is outside of the boundaries. Click “Apply” to save all changes made in each section.
4. **Line Qualify Options** – Setting to limit the qualification time. Select 3, 10, or 30 second. Default is 30 seconds.
5. **Battery Charger Temp Comp.** - Adjusts the battery charger voltage depending on the battery temperature. Temperature probe must be used with this option. Select -2.5, -3.-, -4.0, -5.0 mV/deg C/Cell. Default is -3.0.
6. **Battery Voltage Low Warning** – Triggers an alarm warning that the battery voltage is getting low. Select from 42.0V to 55.0V in .5V intervals. Default is 47.5V.
7. **External Fan On/Off** - Will turn On or Off the external fan if this limit is exceeded or reduced. Select from 20 – 55 Deg C. Default is 25 C.
8. **Battery Test Options** – Sets the duration of a Battery Self-Test. Select from 1 – 255 minutes. Default is 1 minute. Test may be started or stopped from this option.

9. **Inverter On/Off** – Allows the inverter to be turned On or Off. **NOTE:** Unit must be running “ON BATT” for On/Off functions to work.
10. **Reset The Event/Timer Counters** – Allows user to reset the event and timer counters.
11. **Change Password** – Allows user to change the required maintenance password. The default maintenance password is “1111”.

The screenshot shows the 'PowerDevice Manager' web interface. The top navigation bar includes 'Home', 'Configuration' (selected), 'Log', 'Control', and 'System'. On the left, there are links for 'UPS Parameters', 'Event Actions', 'Maintenance', and 'Transfer Point'. Below these are numbered links 1, 2, and 3. The main configuration area contains several sections:

- Line Qualify Options:** 'Line Qualify' is set to 10 seconds. Buttons: Apply, Cancel.
- Battery Charging Temperature Compensation:** 'Compensation value' is -3.0 mV/Deg C/Cell. Buttons: Apply, Cancel.
- Battery Voltage Low Warning:** 'Enter new value' is 48.0 Volts. Buttons: Apply, Cancel.
- External Fan On/Off By Temperature:** 'Temperature set to' is 25 Deg C. Buttons: Apply, Cancel.
- Battery Test Options:** 'Test period time' is 1 Minutes. 'Test Switch to' has 'On' and 'Off' buttons. Buttons: Apply, Cancel.
- Inverter On/Off:** 'Inverter switch to' has 'On' and 'Off' buttons.
- Reset The Event/Timer Counters:** 'Reset The Counters' has a 'Reset' button.
- Change Password:** Fields for 'Current Password' and 'New Password' (both masked with dots). Buttons: Apply, Cancel.

- **Transfer Point** – Allows user to customize when the selected UPS will transfer to battery power as well as if/when the AVR Buck and Boost features will operate. Each option has a textbox with boundaries that will display if the boundaries are exceeded. **NOTE:** Hyst Points update automatically. Click “Apply” to save all changes.
 - **High Transfer Point Setting** – Sets the upper limit of the Input voltage. UPS will transfer to battery power if High Limit is exceeded. Line must return below the High Hyst Point before the unit will qualify the line. High Gap sets the High Hyst Point automatically. The default is 150V with 5V High Gap.
 - **Buck Transfer Point Setting** – Sets the hysteresis limits of the Buck feature. UPS with Buck voltage over the Buck high Point and will turn off Buck once the Input voltage falls below the Buck Low Point. The default is 130V and 125V respectively.
 - **Boost Transfer Point Setting** – Sets the hysteresis limits of the Boost feature. UPS with Boost voltage under the Boost Low Point and will turn off Boost once the Input voltage rises above the Boost High Point. The default is 102 and 107V respectively.

- **Low Transfer Point Setting** - Sets the lower limit of the Input voltage. UPS will transfer to battery power if Low Limit is exceeded. Line must return above the Low Hyst Point before the unit will qualify the line. Low Gap sets the Low Hyst Point automatically. The default is 90V with 5V High Gap.
- **AVR Feature Setting** – Allows for the use of Buck and Boost to regulate the output voltage during utility line voltage spikes and sags. **NOTE:** If the Buck and Boost features are disabled, the UPS will only operate on Input power between 100V and 130V. If both are enabled, the limits increase from 90V to 150V. Click “Apply” to save all changes.

Log Tab:

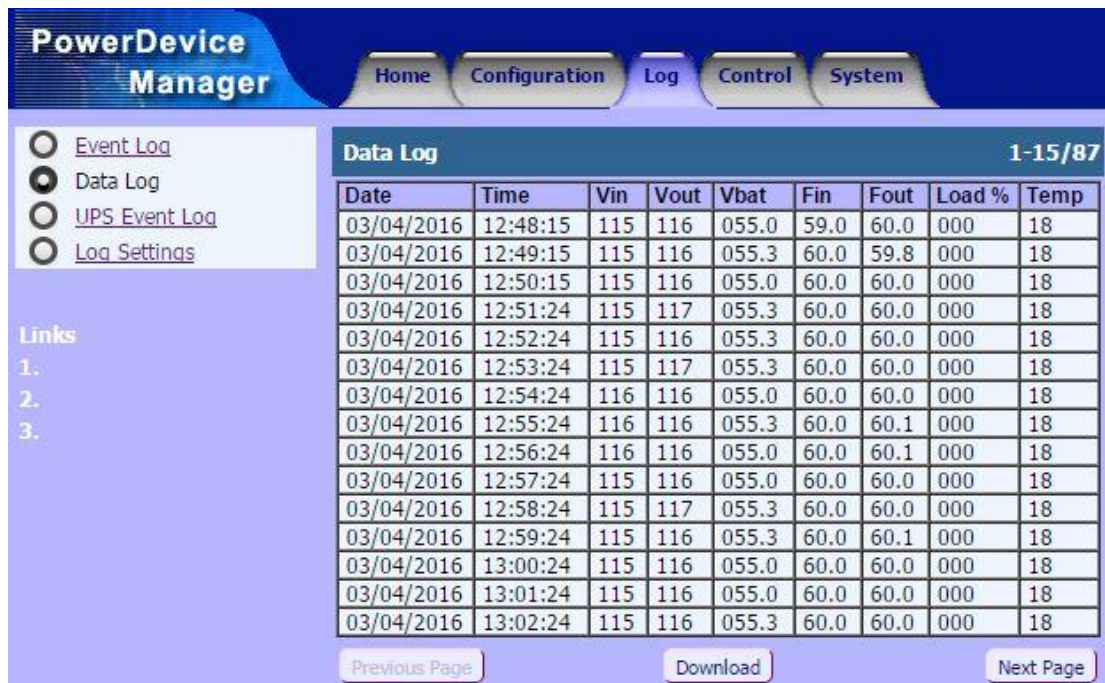
The Log Tab provides UPS event and data logs and settings. Each log may be updated and viewed on the webpage or downloaded and viewed with a text viewer such as Notepad.

- **Event Log** – Used to view operating events of the UPS and network card Event Actions. Use the Previous and Next Page buttons to view on screen. Click the download button to download the “dnpower.log” file.

The screenshot shows the PowerDevice Manager web interface. The top navigation bar includes tabs for Home, Configuration, Log (selected), Control, and System. On the left sidebar, there are links for Event Log (selected), Data Log, UPS Event Log, and Log Settings. Below these are three numbered links (1, 2, 3). The main content area is titled 'Event Log' with a page indicator '1-15/77'. It contains a table with two columns: 'Date' and 'Event'. The table lists 15 events, including output mode changes, Ethernet card service starts, power failure, and power restored. At the bottom of the table are three buttons: 'Previous Page', 'Download', and 'Next Page'.

Date	Event
02/23/2016 14:14:12	Output mode:normal
02/23/2016 14:26:06	Output mode:normal
02/23/2016 14:26:46	Output mode:buck
02/23/2016 14:26:56	Output mode:normal
02/23/2016 14:27:16	Output mode:boost
02/23/2016 14:27:27	Output mode:normal
03/02/2016 07:49:11	Ethernet card Service Started
03/02/2016 07:49:20	Output mode:normal
03/02/2016 08:04:40	Ethernet card Service Started
03/02/2016 08:04:49	Output mode:normal
03/02/2016 09:37:26	Output mode:battery
03/02/2016 09:37:29	Power Failure
03/02/2016 09:37:59	Power Restored
03/02/2016 09:38:06	Output mode:normal
03/02/2016 09:39:43	Test In Progress

- **Data Log** – Provides a log of data at predetermined intervals of various UPS operating conditions. Use the Previous and Next Page buttons to view on screen. Click the download button to download the “dnpower.dat” file.



The screenshot shows the 'PowerDevice Manager' interface with the 'Log' tab selected. On the left, there are links for 'Event Log', 'Data Log' (selected), 'UPS Event Log', and 'Log Settings'. Below these are three numbered links. The main area displays the 'Data Log' for pages 1-15/87. It contains a table with columns: Date, Time, Vin, Vout, Vbat, Fin, Fout, Load %, and Temp. The table lists 15 entries from 03/04/2016 12:48:15 to 13:02:24. At the bottom, there are buttons for 'Previous Page', 'Download', and 'Next Page'.

Date	Time	Vin	Vout	Vbat	Fin	Fout	Load %	Temp
03/04/2016	12:48:15	115	116	055.0	59.0	60.0	000	18
03/04/2016	12:49:15	115	116	055.3	60.0	59.8	000	18
03/04/2016	12:50:15	115	116	055.0	60.0	60.0	000	18
03/04/2016	12:51:24	115	117	055.3	60.0	60.0	000	18
03/04/2016	12:52:24	115	116	055.3	60.0	60.0	000	18
03/04/2016	12:53:24	115	117	055.3	60.0	60.0	000	18
03/04/2016	12:54:24	116	116	055.0	60.0	60.0	000	18
03/04/2016	12:55:24	116	116	055.3	60.0	60.1	000	18
03/04/2016	12:56:24	116	116	055.0	60.0	60.1	000	18
03/04/2016	12:57:24	115	116	055.0	60.0	60.0	000	18
03/04/2016	12:58:24	115	117	055.3	60.0	60.0	000	18
03/04/2016	12:59:24	115	116	055.3	60.0	60.1	000	18
03/04/2016	13:00:24	115	116	055.0	60.0	60.0	000	18
03/04/2016	13:01:24	115	116	055.0	60.0	60.0	000	18
03/04/2016	13:02:24	115	116	055.3	60.0	60.0	000	18

- **UPS Event Log** – Provides a log of data at times of events listed under the “status” column. Provides extended UPS data. Click the “Update” button to update the log file. Click “View” to view the extended UPS data.



The screenshot shows the 'PowerDevice Manager' interface with the 'Log' tab selected. On the left, there are links for 'Event Log', 'Data Log', 'UPS Event Log' (selected), and 'Log Settings'. Below these are three numbered links. The main area displays the 'Display Event Logs' section with a list of event ranges from #001 to #600. Each range has a 'View' button and an 'Update' button. Below this is the 'UPS Event Log' for pages 91-94/94. It contains a table with columns: Date, Time, Vin, Vout, Fin, Pout, Vbat, Tbat, Ths, Vds1, Vds2, AVR, and Status. The table lists 4 entries from 03/03/16 07:02:38 to 03/04/16 07:24:56. At the bottom, there are buttons for 'Previous Page' and 'Next Page'.

Date	Time	Vin	Vout	Fin	Pout	Vbat	Tbat	Ths	Vds1	Vds2	AVR	Status
03/03/16	07:02:38	115	000	060	0000	50.3	+17	+17	000	000		[ON_LINE_Normal]
03/03/16	15:41:54	000	122	000	0000	53.9	+18	+31	012	010		[Black_Out] [ON_BATT]
03/04/16	07:24:50	115	000	059	0000	31.9	+18	+17	000	000		[Batt_Not_Connect]
03/04/16	07:24:56	115	000	060	0000	48.9	+18	+17	000	000		[ON_LINE_Normal]

- **Log Settings** – Provides file length limits and data recording interval. If file limit is exceeded, the oldest records will be removed automatically. Click “Apply” to save all changes that are made.

Control Tab:

The control tab allows for the initialization of a Battery Self-Test and configuration of the relay contacts.

- **Control UPS** – Initial a Battery Self-Test. Webpage is updated every 3 seconds to provide current Testing Results. Self-Test will run until the time specified under the Battery Test Options in the Maintenance section.

- **Contacts** – Allows the user to configure each of the 6 relays present on the UPS. Each of the **NO** relays (Normally Open) can be edited to close if the function of that relay is met. User may choose from “On Battery, Low Battery, Timer, Alarm, Fault, and Disable”. **The Program I/P contact** can be used as an input to trigger an external alarm. The user may choose from “Self Test, External Alarm, Ext. Battery Alarm, Ext. Fan Alarm, and Door Interlock”. Click “Apply” to save all changes.

System Tab:

The System Tab allows for the configuration of the User Account, Date and Time, Network, User Links, and allow for Firmware Upgrades to the network card.

- **User** – Allows the user to change the password of the account. Click “Apply” to save all changes.

The screenshot shows the 'PowerDevice Manager' interface with the 'System' tab selected. On the left, a sidebar lists 'User', 'Date and Time', 'Network', 'User Links', and 'Firmware Upgrade'. The 'User' option is selected. The main content area is titled 'Login User and Password Change'. It contains three input fields: 'User Name:' with the value 'admin', 'New Password:', and 'Retype New Password:'. At the bottom right are 'Apply' and 'Cancel' buttons.

- **Date and Time** – Configures the Date and Time of the UPS. Date is listed by month, day, and year. Time is listed in Military Standard. Adjust the Time Zone as required. An SNTP server IP address may be entered to Auto Adjust the time. Refer to the local network administrator for SNTP IP address. Click “Apply” to save all changes.

The screenshot shows the 'PowerDevice Manager' interface with the 'System' tab selected. On the left, a sidebar lists 'User', 'Date and Time', 'Network', 'User Links', and 'Firmware Upgrade'. The 'Date and Time' option is selected. The main content area is titled 'Date and Time Setting'. It contains several input fields: 'Date:' with dropdowns for month (3), day (4), and year (2016); 'Time:' with dropdowns for hour (14), minute (52), and second (17); 'Time Zone:' with a dropdown set to -5; and three input fields for 'SNTP Server 1:', 'SNTP Server 2:', and 'SNTP Server 3:'. At the bottom right are 'Auto Adjust', 'Apply', and 'Cancel' buttons.

- **Network** – Configures the network card settings including the SMTP email server. Please refer to section **E-mail Notification and SMTP Server Configuration**.
- **User Links** – Provides the user with an area of links that may be useful. Links will appear in the “Links” list on the left side of the webpage. Enter the URL of the desired link and add a description if necessary. Click “Apply” to save all changes.

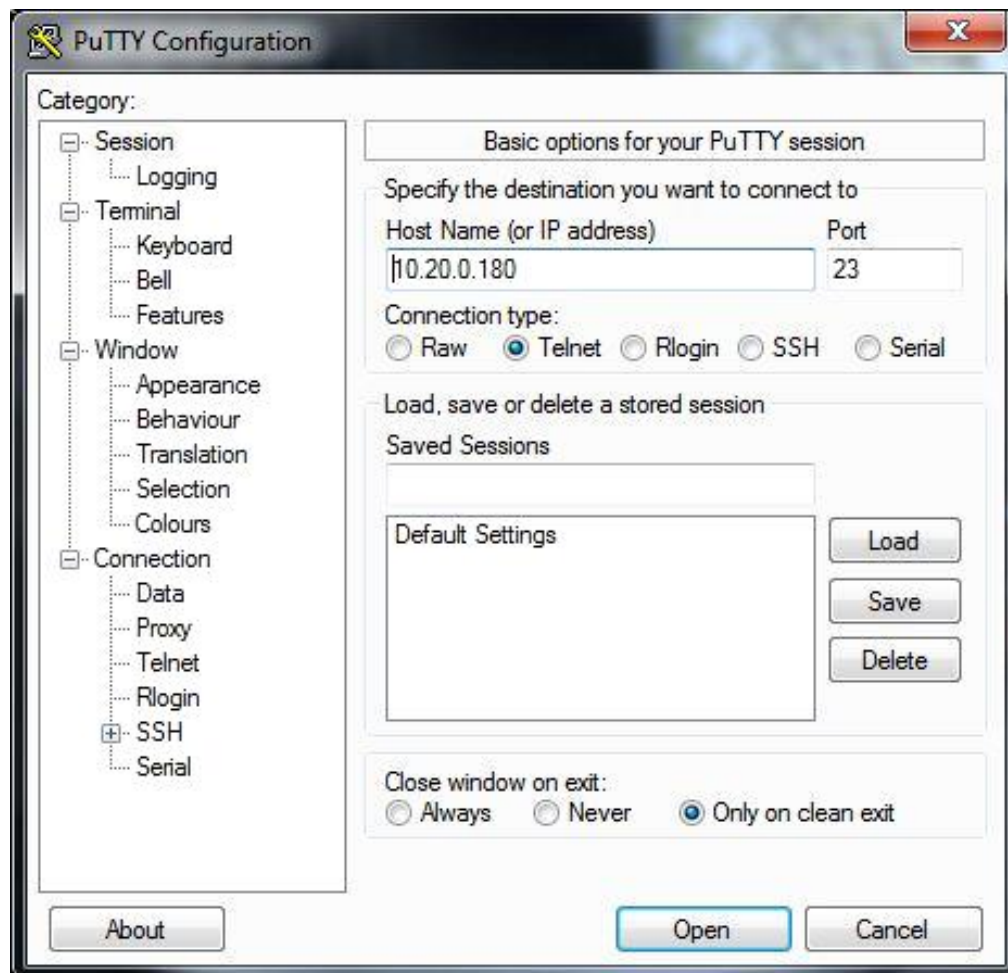
The screenshot shows the 'PowerDevice Manager' interface with the 'System' tab selected. On the left, a sidebar lists 'User', 'Date and Time', 'Network', 'User Links', and 'Firmware Upgrade'. The 'User Links' option is selected. The main content area is titled 'User Link 1', 'User Link 2', and 'User Link 3'. Each link has two input fields: 'URL(http://):' and 'Description:'. At the bottom right are 'Apply' and 'Cancel' buttons.

- **Firmware Upgrade** – Allows for the firmware upgrade of the network card. Additional firmware upgrade to include improvements to the network may be required and can be done so by the user. Contact Multilink for questions regarding firmware upgrade.

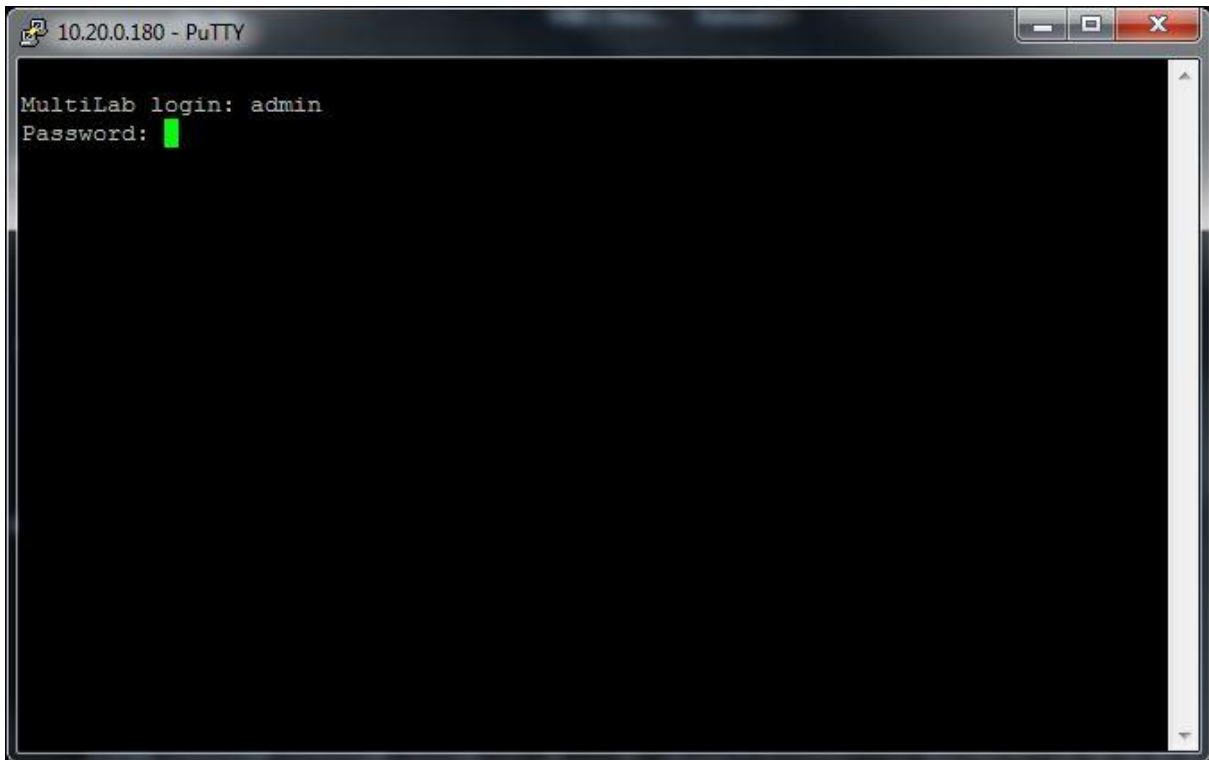
5. Telnet Email and Trap Configuration:

In this section, another optional method of E-mail configuration is explained. Trap configuration will also be explained. Telnet is a feature that can be used to issue text-based commands and allow configuration of the EP2200 network card and UPS operating conditions. The following instructions walk through establishing a connection and modifying E-mail, Trap, and UPS operating conditions.

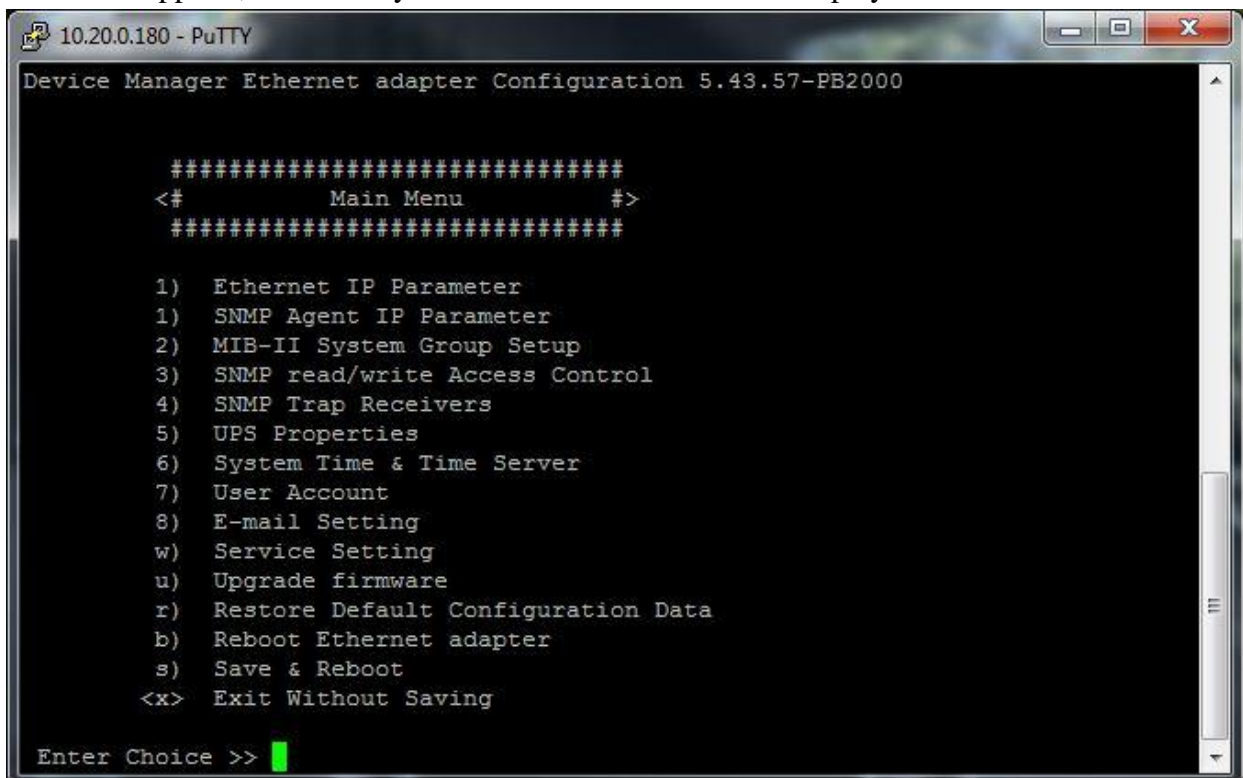
1. Begin by verifying the Ethernet connection is present on the network card of the EP2200. The Ethernet Port is used to allow Telnet access over the network connection. PuTTY is an SSH/Telnet client that may be used to create a “session” over the network connection. This session allows for configuration of the network card and various UPS operating conditions.
2. Open PuTTY. Select the ‘Telnet’ connection type and enter the IP address of the UPS into the destination textbox. Port 23 is required to use Telnet.



3. Click “Open” and PuTTY will attempt to connect to the network card of the UPS. A command prompt window will open and a request for login information will appear.



4. If the user account of the UPS was previously changed, enter the user login ID and Password, otherwise the factory user name is **root** and the password is **synso**. Alternatively, both the user name and password may be **dnpower**. **NOTE:** The Password will not appear when entering for security purposes. If the correct user information was applied, the menu system of the network card will display.



5. In the main menu, there are many options that will allow for configuration of the network card's network settings, SNMP Trap settings, and various options listed. In this example, SNMP access and Trap receivers will be configured. To allow SNMP access, select "3 - SNMP Access Control Setup Menu".

```
10.20.0.180 - PuTTY

Device Manager Ethernet adapter Configuration 5.43.57-PB2000

SNMP Access Control Setup Menu

Community name      IP address      Access
#1 public           0.0.0.0         read/write
#2
#3
#4

1) Set Access Control #1
2) Set Access Control #2
3) Set Access Control #3
4) Set Access Control #4
<0> Return to previous menu

Enter Choice >> █
```

6. To change the Access Control of group #1, enter "1" and a sub menu will display the attributes to change the community name, IP address, and the level of access allowed for that specific group. Choose the respective number to change the attribute. Enter "0" to return to the previous menu. For this example, the community string is "public", the IP address is "0.0.0.0" to allow access for anyone on the network, and "Read/Write" access is granted.

```
10.20.0.180 - PuTTY

Device Manager Ethernet adapter Configuration 5.43.57-PB2000

SNMP Access Control Setup Menu

Community name      IP address      Access
#1 public           0.0.0.0         read/write
#2
#3
#4

1) Access Control #1

1) Community name
2) IP address (0.0.0.0 for Anyone)
3) Access
4) Delete the entry
<0> Return to previous menu

Enter Choice >> █
```

7. Return to the main menu by entering “0” and select “4 - SNMP Trap Receivers”. This menu will allow the configuration of the network’s trap receiver (i.e. the computer that will receive trap notifications). If this information is not known, contact the network administrator.

```
10.20.0.180 - PuTTY

Device Manager Ethernet adapter Configuration 5.43.57-PB2000

SNMP Trap Receiver Setup Menu

IP address      Community      Severity      Generation
#1 10.20.4.110   public        any           Enabled
#2              public        any           Enabled
#3              public        any           Enabled
#4              public        any           Enabled

1) Set trap receiver #1
2) Set trap receiver #2
3) Set trap receiver #3
4) Set trap receiver #4
<0> Return to previous menu

Enter Choice >> █
```

8. Enter “1” to enter the trap receiver information. Choose the respective number to change the attribute. Enter “0” to return to the previous menu. For this example, the receiver’s IP address is “10.20.4.110”, the community string is “public”, the Severity of the trap is set to “Any”, and Trap generation is “enabled”.

```
10.20.0.180 - PuTTY

Device Manager Ethernet adapter Configuration 5.43.57-PB2000

SNMP Trap Receiver Setup Menu

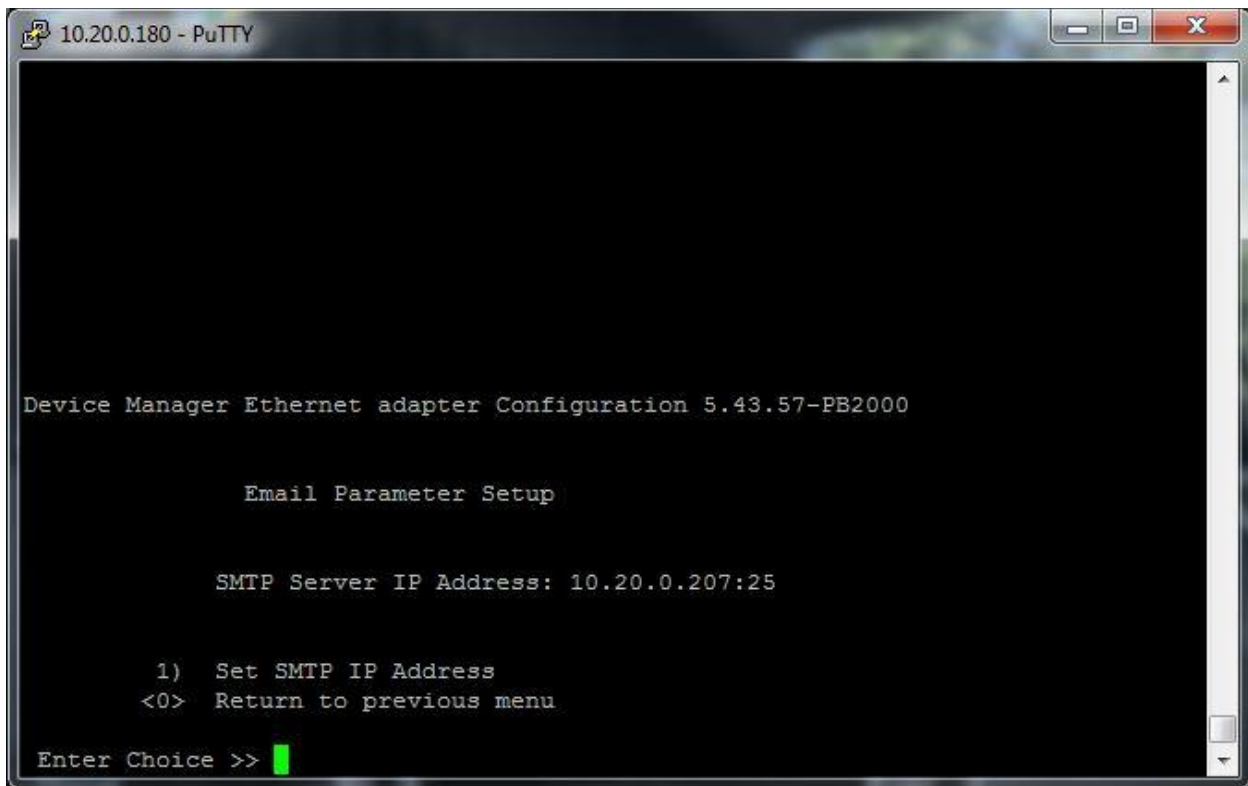
IP address      Community      Severity      Generation
#1 10.20.4.110   public        any           Enabled
#2              public        any           Enabled
#3              public        any           Enabled
#4              public        any           Enabled

1) Set trap receiver #1

    1) Trap receiver IP address.
    2) Trap community name.
    3) Trap severity level.
    4) Trap generation.
    <0> Return to previous menu

Enter Choice >> █
```

9. Return to the main menu by entering “0” and select “8 - E-mail Setting”. This option allows for SMTP configuration. Enter “1” to configure the IP address of the SMTP server. Enter “0” to return to the previous menu.



A screenshot of a PuTTY terminal window titled "10.20.0.180 - PuTTY". The terminal displays the "Device Manager Ethernet adapter Configuration 5.43.57-PB2000" menu. The "Email Parameter Setup" option is selected. The "SMTP Server IP Address" is set to "10.20.0.207:25". The menu lists two options: "1) Set SMTP IP Address" and "<0> Return to previous menu". The prompt "Enter Choice >>" is at the bottom with a green cursor.

```
10.20.0.180 - PuTTY

Device Manager Ethernet adapter Configuration 5.43.57-PB2000

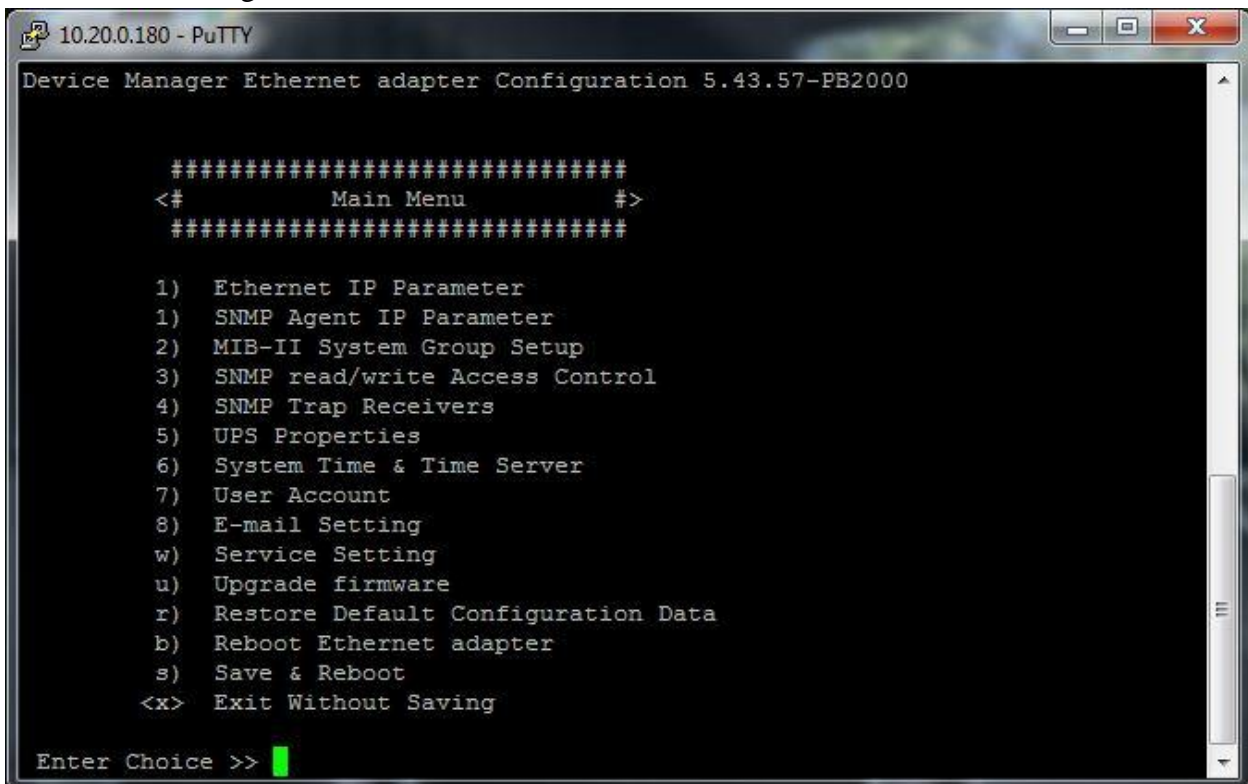
      Email Parameter Setup

      SMTP Server IP Address: 10.20.0.207:25

      1) Set SMTP IP Address
      <0> Return to previous menu

Enter Choice >> █
```

10. Return to the main menu by entering “0”. If any additional changes are to be made to the options listed, do so now before continuing.



A screenshot of a PuTTY terminal window titled "10.20.0.180 - PuTTY". The terminal displays the "Device Manager Ethernet adapter Configuration 5.43.57-PB2000" menu. The "Main Menu" is shown, listing various configuration options. The prompt "Enter Choice >>" is at the bottom with a green cursor.

```
10.20.0.180 - PuTTY

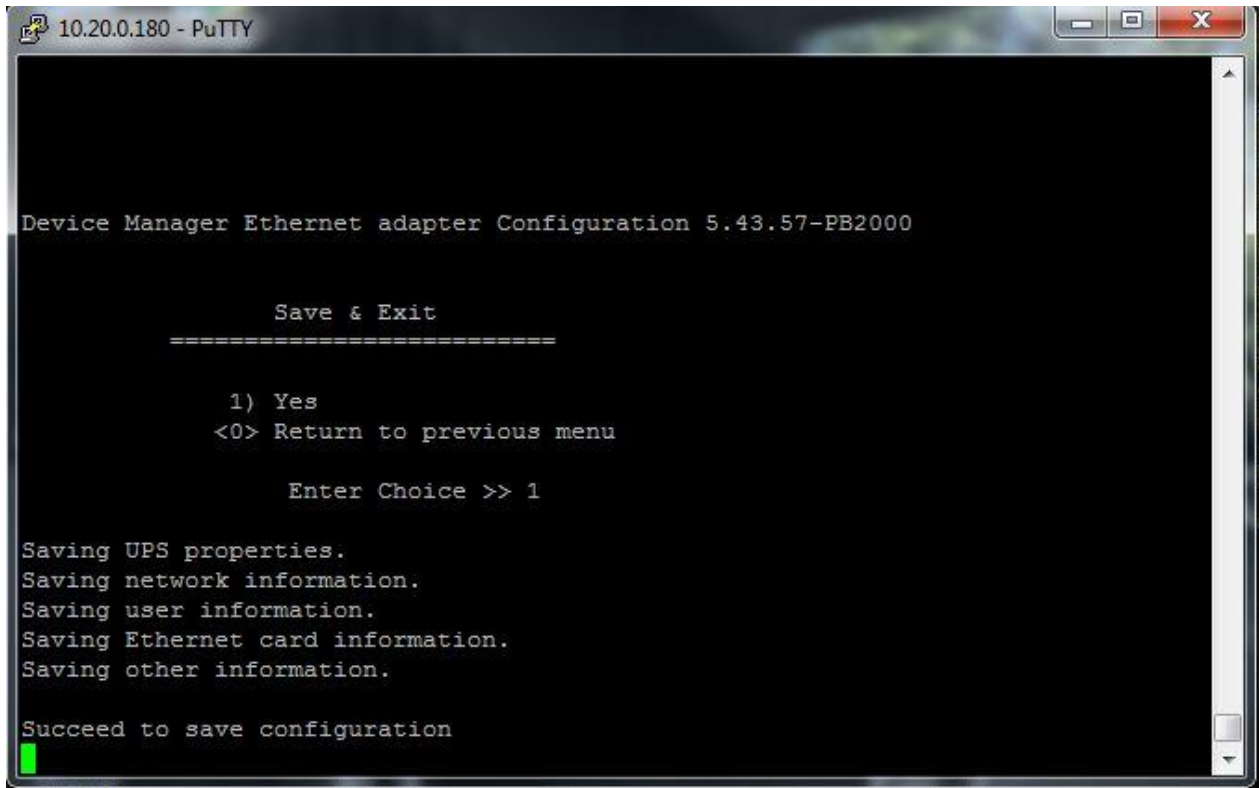
Device Manager Ethernet adapter Configuration 5.43.57-PB2000

#####
<#      Main Menu      #>
#####

      1) Ethernet IP Parameter
      1) SNMP Agent IP Parameter
      2) MIB-II System Group Setup
      3) SNMP read/write Access Control
      4) SNMP Trap Receivers
      5) UPS Properties
      6) System Time & Time Server
      7) User Account
      8) E-mail Setting
      w) Service Setting
      u) Upgrade firmware
      r) Restore Default Configuration Data
      b) Reboot Ethernet adapter
      s) Save & Reboot
      <x> Exit Without Saving

Enter Choice >> █
```

11. Return to the main menu by entering “0” and select “s – Save and Reboot”. If any changes have been made, all changes must be saved prior to exiting the Telnet session. If no changes have been made, select “Exit Without Saving”. In this example, “Save and Reboot” was selected.



```
10.20.0.180 - PuTTY

Device Manager Ethernet adapter Configuration 5.43.57-PB2000

      Save & Exit
=====

      1) Yes
      <0> Return to previous menu

      Enter Choice >> 1

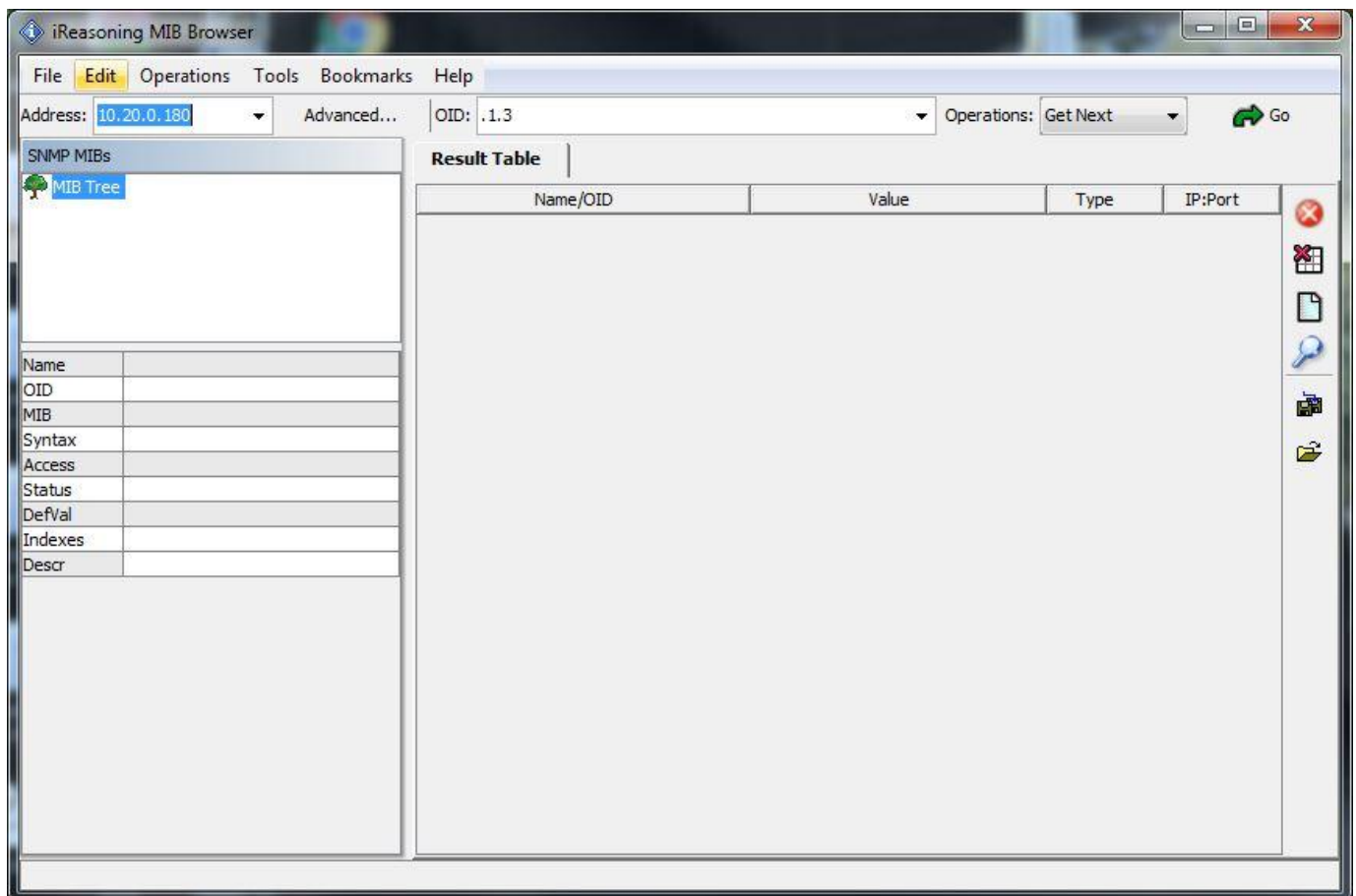
Saving UPS properties.
Saving network information.
Saving user information.
Saving Ethernet card information.
Saving other information.

Succeed to save configuration
```

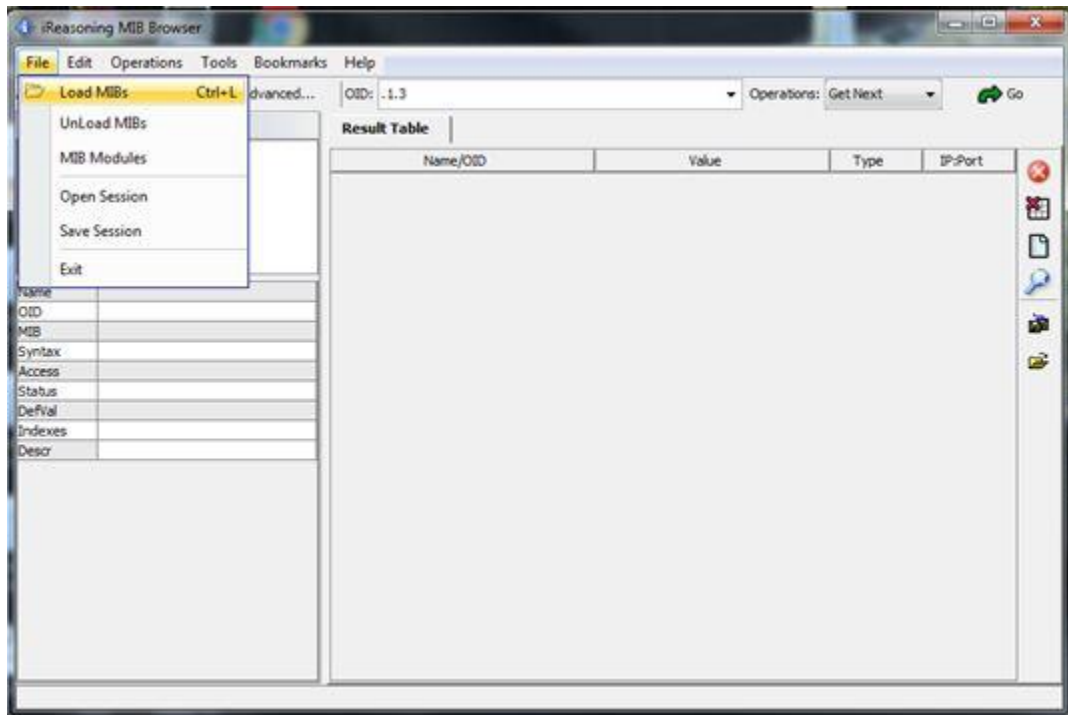

6. SNMP MIB Browsing and Configuration:

In this section, use of a MIB Browser to view the configuration and operating conditions of the EP2200 are described. A MIB browser uses SNMP commands along with necessary management information base (MIBs) files and access to allow for observation and control of the UPS. MIBs may also be used in Network Management Software packages to monitor several UPS' at once. The following instructions walk through configuring a MIB Browser to allow for observation of the UPS and performing SNMP commands to access or alter the operating conditions of the EP2200. Please obtain MIB files from Multilink prior to continuing with MIB Browser configuration.

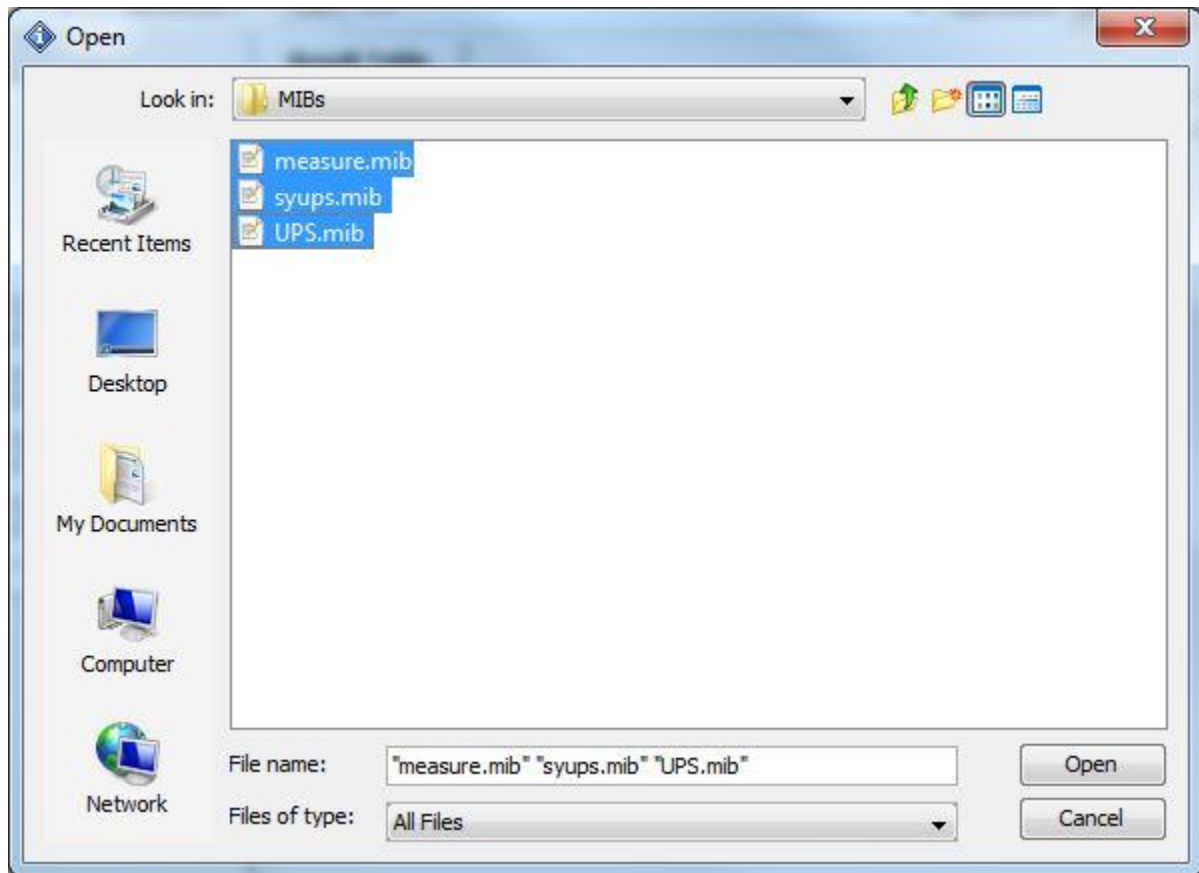
1. Begin by verifying the Ethernet connection is present on the network card of the EP2200. The Ethernet Port is used to allow SNMP access over the network connection. Open the iReasoning MIB Browser.



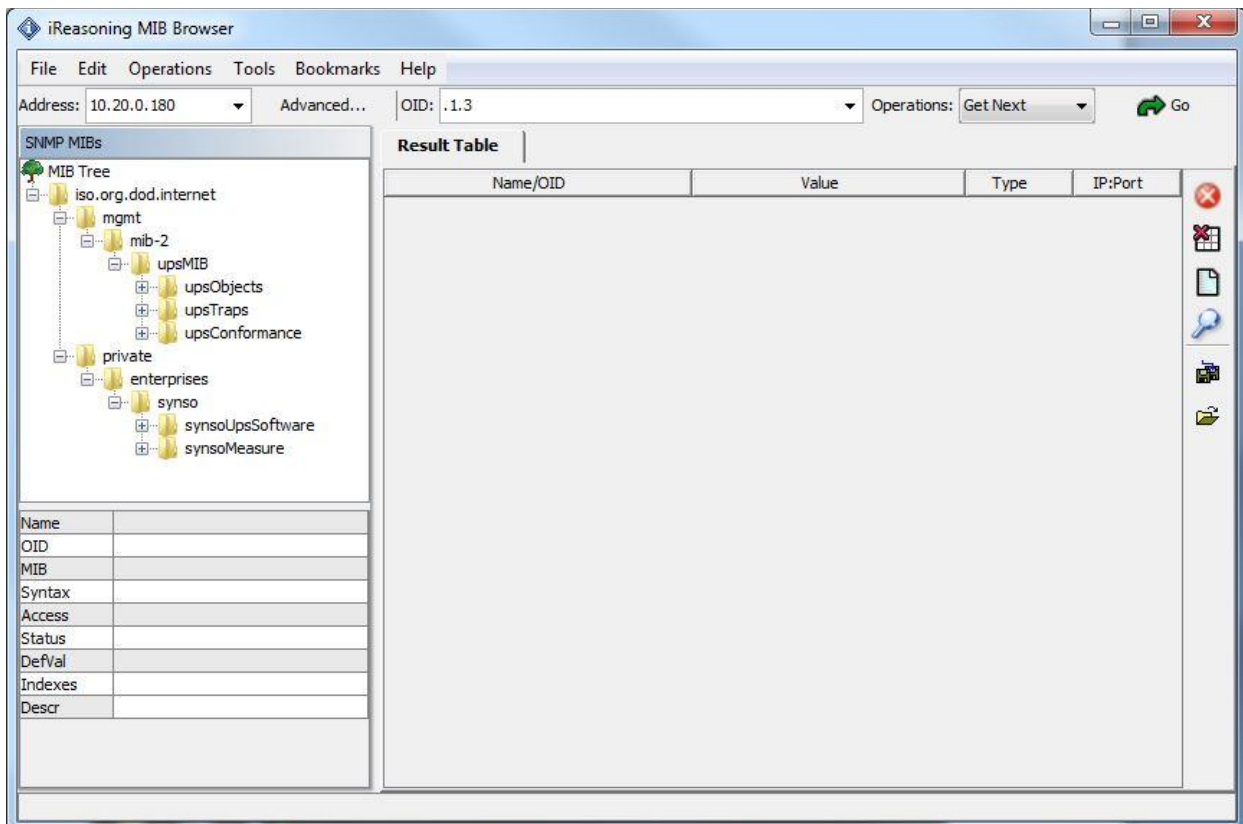
2. Click “File” and then click “Load MIBs”.



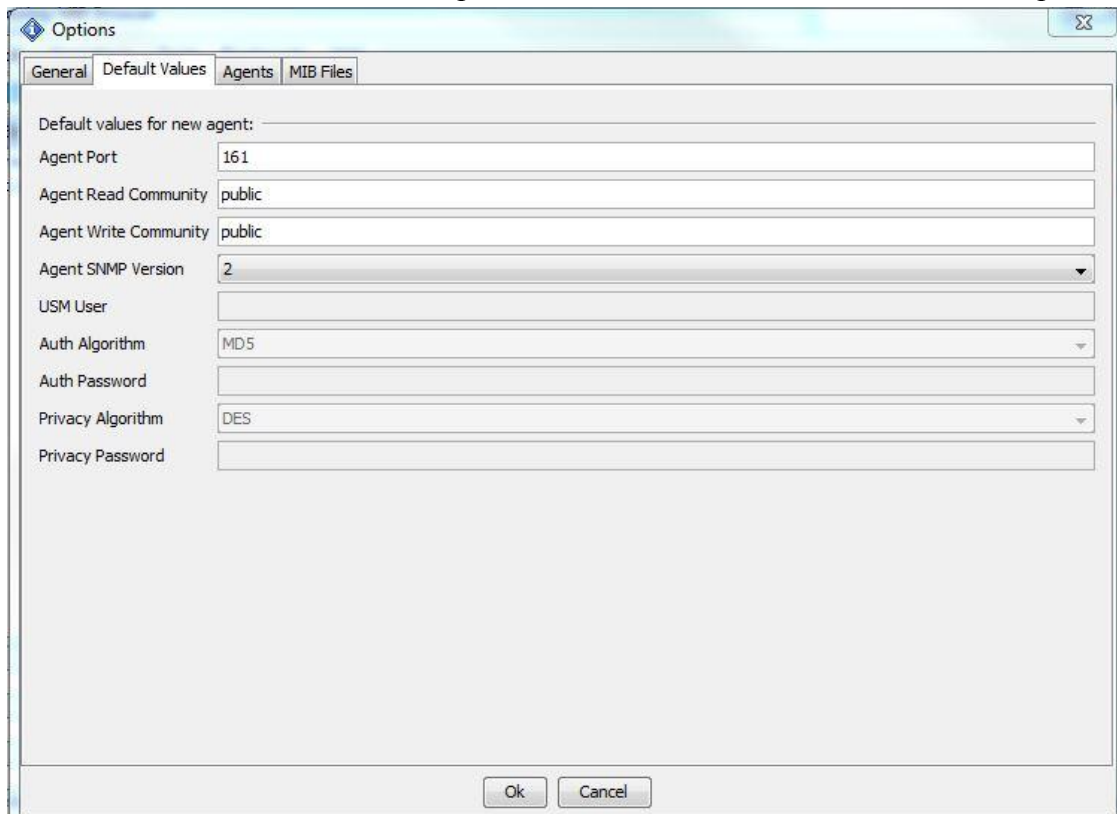
3. A prompt will open and will ask for the MIB files required to connect to the EP2200. Enter the folder where the MIB files have been saved and select all 3 files while holding the “shift” key. Click “Open” to load the files.



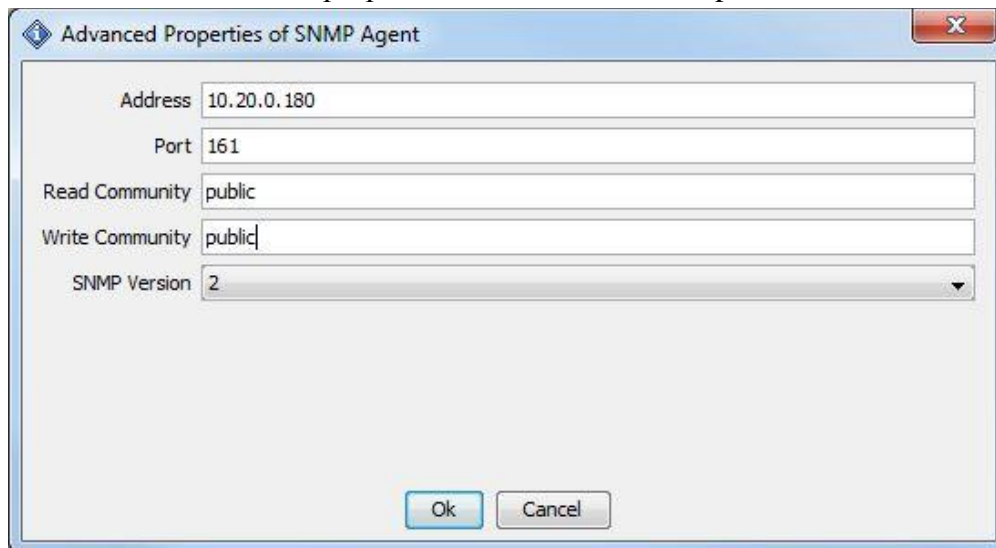
4. In the “SNMP MIBs” Window, a hierarchy of folders shall appear. The objects contained in these folders are the operating variables of the EP2200. To access these objects, enter the IP address of the UPS and click “Go”.



5. If the connection was made, all folders will display. If the connection times out, click “Tool” then click “Options”. Verify the Default Values for a new agent under the “Default Values” tab. Configure the settings for “Agent Read and Write communities” to “public”. Select “2” for the SNMP Version as pictured below.



- Click “Agents”. Verify that the IP Address of the UPS is listed in the list with the Port, Version, Read Community and Write Community fields filled out. If not, click “Add” and add the UPS IP address as pictured below. Click “OK” to save the properties. **NOTE:** IP address pictured below will differ.



Advanced Properties of SNMP Agent

Address: 10.20.0.180

Port: 161

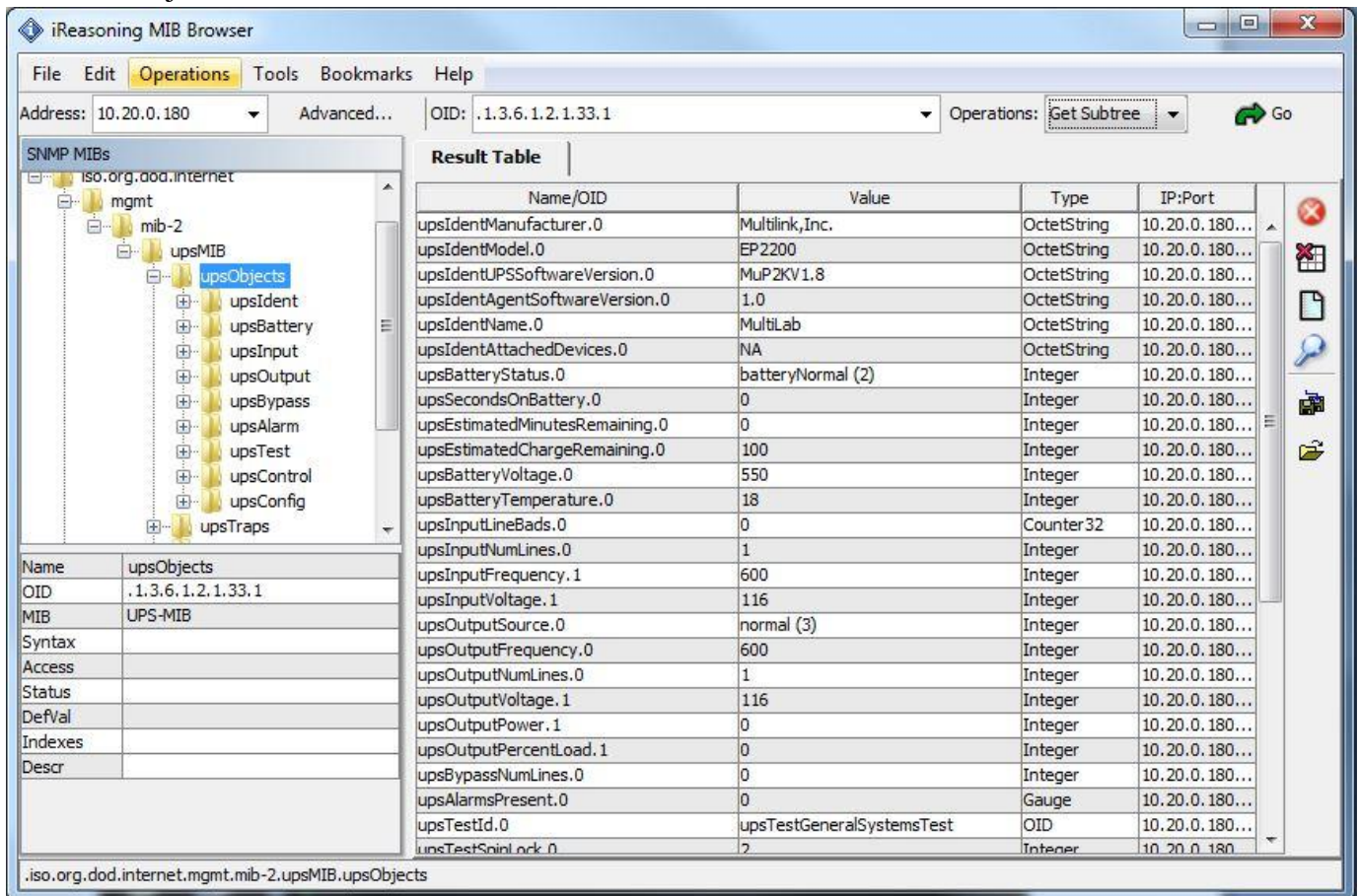
Read Community: public

Write Community: public

SNMP Version: 2

Ok Cancel

- Click “OK” to exit the “Options” menu and click “Go” to test the connections again. SNMP Operations shall now be available. Scroll through the folder system and select the “upsObjects” folder. In the “Operations” listbox, select “Get Subtree”. Various results shall display in the “Result Table”. These values display the operating conditions and settings of the UPS. The “Get Bulk” command may also be used to retrieve 10 objects at a time.



iReasoning MIB Browser

File Edit **Operations** Tools Bookmarks Help

Address: 10.20.0.180 Advanced... OID: .1.3.6.1.2.1.33.1 Operations: Get Subtree Go

SNMP MIBs

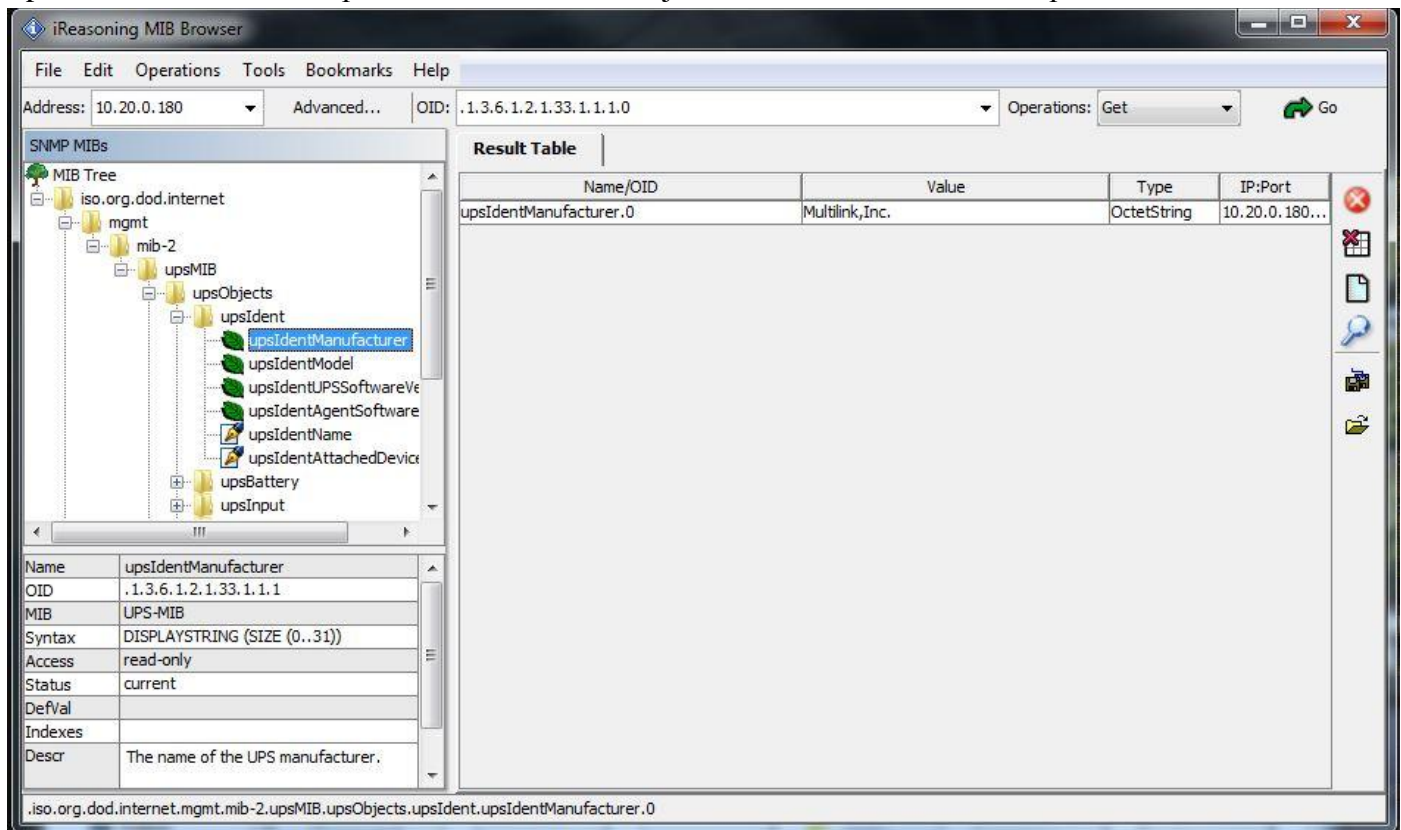
- iso.org.dod.internet
 - mgmt
 - mib-2
 - upsMIB
 - upsObjects**
 - upsIdent
 - upsBattery
 - upsInput
 - upsOutput
 - upsBypass
 - upsAlarm
 - upsTest
 - upsControl
 - upsConfig
 - upsTraps

Result Table

Name/OID	Value	Type	IP:Port
upsIdentManufacturer.0	Multilink, Inc.	OctetString	10.20.0.180...
upsIdentModel.0	EP2200	OctetString	10.20.0.180...
upsIdentUPSSoftwareVersion.0	MuP2KV1.8	OctetString	10.20.0.180...
upsIdentAgentSoftwareVersion.0	1.0	OctetString	10.20.0.180...
upsIdentName.0	MuTiLab	OctetString	10.20.0.180...
upsIdentAttachedDevices.0	NA	OctetString	10.20.0.180...
upsBatteryStatus.0	batteryNormal (2)	Integer	10.20.0.180...
upsSecondsOnBattery.0	0	Integer	10.20.0.180...
upsEstimatedMinutesRemaining.0	0	Integer	10.20.0.180...
upsEstimatedChargeRemaining.0	100	Integer	10.20.0.180...
upsBatteryVoltage.0	550	Integer	10.20.0.180...
upsBatteryTemperature.0	18	Integer	10.20.0.180...
upsInputLineBads.0	0	Counter32	10.20.0.180...
upsInputNumLines.0	1	Integer	10.20.0.180...
upsInputFrequency.1	600	Integer	10.20.0.180...
upsInputVoltage.1	116	Integer	10.20.0.180...
upsOutputSource.0	normal (3)	Integer	10.20.0.180...
upsOutputFrequency.0	600	Integer	10.20.0.180...
upsOutputNumLines.0	1	Integer	10.20.0.180...
upsOutputVoltage.1	116	Integer	10.20.0.180...
upsOutputPower.1	0	Integer	10.20.0.180...
upsOutputPercentLoad.1	0	Integer	10.20.0.180...
upsBypassNumLines.0	0	Integer	10.20.0.180...
upsAlarmsPresent.0	0	Gauge	10.20.0.180...
upsTestId.0	upsTestGeneralSystemsTest	OID	10.20.0.180...
upsTestSnmpLock.0	2	Integer	10.20.0.180...

iso.org.dod.internet.mgmt.mib-2.upsMIB.upsObjects

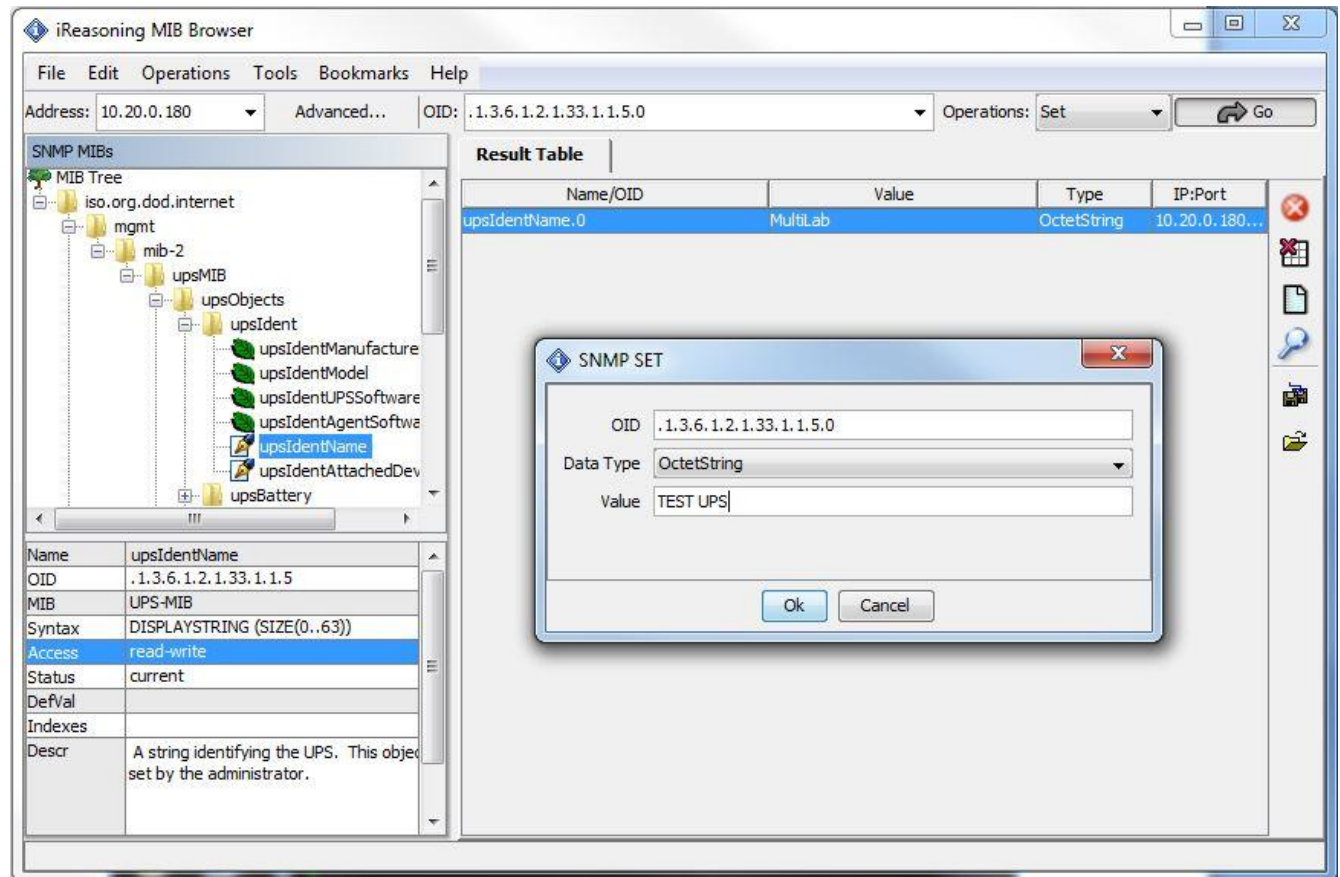
8. If a single object is requested, click on the “clear table” object in the right toolbox (second button down) to clear the “Result Table”. Select the object in the “upsObjects” folder and use the “Get” Command in the Operations listbox. The “upsIdentManufacturer” object was selected for the example below.



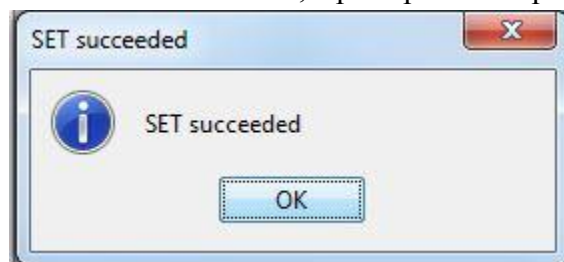
9. Double click the “Name/OID” of any of the objects listed to observe attributes about that object, listed in the lower, left table below the folder hierarchy. The description field describes the object and lists any limitations and access control constraints, if applicable. **TIP:** if a “leaf” is displayed next to an object, that object can only be “read” with the “Get” series of commands. If a “pen” is displayed next to an object, that object can be “read and written” with the “Get” and “Set” commands.

Name	upsIdentManufacturer
OID	.1.3.6.1.2.1.33.1.1.1
MIB	UPS-MIB
Syntax	DISPLAYSTRING (SIZE (0..31))
Access	read-only
Status	current
DefVal	
Indexes	
Descr	The name of the UPS manufacturer.

10. The “Set” Operation can be used to change the object(s) attributes. As an example, the “upsIdentName” object can be changed through the MIB Browser using the ‘Set’ command. Double click on the “upsIdentName” object and then select the “Set” Operation to change the name of the UPS. A display will prompt for a new name. Enter the name in the value field and click “OK”.



11. If the value meets the criteria listed in the “value” field, a prompt will display with “Set succeeded”.



12. Double click on the “upsIdentName” object in the folder hierarchy window and the new name will now appear for the UPS. **NOTE:** The previous value will be displayed first and the new value will be displayed second. In this example, the previous name of the UPS was “MultiLab”. After the “Set” operation succeeded, the new name of the UPS is “TestUPS”

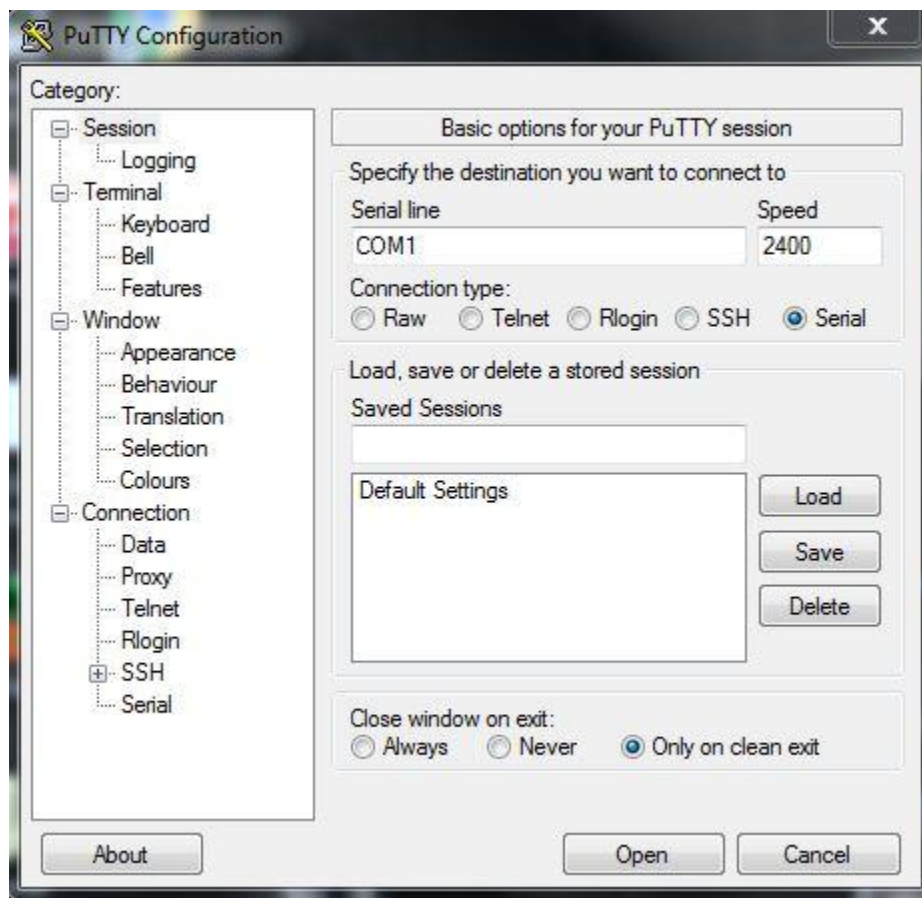
Result Table	
Name/OID	Value
upsIdentName.0	MultiLab
upsIdentName.0	TestUPS

Explore the folder hierarchy and read the description of each object listed to further expand on the SNMP capabilities of the EP2200. **NOTE:** some objects that are “read/write” may not be changed using the “Set” command.

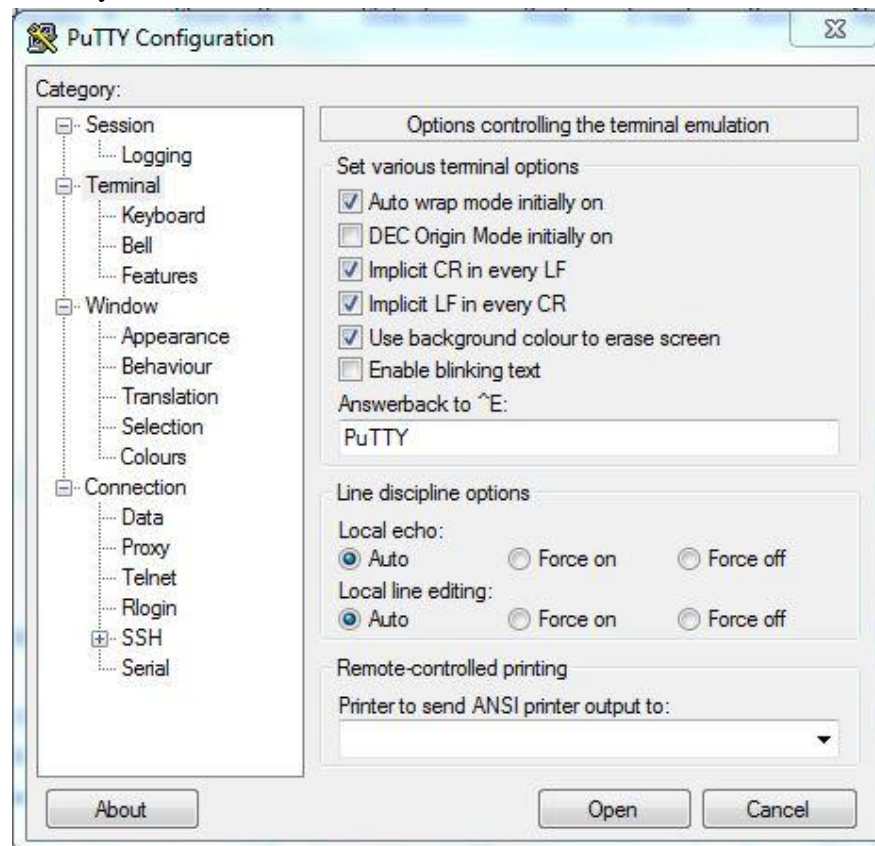
7.) Serial Interface Connection(s) and Configuration:

The EP2200 provides a RS-232 Serial Interface Bus that provides local maintenance and monitoring capabilities. With 2 connections offered, USB and DB9, both provide a full featured menu system for configuration of the EP2200's operating parameters. View the current operating conditions, configure relays and line and battery conditions, transfer points, and perform local battery self-test all from the serial connection(s). To connect and view the operating menu, use of PuTTY will be required. **NOTE:** The Serial bus and Ethernet bus share the same data bus. In order to use this connection, please remove the Ethernet connection, if in use, prior to using the Serial connection.

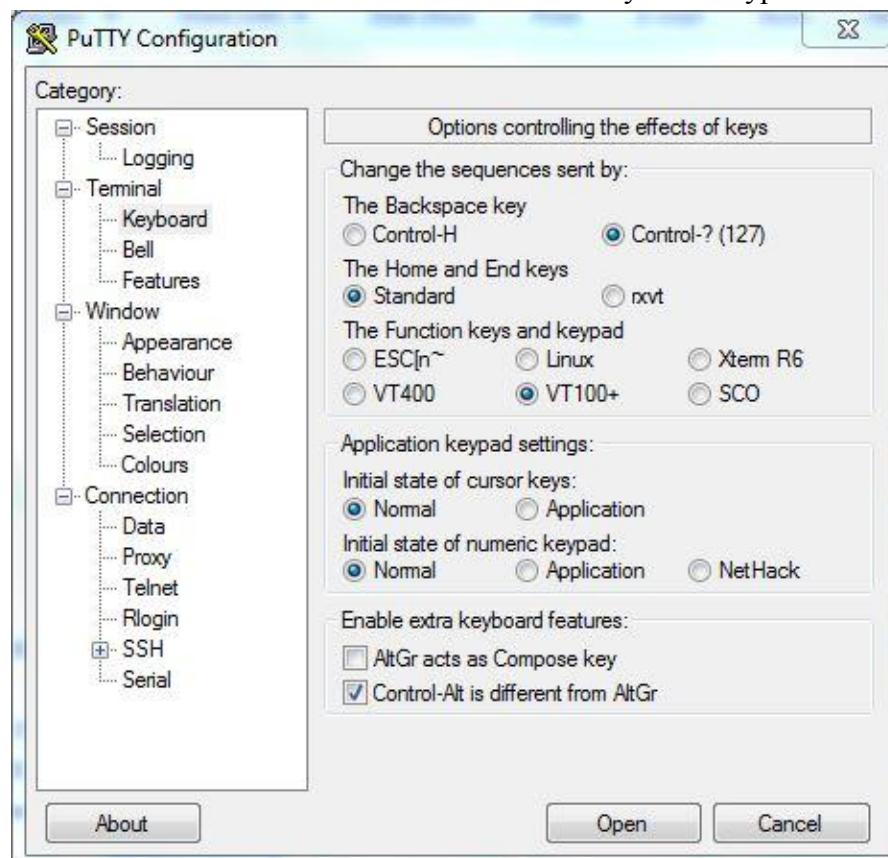
1. Connect a USB cable to the USB port of the EP2200. Connect the other end to the local PC. Open PuTTY and select "Serial" connection. Enter the COM port in the "Serial Line" textbox. Enter a Speed of 2400 in the "Speed" textbox. **NOTE:** If the COM port is unknown, open the Device Manager to verify which COM port has been assigned to the serial connection.



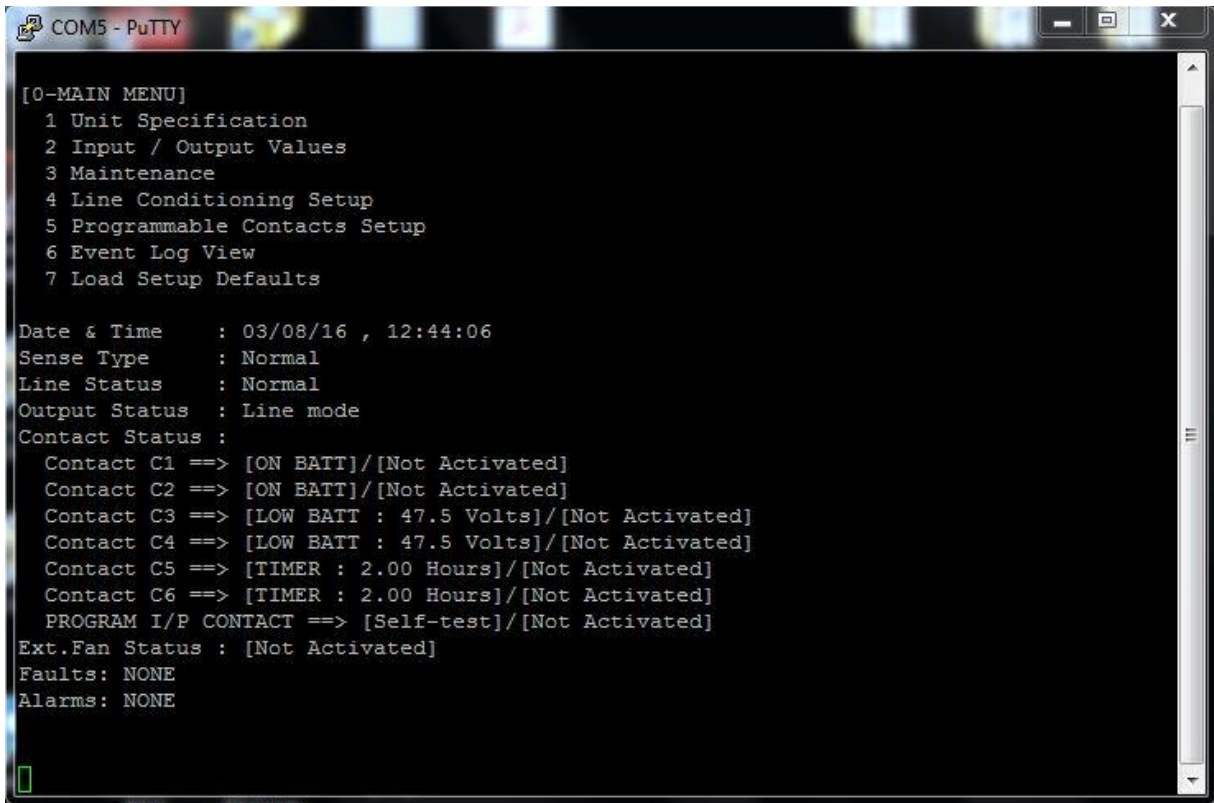
- Click on the “Terminal” Tab and verify that the following checkboxes have been checked. Check those that have not been automatically checked.



- Click on “Keyboard” and select “VT100+” under “The Function keys and keypad” section.



4. Click the “Open” button and PuTTY will attempt to open the Serial connection. A command prompt window will display and appear blank. Hit the “Enter” key and verify that the Main Menu for the EP2200 displays.



```
COM5 - PuTTY

[0-MAIN MENU]
 1 Unit Specification
 2 Input / Output Values
 3 Maintenance
 4 Line Conditioning Setup
 5 Programmable Contacts Setup
 6 Event Log View
 7 Load Setup Defaults

Date & Time      : 03/08/16 , 12:44:06
Sense Type       : Normal
Line Status      : Normal
Output Status    : Line mode
Contact Status   :
Contact C1 ==> [ON BATT]/[Not Activated]
Contact C2 ==> [ON BATT]/[Not Activated]
Contact C3 ==> [LOW BATT : 47.5 Volts]/[Not Activated]
Contact C4 ==> [LOW BATT : 47.5 Volts]/[Not Activated]
Contact C5 ==> [TIMER : 2.00 Hours]/[Not Activated]
Contact C6 ==> [TIMER : 2.00 Hours]/[Not Activated]
PROGRAM I/P CONTACT ==> [Self-test]/[Not Activated]
Ext.Fan Status   : [Not Activated]
Faults: NONE
Alarms: NONE
```

5. From this menu, use the number next to the option listed to select and the submenu will appear for that particular menu. For an extensive listing of all menus available, please see section **2.3.4 Menu Tree and RS232/USB Sub Menu** in the EP2200 User Manual.

8. Troubleshooting Connection and Network Card:

The majority of the issues seen during configuration of the network card or UPS settings occur when the changes made have not been applied. When making any changes using the Web Interface, be sure to click “Apply” before navigating away from the current page. It may also be necessary to power down the network card as instructed in the section **Event Notification Configuration**, step 5 after making consecutive changes. The network card may also be reset to its factory defaults by holding the larger LED button for 10 seconds.

If any additional questions or concerns exist, contact Multilink Engineering at 440-366-6966 or engsupport@gomultlink.com.