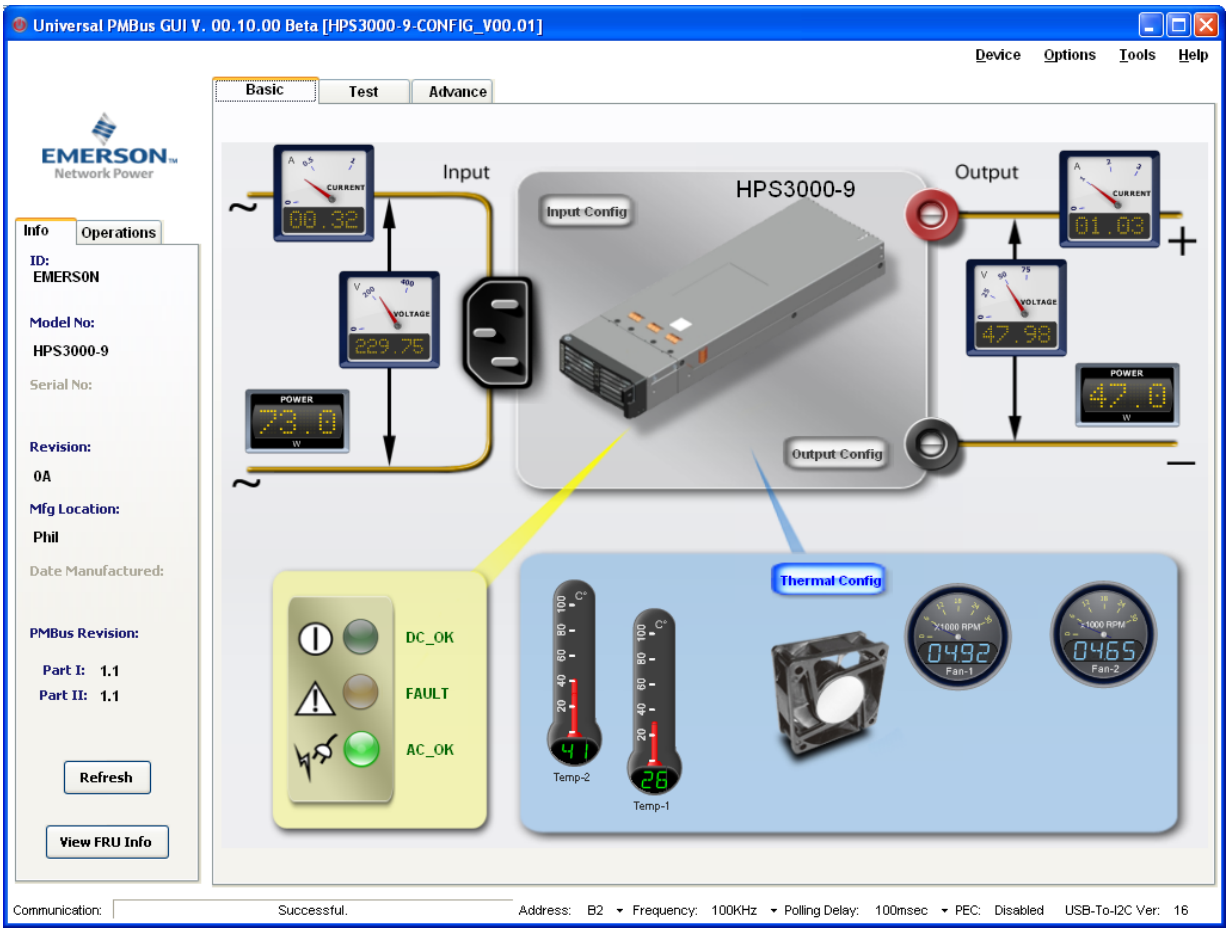
Universal PMBus™ GUI User's Manual



DOCUMENT REVISION HISTORY

REV	DATE	SOFTWARE DESCRIPTION	S/W REV.	REMARKS
01	06242008	Universal PMBus GUI User's Manual	00.01.00 Beta	First Issue
02	02062009	Universal PMBus GUI User's Manual	00.08.00 Beta	For Universal PMBus GUI version 00.008Beta
03	02142009	Universal PMBus GUI User's Manual	00.09.00	For Universal PMBus GUI version 00.09.00 Beta
04	11272009	Universal PMBus GUI User's Manual	00.11.00	For Universal PMBus GUI version 00.11.00 Beta
05	12292009	Universal PMBus GUI User's Manual	00.12.00	For Universal PMBus GUI version 00.12.00 Beta
06	09092010	Universal PMBus GUI User's Manual	00.17.00	For Universal PMBus GUI version 00.17.00 Beta

TABLE OF CONTENTS

GENERAL INFORMATION

This GUI Software is designed to make PSU accessible to the user using PMBus protocol. It is intended to provide information gathered from the PSU and interactive controls to the basic capabilities of Emerson Power Supply Product which complies in PMBus Protocol. This Software must be installed to PC before the user can make use all of the function of this program. This program can support AC-DC and DC-DC power supplies series. Please refer to the system requirement before starting the installation.

SYSTEM REQUIREMENT:

Minimum Hardware Requirements:

- Intel/AMD Dual Core Processor 1.6GHz
- 1GB RAM (add more RAM if more than 64MB is shared for the video)
- ENP USB-to-I2C Adapter

Software Requirements:

- Windows XP
- Dot Net Framework Version 3.5 installed to run the GUI.

INSTALLATION

Note: Make sure that other applications are closed before starting the installation.

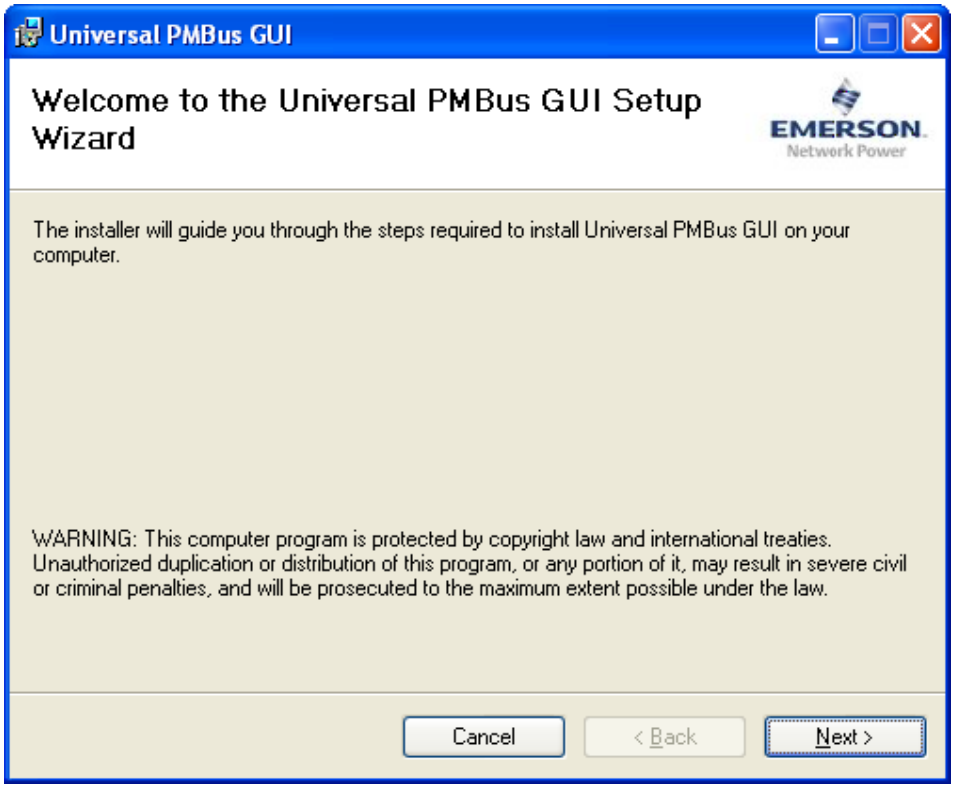
Installation Procedure

Run the installer CD, a pop up window for installation will come out. Select Install software to begin installation.

Once CD is inserted, this installer window panel will appear.

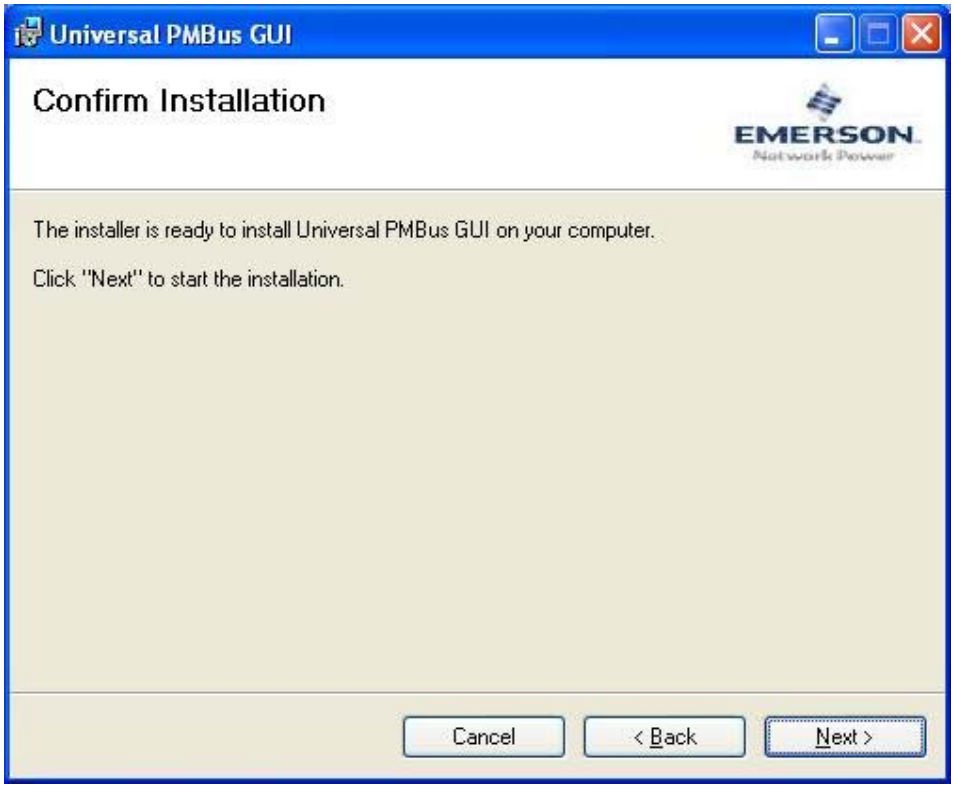
1) Once Install Software was selected, a pop up window wizard will appear to guide you through the installation process.

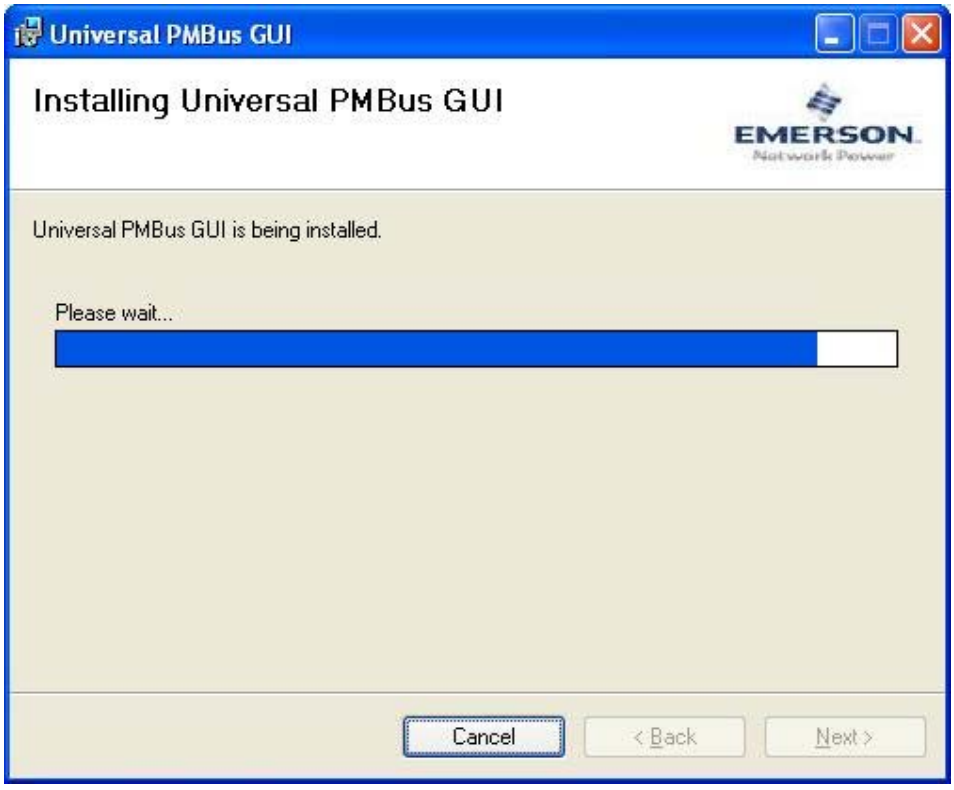
   Figure below is the welcome window for software installation. Just click **"NEXT"** to begin installation.



Note:
If you do not have the **Dot Net Framework Version 3.5** installed, the installation process will prompt you to first install Dot Net Framework Version 3.5. If not, click the "**Install .Net Framework 3.5"** in installer menu window. Once framework installed, proceed the installation of the GUI by selecting the **"Install Software GUI"** in installer menu window.

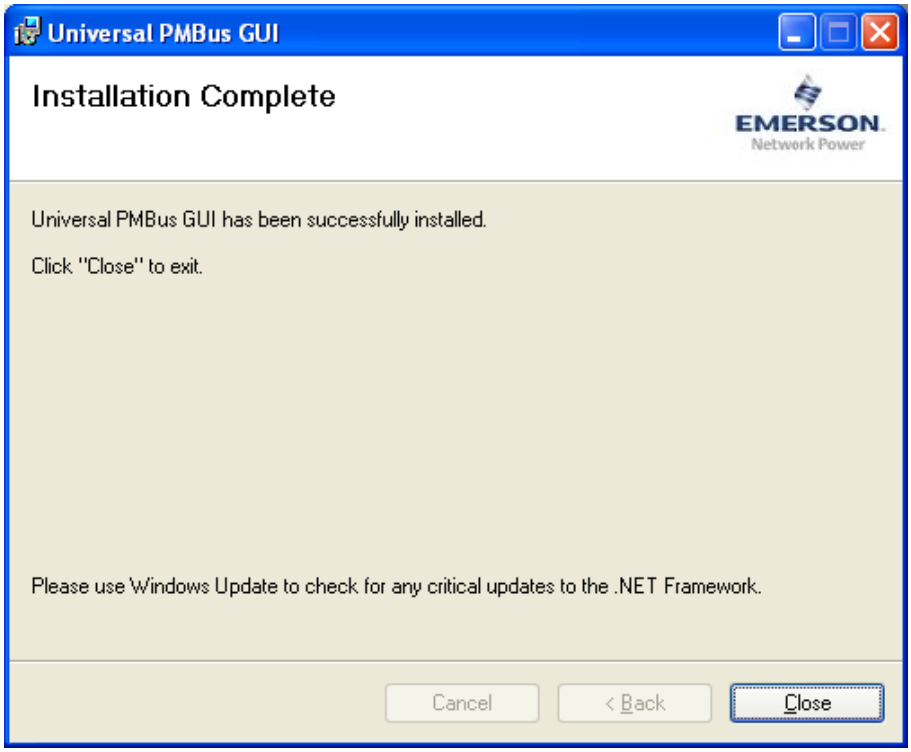
2) This window serves as a confirmation window that installation for GUI is now ready. Click "Next" to start installation.





3) GUI driver and reference file will be installed to your PC. Wait until installation completed.

4) Once installation completed successfully, a pop up wizard will appear that installation completed. See figure below.



Now, you can already start using the Universal PMBus GUI.

GETTING STARTED

GENERAL SETUP

To provide proper communication between the Universal PMBus GUI software and power supply, both PSU must be loaded with correct firmware version compatible with the GUI. The PSU must also be calibrated to make use of all the function correctly and to get correct data from actual PSU.

PSU COMPATIBILITY

PSU Case with PMBus Protocol Compatibility

HARDWARE SETUP

1. Plug Standard USB adapter to your PC using compatible USB cable.
2. Wait until you PC detect it as new Hardware (It only happens when first time use in USB port).
3. If USB adapter is detected by your PC, plug the connecting cable from USB adapter to I2C port of the PSU Case.

Note: Make sure that the Power Supply already power up to have proper communication with Universal PMBus GUI Software.

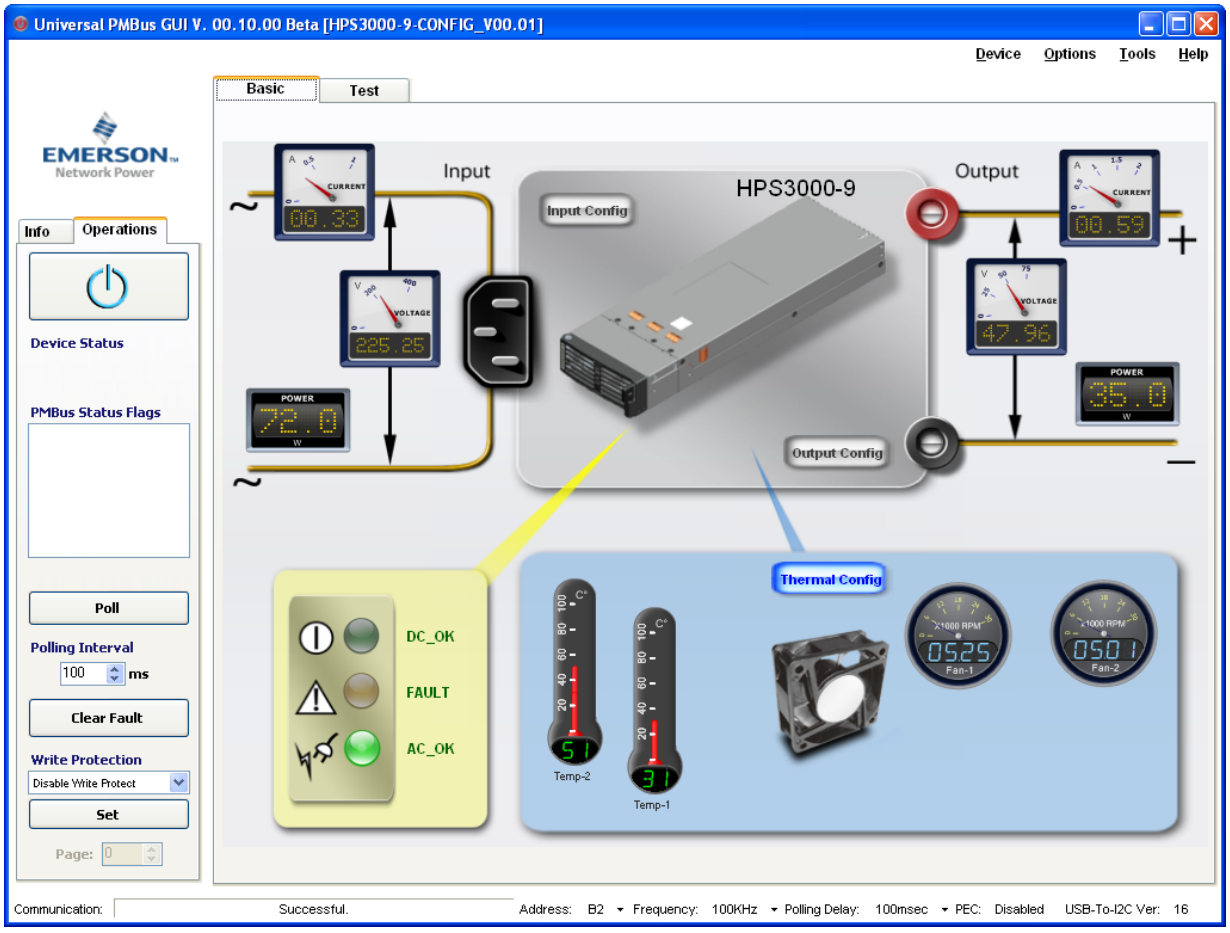
LAUNCHING THE UNIVERSAL PMBUS GUI

Connect the hot PSU device to the I2C-to-USB adapter, then I2C-to-USB adapter to the PC.

On the Start Menu Program or in your desktop, double-click the **Universal PMBus GUI** (red power) icon. A window will appear as seen below shows that the GUI is currently detecting the connected device.

Note: Make sure that power supply and USB to I2C adapter are connected, this is to avoid pro long process of detection then prompt the user above the invalid address.

Once the GUI has automatically detected the device the window will appear as seen below:



As an example this window shows that the HPS3000-9 unit has been detected.

GUI DETAILS

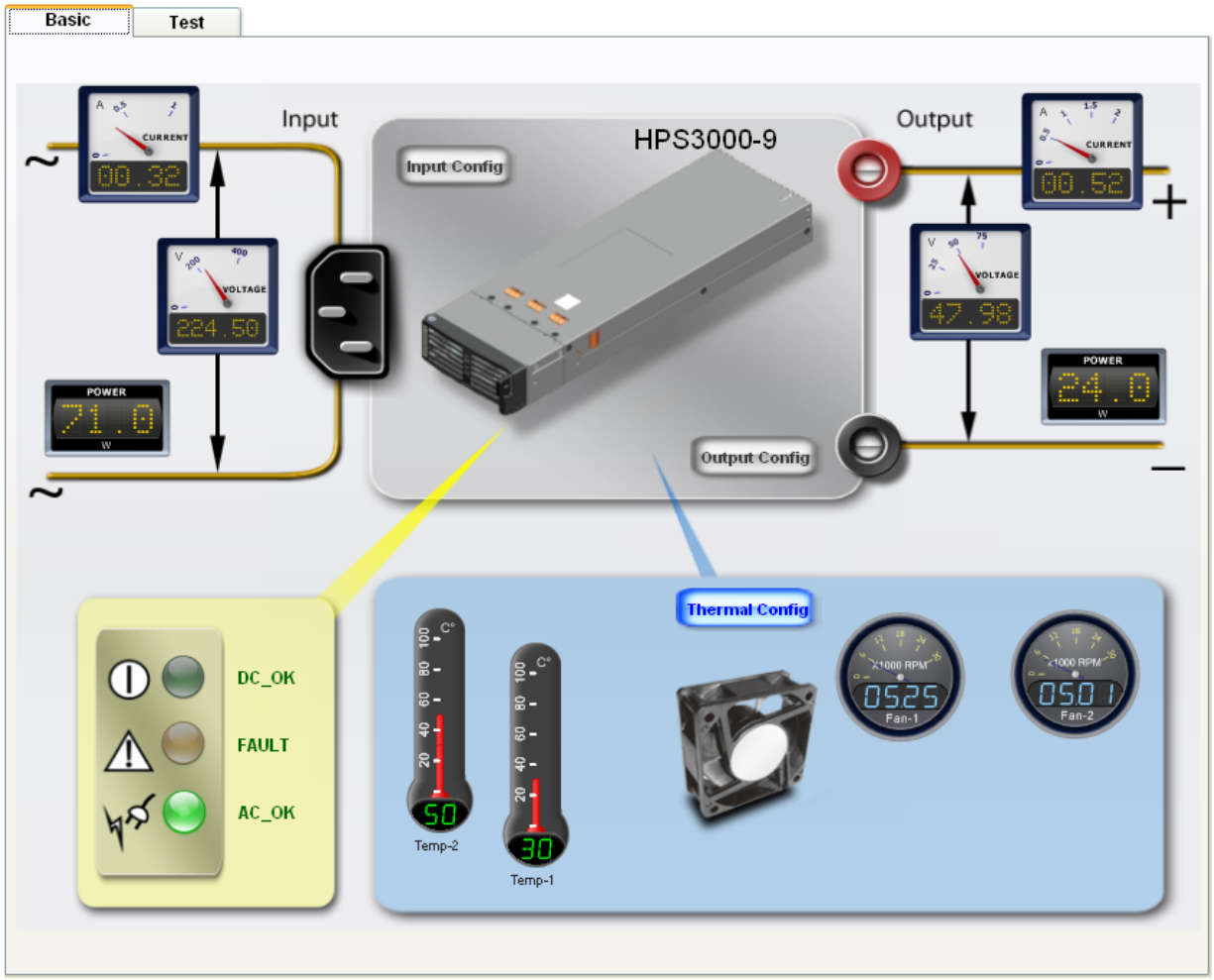
The GUI Consist of the following Panel

A. Main Menu

- **Device** menu for making, editing, importing and exporting device configuration.
- **Option**s Menu - Offline Mode and Detect Device (currently disabled)
- **Tools** Menu for Managed User (currently disabled)
- **Help** Menu - contains the **About** menu item to display the about dialog.

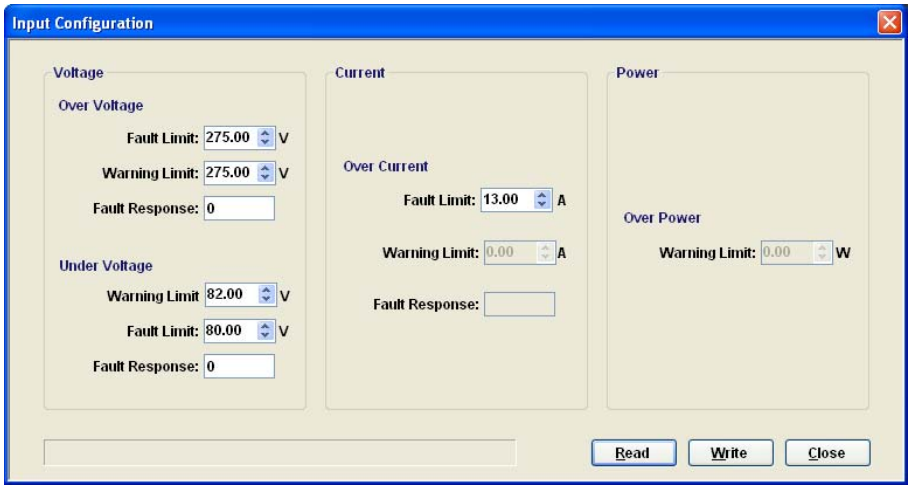
B. Main Panels

Basic Tab contains the basic readable input, output, and thermal parameters of the power supply device.

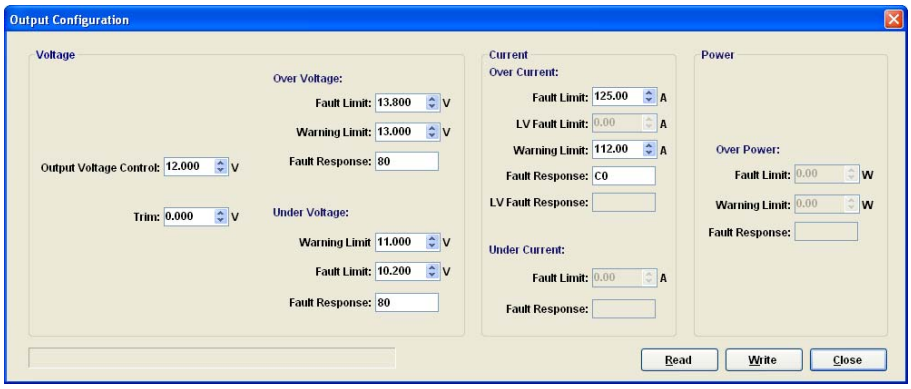


This view contains graphical gauges indicating input and output parameters of the power supply (e.g. input and output voltage, current and power). It also shows the temperature reading and fan speed depending on how many temp sensors and fans are installed in the PSU. There is also an LED indicator emulation to provide easy indication of the PSU status.

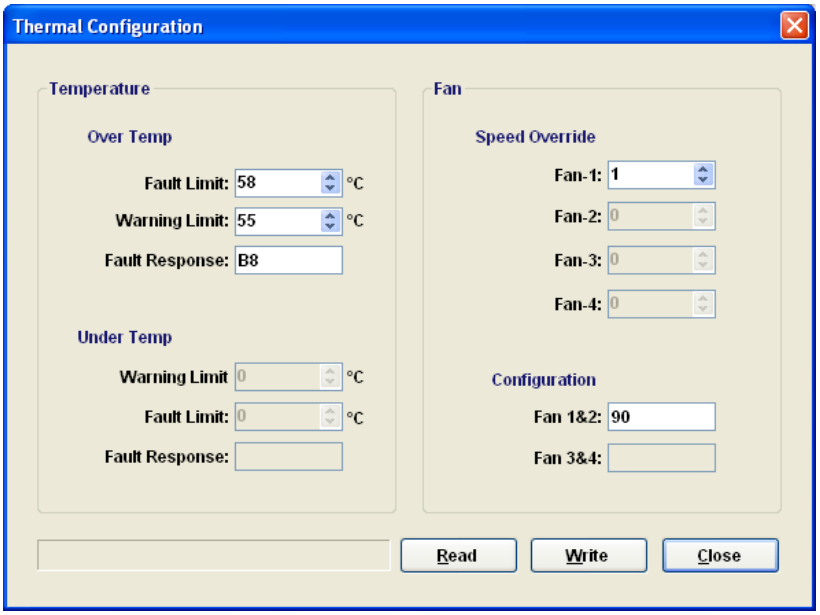
Input Configuration – appears when the Input "Config" button is clicked on the Basic panel. Here you can set the input limits of the power supply.



Output Configuration - appears when the Output "Config" button is clicked on the Basic folder. Here you can set the output control and limits and of the power supply.

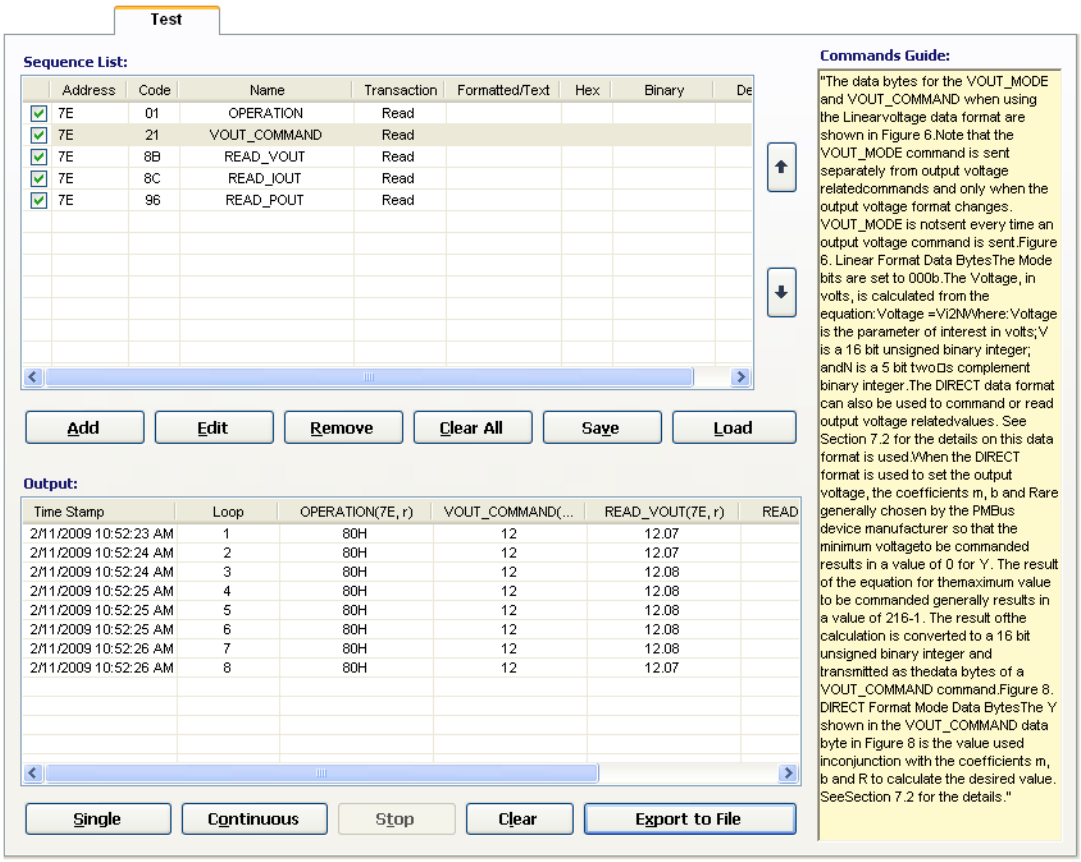


Thermal Configuration – appears when the Thermal "Config" button is clicked on the Basic folder. Here you can set the thermal limits and fan configurations of the power supply.



Test Panel

Here you can set commands and execute them once or continuously. This also allows you to connect to multiple devices because the **Address** column is changeable per command on the **Sequence List** view. You can also arrange the command sequence, save and load it for future use. The output data on the **Output** view, acquired to the power supply device can also be exported to a text file. The **Command Guide** shows corresponding PMBus command information by clicking a row on the **Sequence List** view.

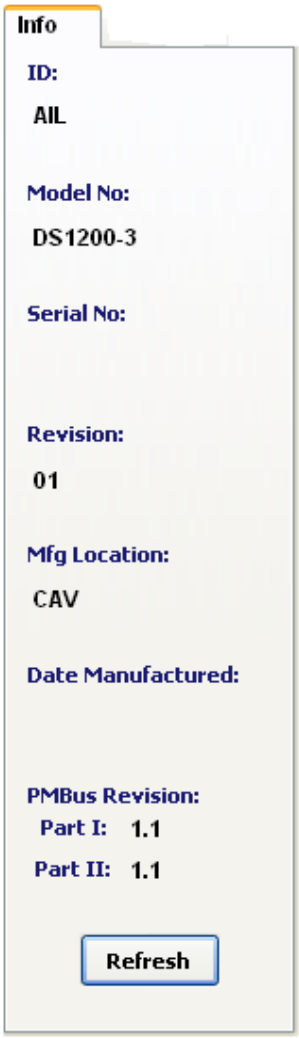


A sequence list can be created by clicking the "**Add**" button. A list of supported commands by the PSU will appear and can be selected to be added to the sequence list. Each command in the sequence list can be edited according to your preference by highlighting the command and clicking "**Edit**". Commands may be removed from the list by using the "**Remove**" and "**Clear All**" button. The sequence list may be saved to a sequence list file by using the "**Save**" button, which can be reused and reloaded by using the "**Load**" button.

The sequence list can be executed either as a Single burst or Continuous execution by using the "**Single**" or "**Continuous**" button. Continuous execution may be paused by using the "**Stop**" button.
The logged results can be cleared using the "Clear" button or can be saved in a text file using the "**Export to File**" button. The text file is formatted in a way that it can also be easily exported to Microsoft Excel™ format.

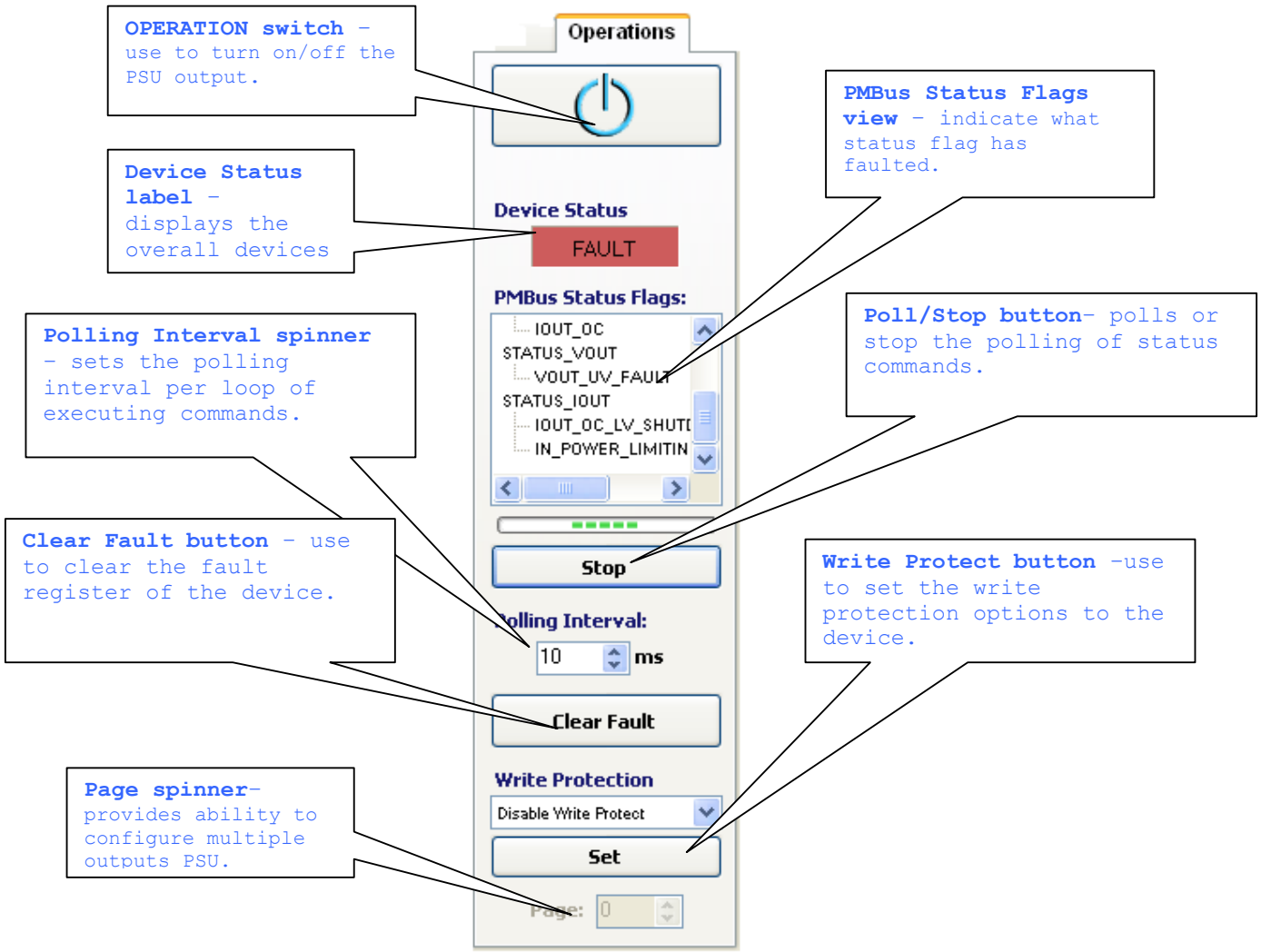
For more detail about Using Test Panel Section, proceed to Using Test Panel Chapter of this user's manual.

C. **Favorites Panel**
Info Tab displays the manufacturing information of the power supply device.

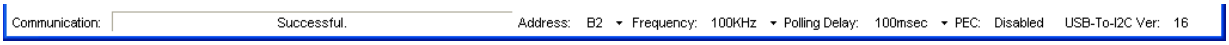


Note: Only supported command codes by the PSU will be displayed in this panel.

Operations Tab



D. Main Status



Communication - displays the current USB-to-I2C communication status.

Address – displays the current devices address. The device address be changed by clicking its value and choosing or entering a new value. The address indicated is only applicable for the Basic Panel and Favorites Panel.

Frequency - displays the current USB-to-frequency.

Polling Delay – displays the polling delay of the execution loop.

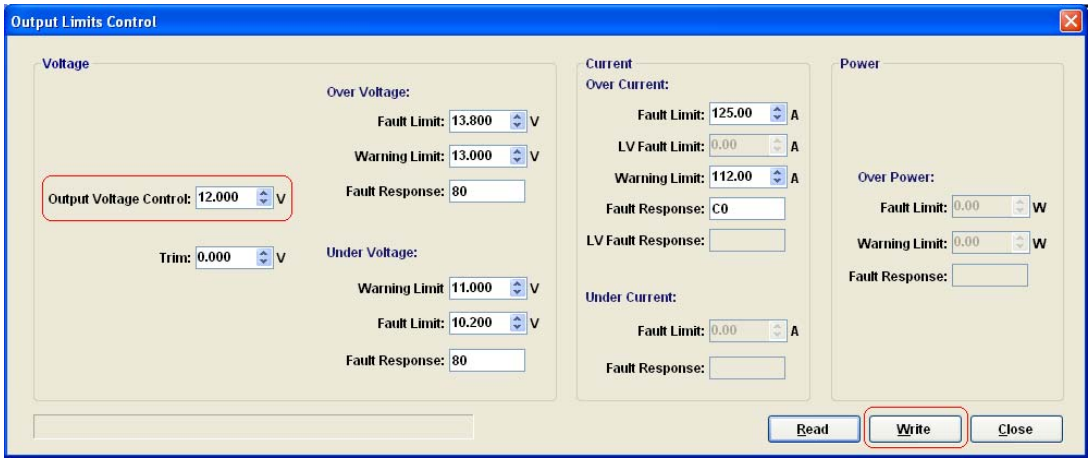
PEC – indicated whether the device is PEC enabled or disabled.

USB-to-I2C Ver – displays the USB-toI2C version.

USING THE BASIC PANEL

A. ADJUSTING POWER SUPPLY PARAMETERS

1) For example to adjust the output voltage of the power supply device, click the **Output "Config"** button. The Output Configuration dialog window will appear on the screen, as seen below, with the current Output settings of the power supply device.



2) If the VOUT_COMMAND is supported by your device then the "**Output Voltage Control**" is enabled. Change its value with your desired value, and click the "Write" button. The GUI will then write to the power supply device and automatically returns the value written if it is a valid value for the device.

3) You may do the same steps for the other basic power supply parameters.

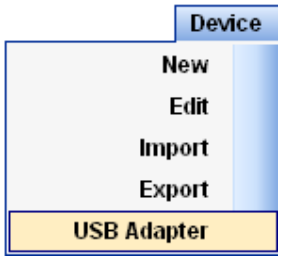
B. CHANGING THE ADDRESS

If you have a multi-device connection, you can view other devices' parameter on the Basic Panel.

1) Click the Address value in the Status. A list of the addresses will appear on the top of it plus a text field

2) Select from the list or you can enter the desired address if it is not in the list.

C. CHANGING USB ADAPTER
To change the adapter selected, go to menu then select USB Adapter.

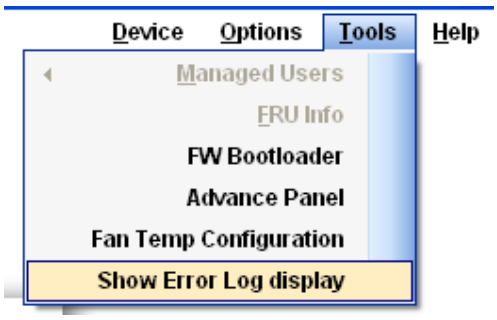


Standard Adapters are the USB adapter that uses HID driver. Communication using this adapter was slow.

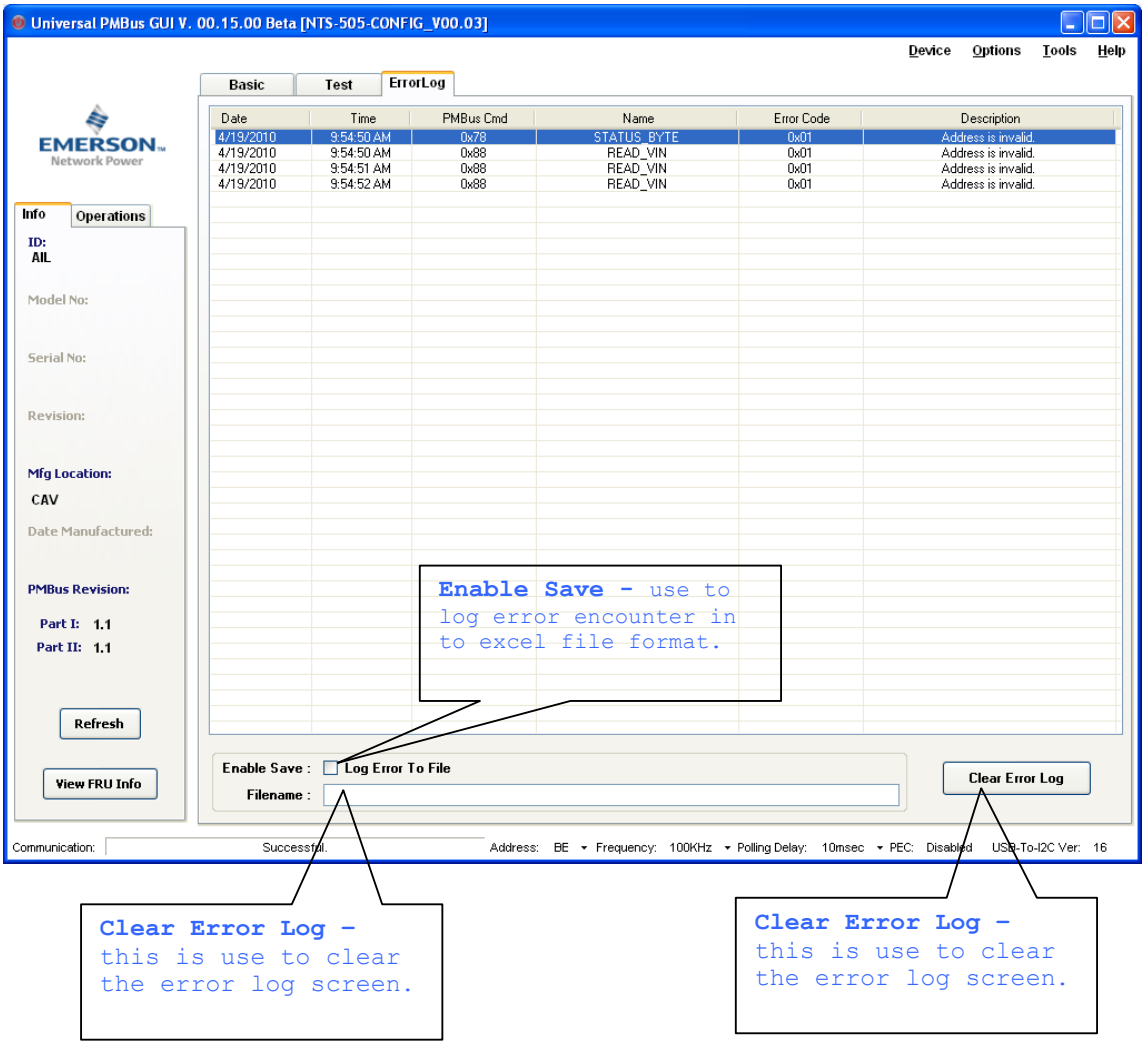
D. SHOW ERROR LOG DISPLAY

Error log display was also base on basic panel real time display. Once basic panel encounter communication error it will log the error it encounter in Error Panel Display.

To enable the panel, go to Tool Menu then select "Show Error Log Display".



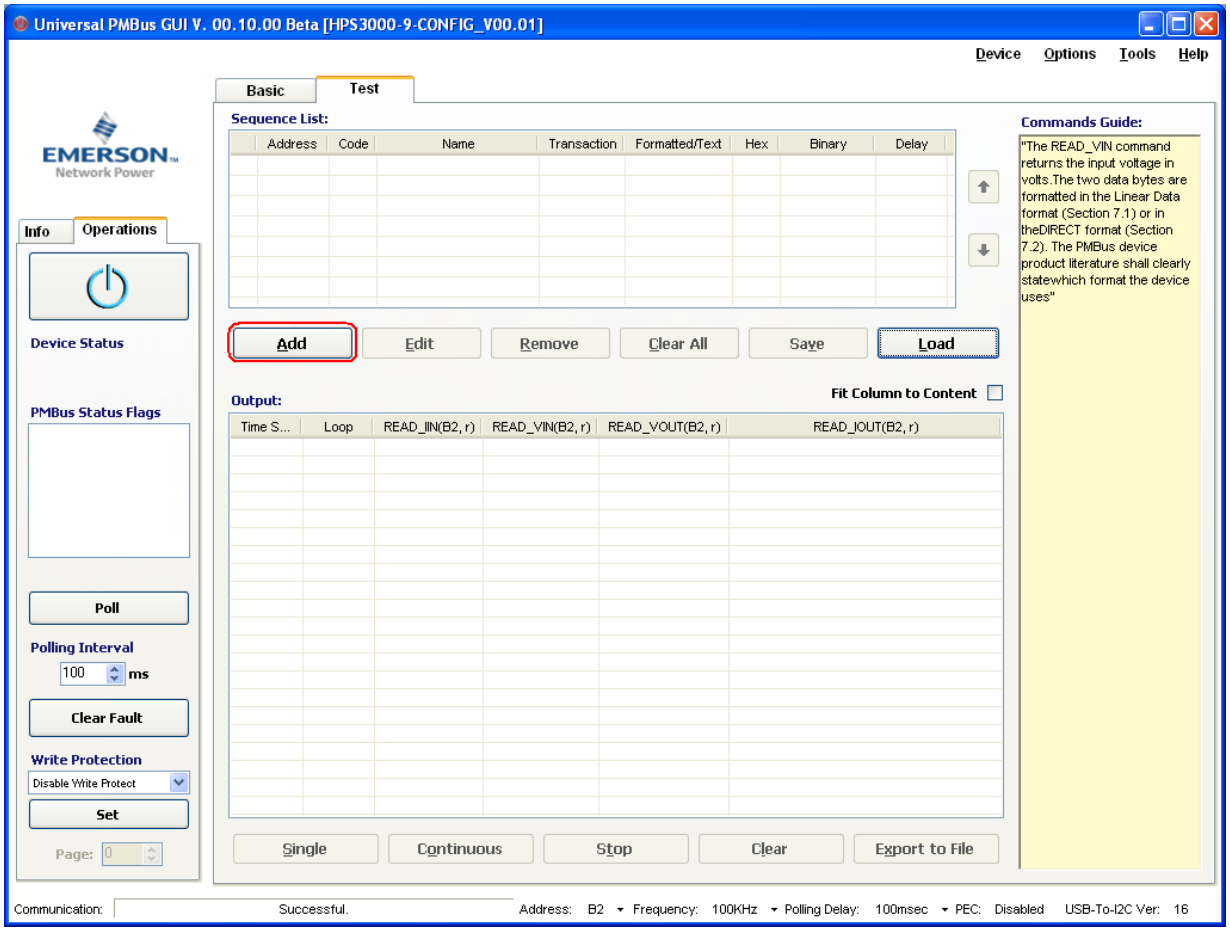
Once "Show Error Log Display" was selected, "ErrorLog" tab will be added in Universal PMBus Panel.



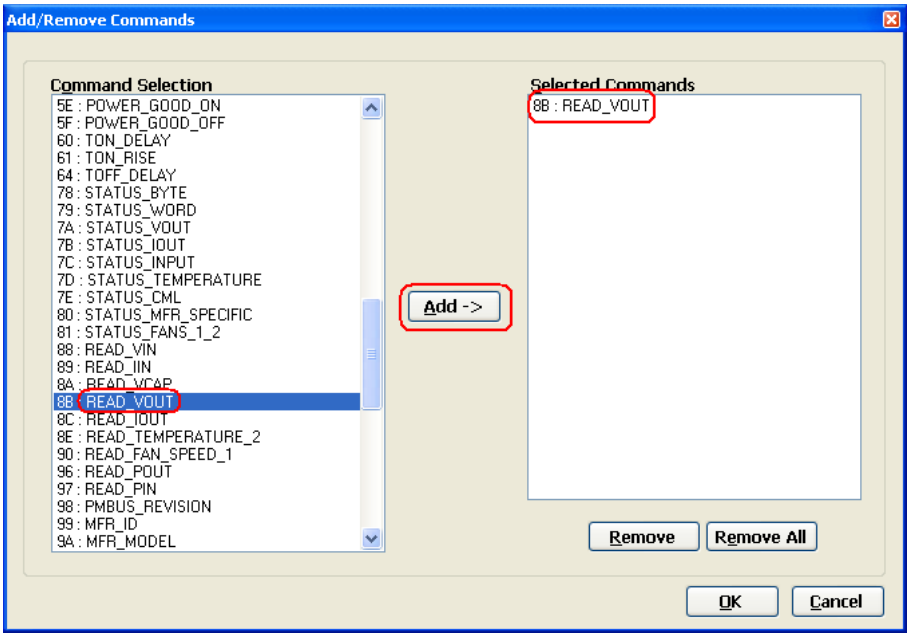
USING THE TEST PANEL

A. ADDING A COMMAND ON THE SEQUENCE LIST VIEW

1) To add a command on the Sequence List view click the Add button on the Test Panel



2) And the dialog window will appear as seen below.



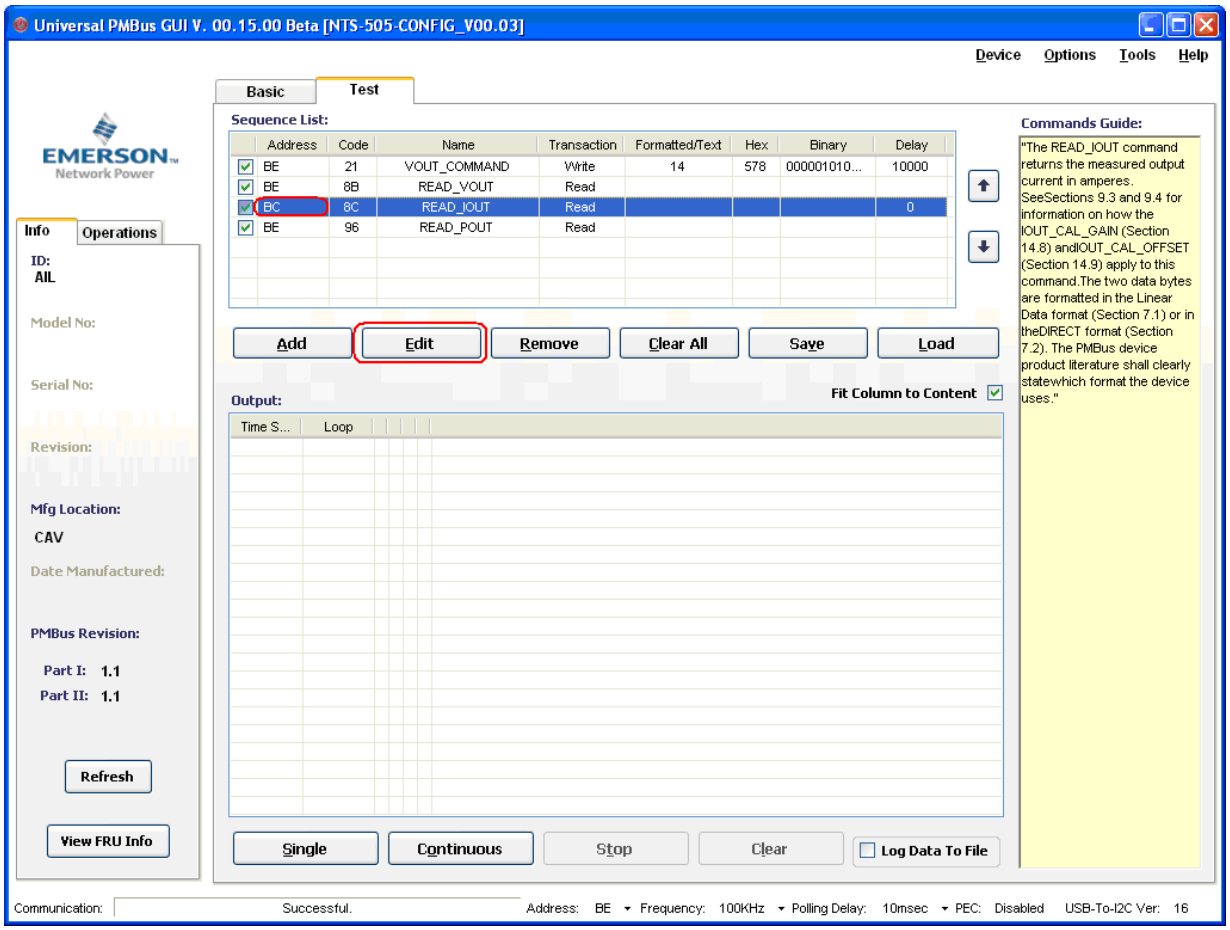
3) Select the desired command/s in the **Command Selection** list and press the **Add->** button. The command/s you selected will appear on the **Selected Commands** list.

4) You can remove command/s from the **Selected Commands** list by clicking the **Remove** button or by clicking the **Remove All** to remove them all.

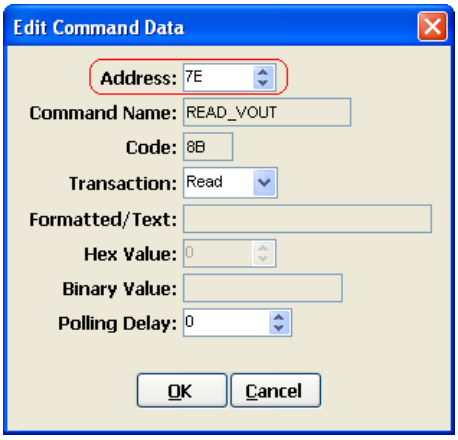
5) To add it to the **Sequence List** view in the **Test Panel**, click the **OK** button.

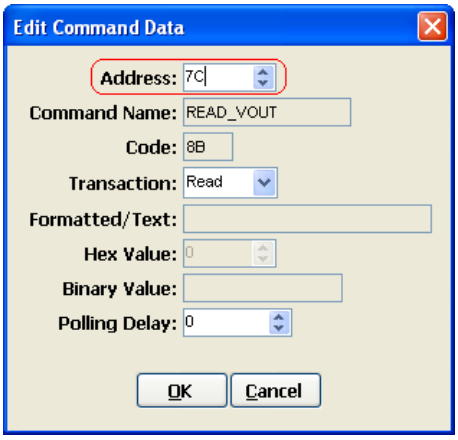
B. EDITING A COMMAND FROM THE SEQUENCE LIST VIEW

1) Click the Edit button from the Test Panel.

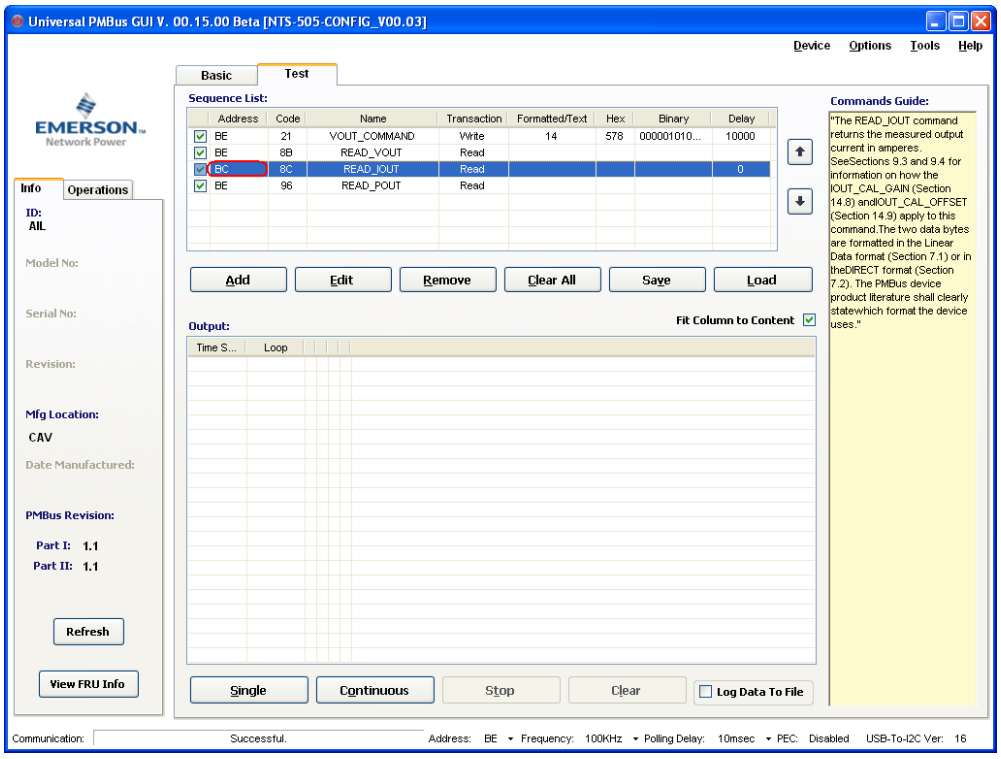


2) The dialog will appear as seen below. Change the **Address** value, say from **7E** to **7C**. Then press the OK button.



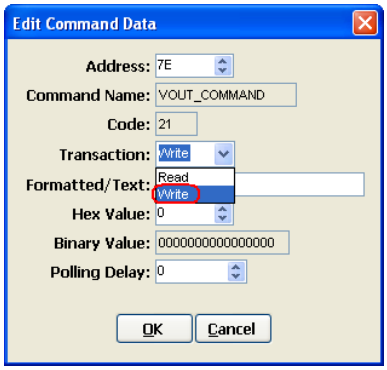


3) The address of the command is now changed to 7C as seen below.

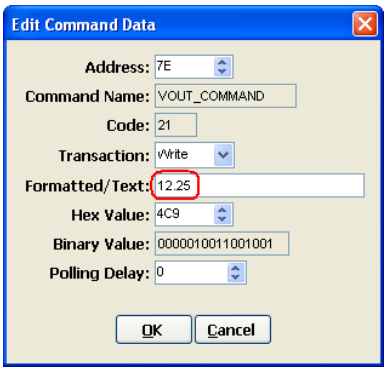


C. WRITING DATA TO THE DEVICE IN THE SEQUENCE LIST VIEW

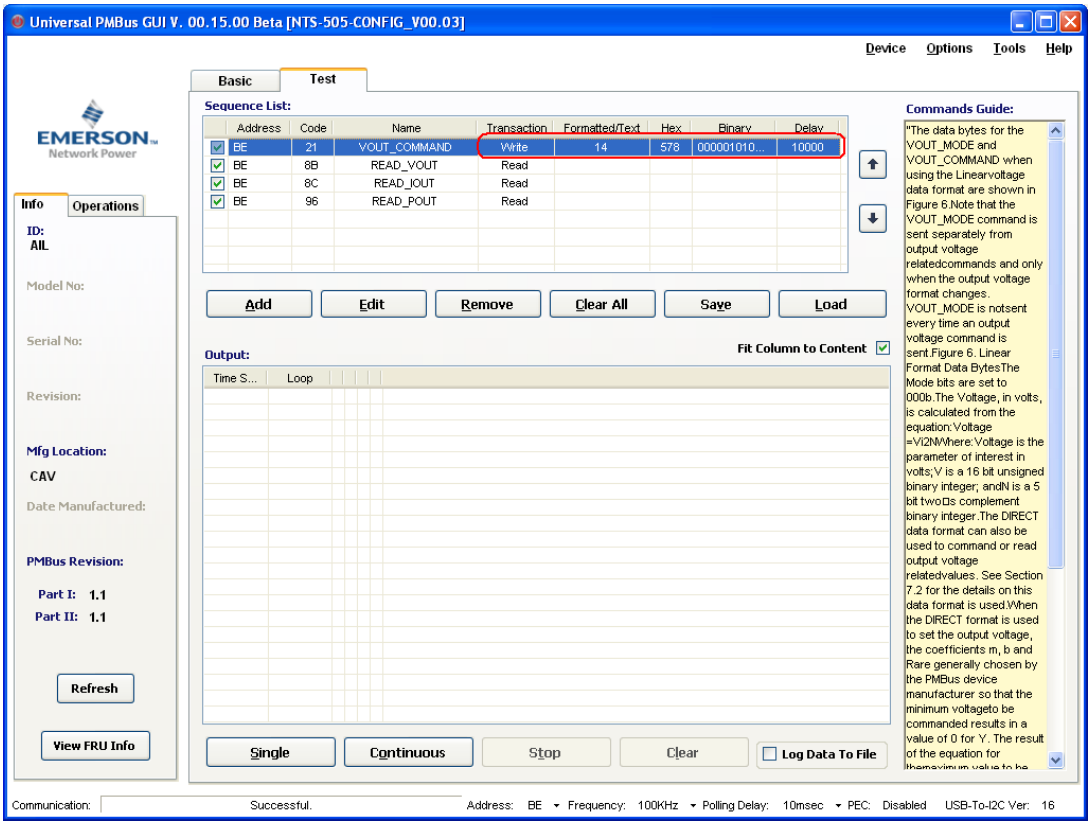
1) The commands in the **Sequence List** view are read transactions by default. We can make a command a write transaction. For example we want to make the VOUT_COMMAND write a 12.25 to the power supply device to change its output voltage to 12.25V, we need to click the **Edit** button. On the **Edit Command Data** dialog window change the transaction from **Read** to **Write**.



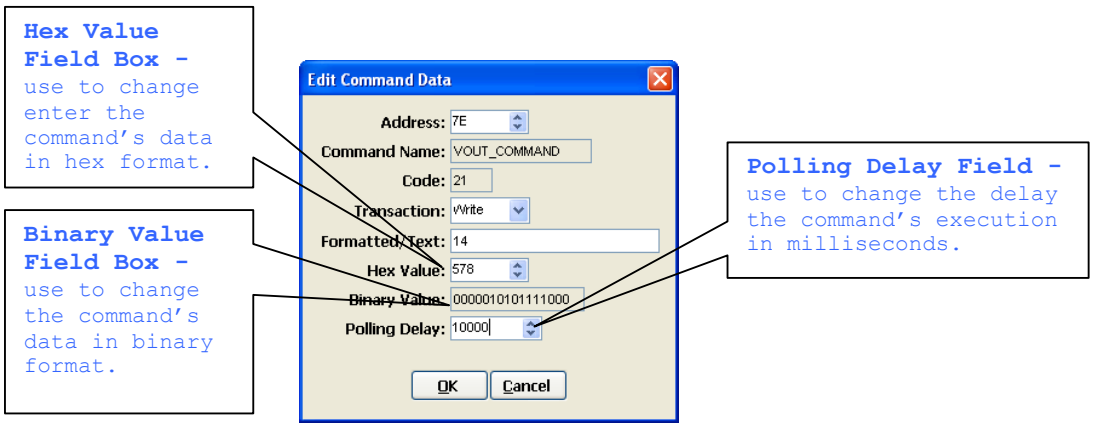
2) Then change or type the **Formatted/Text** field value to **12.25** then click the **OK** button.



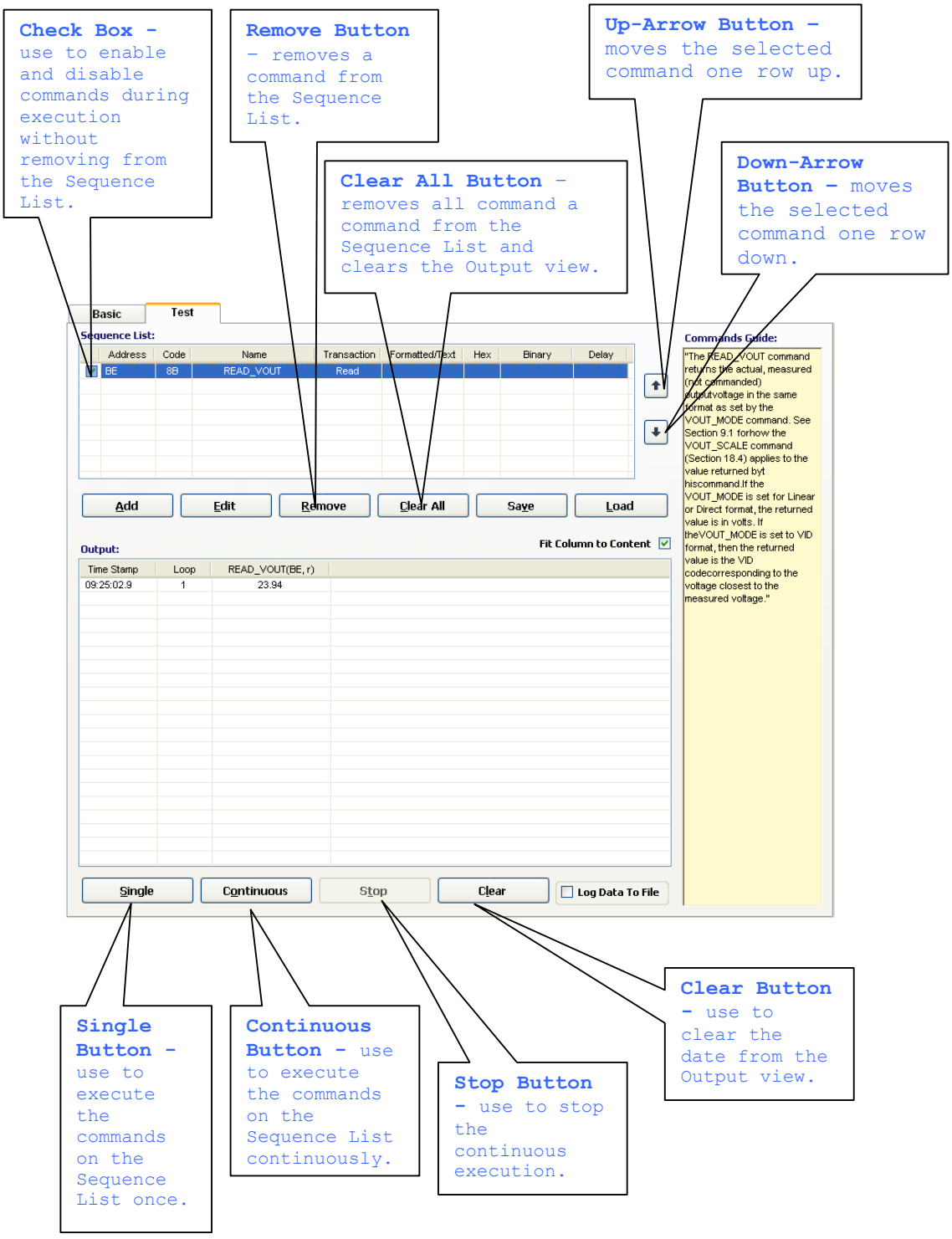
3) The command is now a write transaction and it will write 12.25 to the power supply device when a the **Single** or **Continuous** button is clicked.



D. OTHER EDIT COMMAND DATA DIALOG CONTROL PARAMETERS



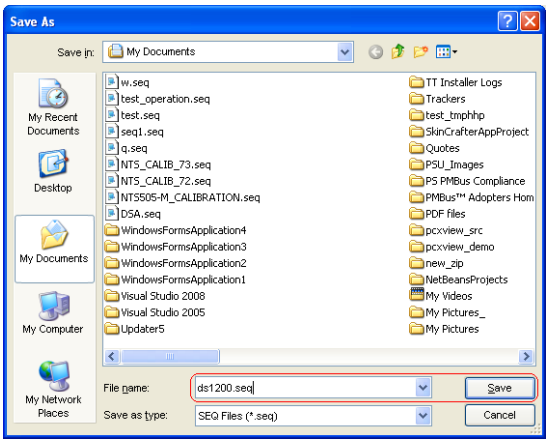
E. CONTROLS FOR DISABLING, REMOVING AND ARRANGING THE COMMANDS ON THE TEST PANEL



F. SAVING THE COMMAND SEQUENCE
The command sequence you made can be saved for future use or for use with the other power supply device model.

1) Click the **Save** button and the **Save** dialog will appear as seen below.

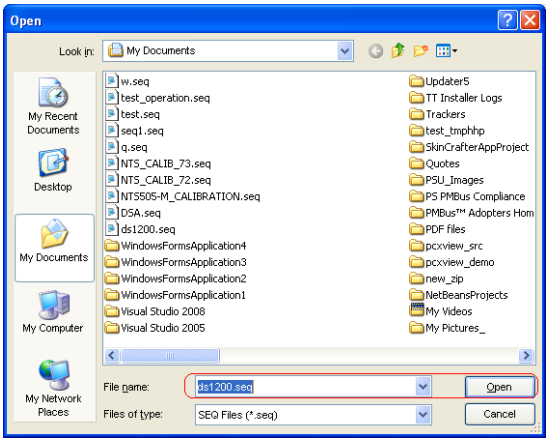
2) On the **Save** dialog, enter the desired filename of the sequence with an extension of .**seq**. Then click the Save button on the **Save** dialog. For example the command sequence we have will be saved as ds1200.seq.



G. LOADING THE COMMAND SEQUENCE FILE.

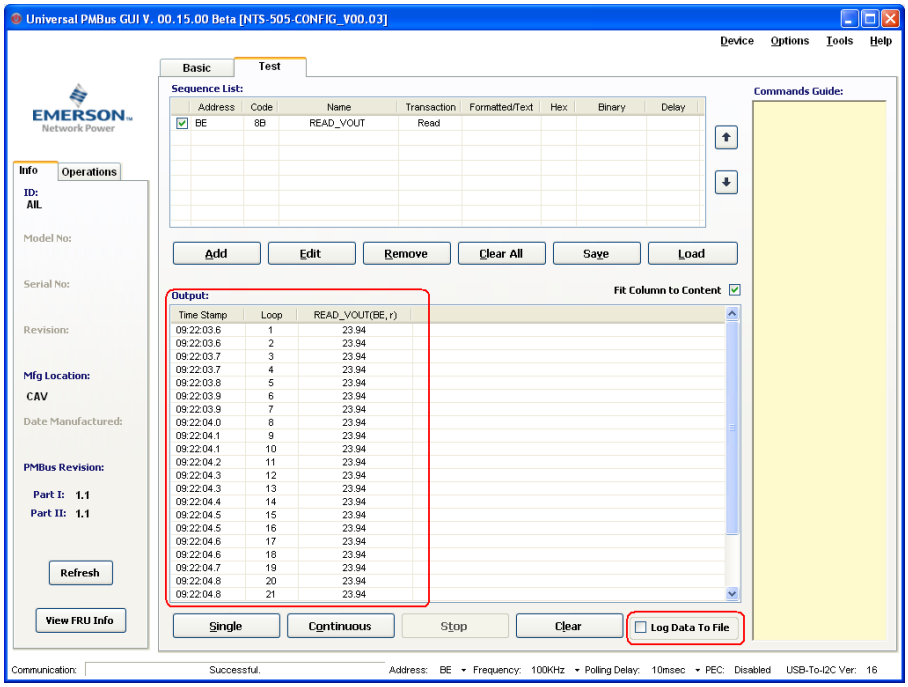
1) Click the **Load** button and the **Open** dialog will appear as seen below.

2) On the **Open** dialog window, enter the filename of the command sequence for example to load. Then click the **Open** button to load the file. Here the **ds1200.seq** will be opened.



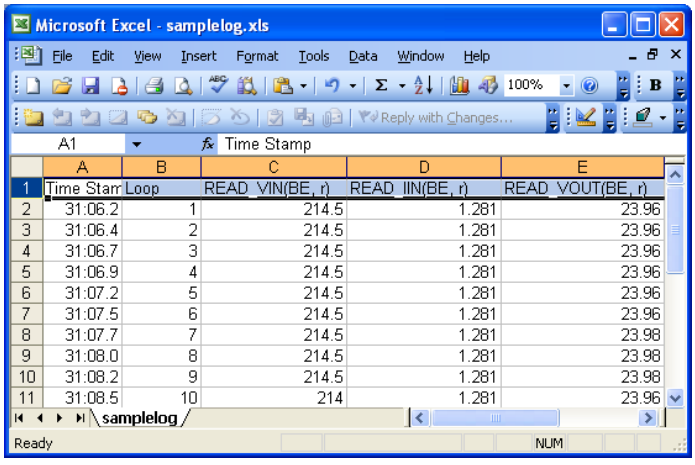
H. EXPORTING THE OUTPUT DATA TO A TEXT FILE

Data can be exported to a tab delimited text file which can then be imported to an spreadsheet application for data analysis. If you have a data to the **Output** view as seen below:

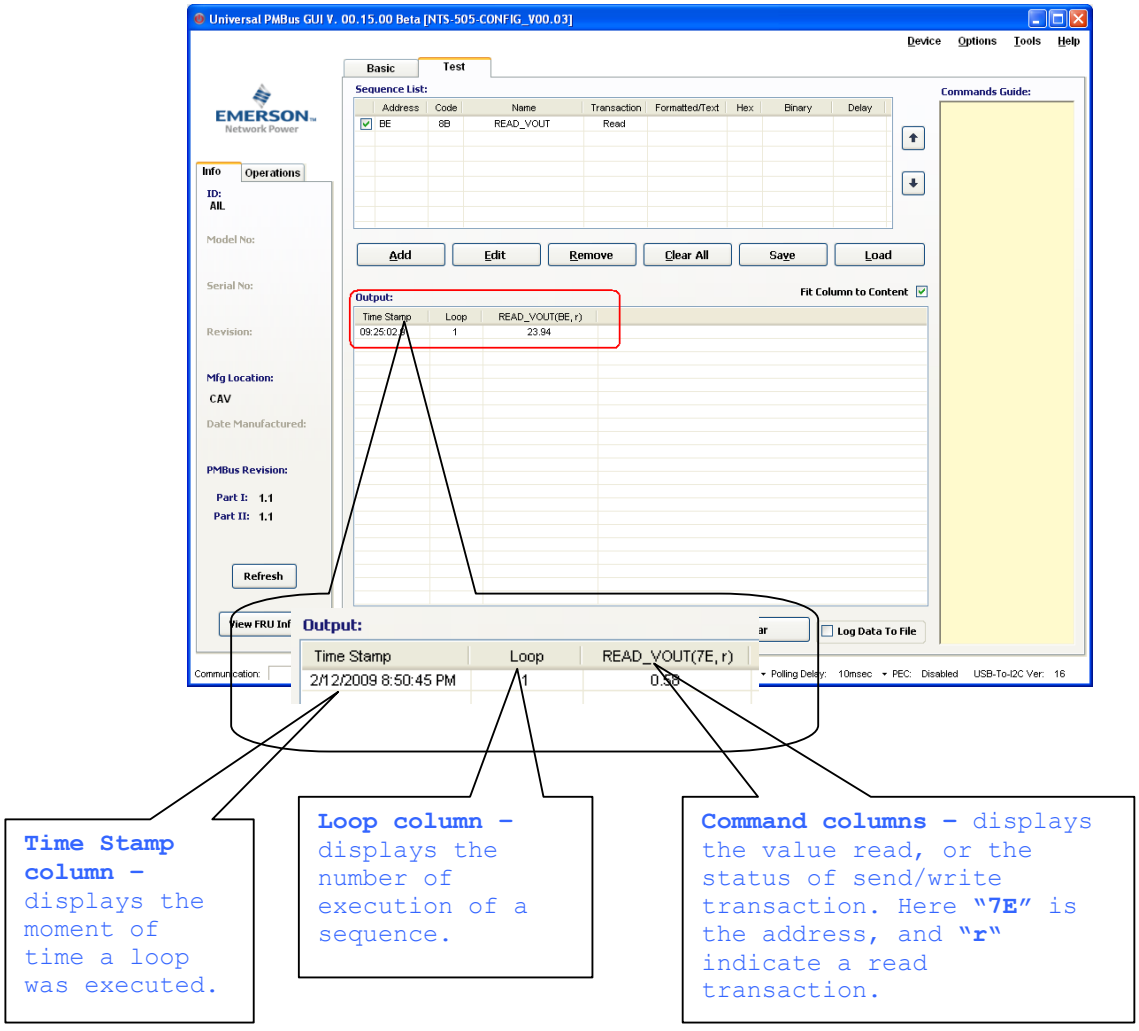


1) Click the **Log to File** button and a **Save** dialog will be appear on the screen.

2) Enter the desired filename, then click the **Saved** button. Format of file to save will be in excel format.



I. OUTPUT VIEW INFORMATION



Time Stamp column – displays the moment of time a loop was executed.

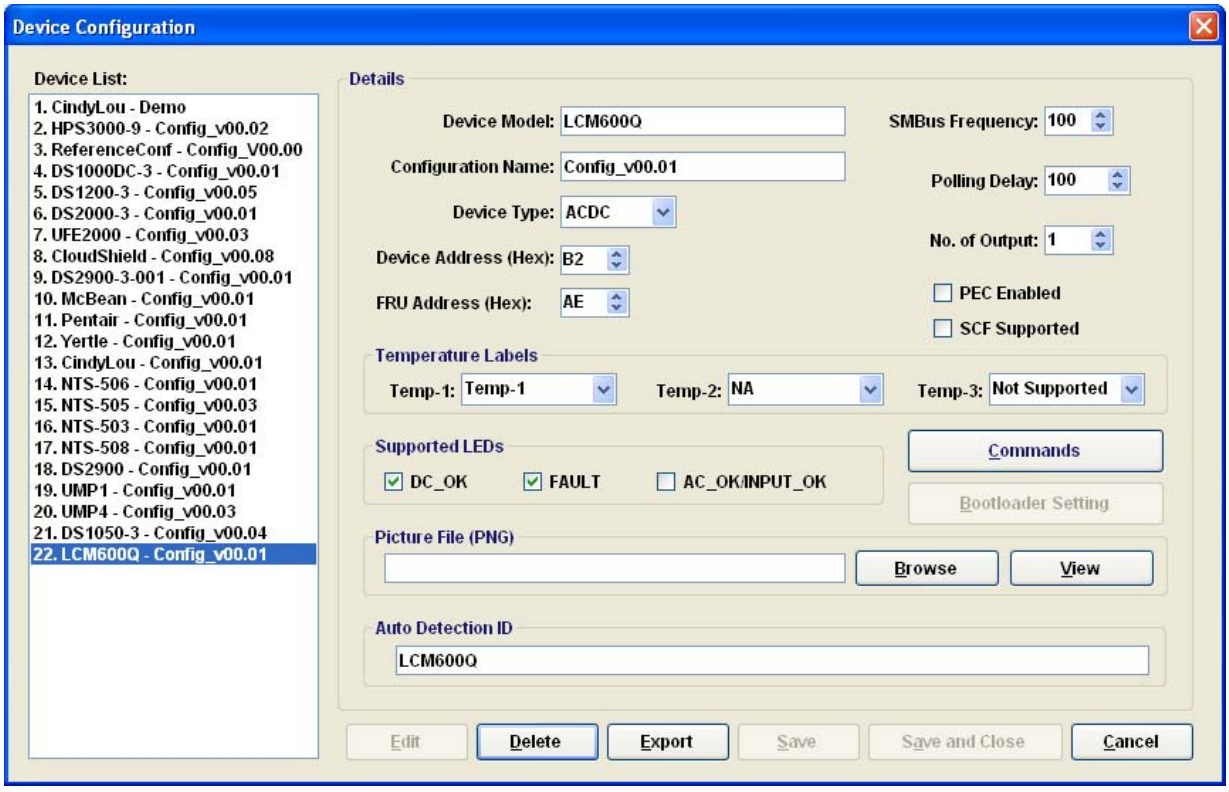
Loop column – displays the number of execution of a sequence.

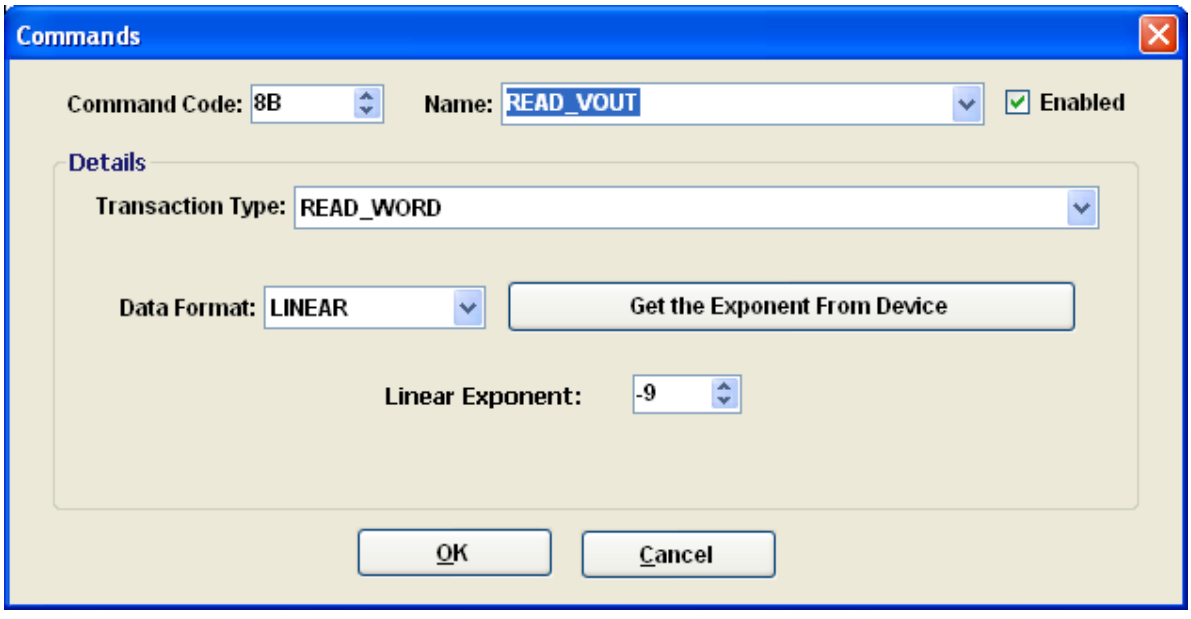
Command columns – displays the value read, or the status of send/write transaction. Here **"7E"** is the address, and **"r"** indicate a read transaction.

Configuration File Update (Authorized personnel only)

This section was designed for authorized personnel only. It is also password protected for security protection to change any setting and update supported PSU and configuration file.

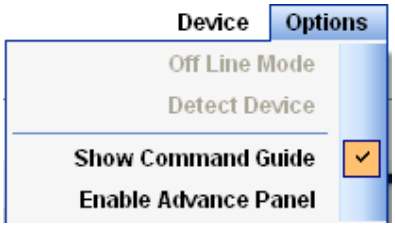
This will show the list of supported Power Supply model. Display and supported command can be change and update in this section.


Device Configuration
Device List:
1. CindyLou - Demo
2. HPS3000-9 - Config_v00.02
3. ReferenceConf - Config_V00.00
4. DS1000DC-3 - Config_v00.01
5. DS1200-3 - Config_v00.05
6. DS2000-3 - Config_v00.01
7. UFE2000 - Config_v00.03
8. CloudShield - Config_v00.08
9. DS2900-3-001 - Config_v00.01
10. McBean - Config_v00.01
11. Pentair - Config_v00.01
12. Yertle - Config_v00.01
13. CindyLou - Config_v00.01
14. NTS-506 - Config_v00.01
15. NTS-505 - Config_v00.03
16. NTS-503 - Config_v00.01
17. NTS-508 - Config_v00.01
18. DS2900 - Config_v00.01
19. UMP1 - Config_v00.01
20. UMP4 - Config_v00.03
21. DS1050-3 - Config_v00.04
22. LCM600Q - Config_v00.01
Details
Device Model: LCM600Q
Configuration Name: Config_v00.01
Device Type: ACDC
Device Address (Hex): B2
FRU Address (Hex): AE
SMBus Frequency: 100
Polling Delay: 100
No. of Output: 1
PEC Enabled
SCF Supported
Temperature Labels
Temp-1: Temp-1
Temp-2: NA
Temp-3: Not Supported
Supported LEDs
DC_OK
FAULT
AC_OK/INPUT_OK
Commands
Bootloader Setting
Picture File (PNG)
Browse
View
Auto Detection ID
LCM600Q
Edit
Delete
Export
Save
Save and Close
Cancel

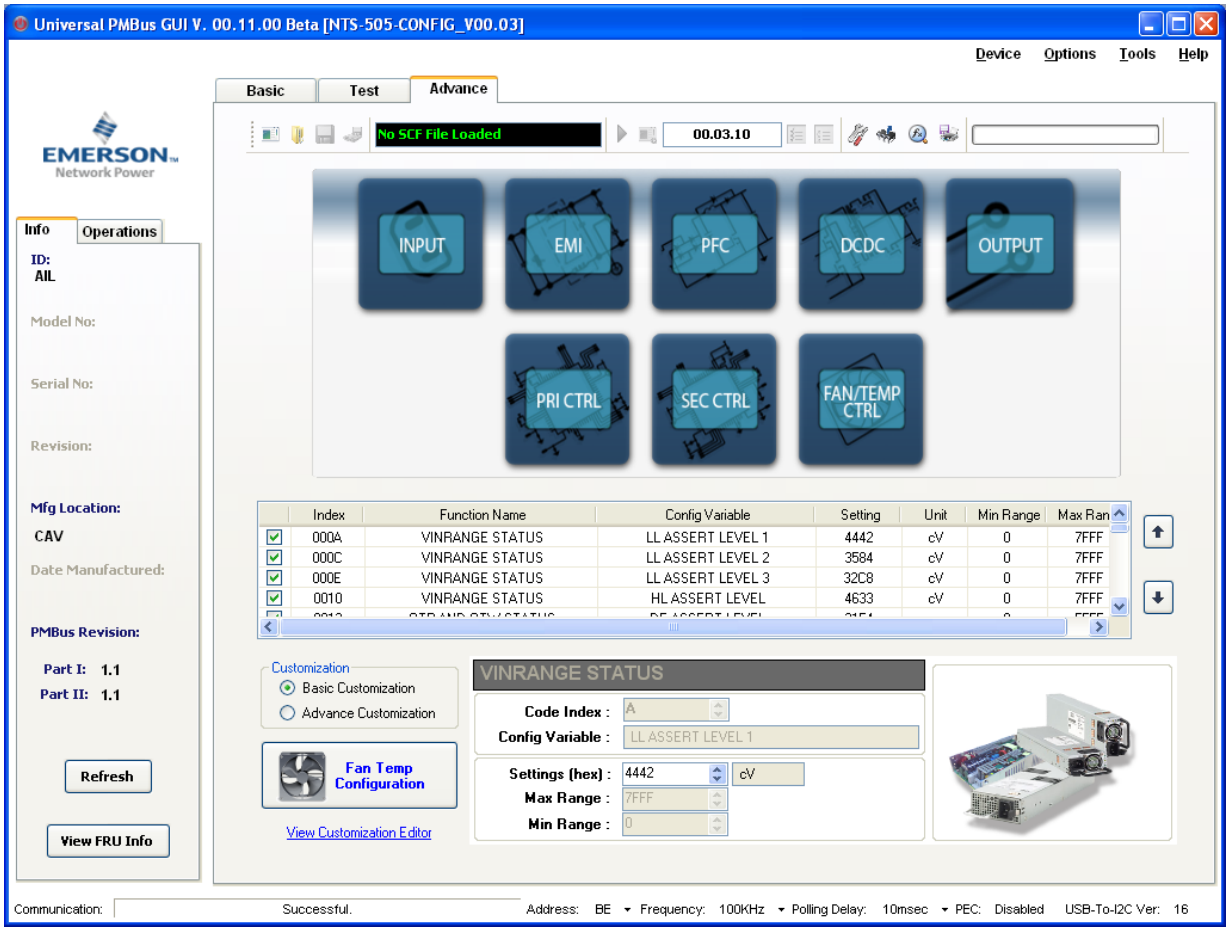

Commands
Command Code: 8B
Name: READ_VOUT
Enabled
Details
Transaction Type: READ_WORD
Data Format: LINEAR
Get the Exponent From Device
Linear Exponent: -9
OK
Cancel

Advance Panel Section (Authorized personnel only)

Universal PMBus GUI also has the feature for Software Configurable Firmware.



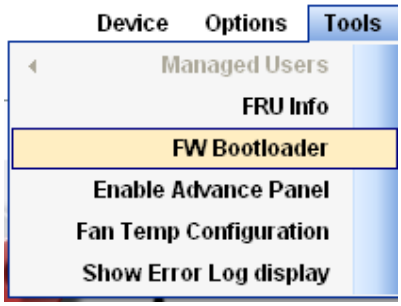
This section was designed for authorized personnel only and has the knowledge on firmware configurable operation. It is also password protected for security protection to change any setting in the power supply that may cause destroying the unit.



This new features of power supplies will help changing any parameter without changing the firmware. Only selected power supply has this capability. For more information about this new feature, please contact our technical support team.

Firmware Update (Authorized personnel only)

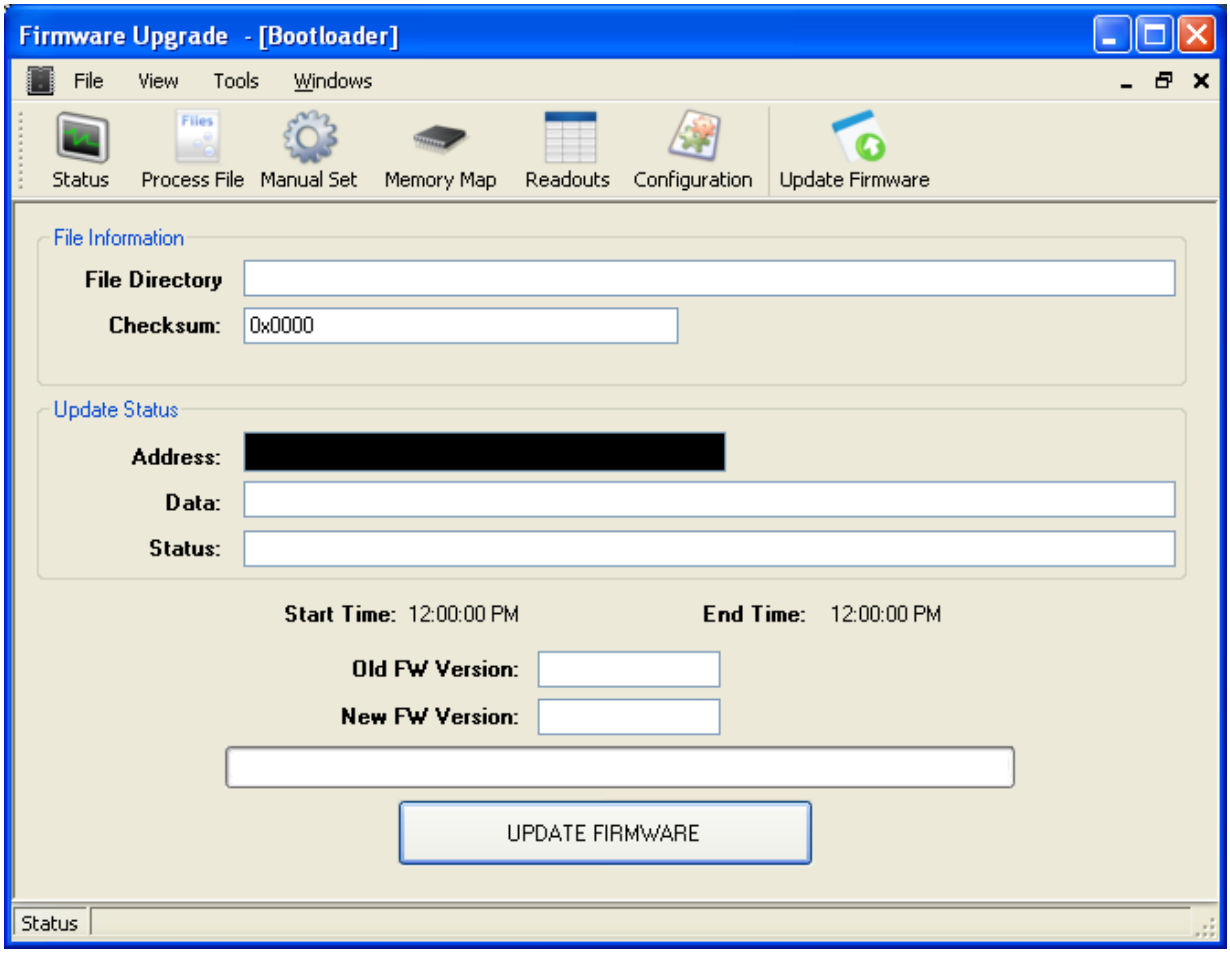
Another Universal PMBus GUI capability is the bootloader. This feature of GUI was design for power supply firmware update.



Authorized personnel only can access this feature. It is also password protected.

There are two login available for Advance Panel Section.

a. Authorized Personnel
b. Bootloader Administrator



This GUI feature will enable user to update the firmware of power supply anywhere.

For more information if your power supply is supported with this feature, please contact our technical support team.