



Graphical Control Panel User Manual

JMM-5000 PC/104-Plus DC/DC Power Supply

Revision A.00

March 2016

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A.00	03/28/2016	Initial release

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1. INTRODUCTION

This document provides information relevant to the operation and demonstration of the JMM-5000 power supply module’s capabilities.

The Diamond Systems’ Universal Driver must be installed before executing the GUI program. For more details read the Universal Driver installation instructions provided with the Universal Driver package.

- To start the GUI in windows, Double click the following executable file JMM5000.exe
- To start the GUI in Linux, Run the following executable file with root user permission \$ /JMM5000.
- The main window of the control panel software is displayed on the screen as shown below in Figure 1.

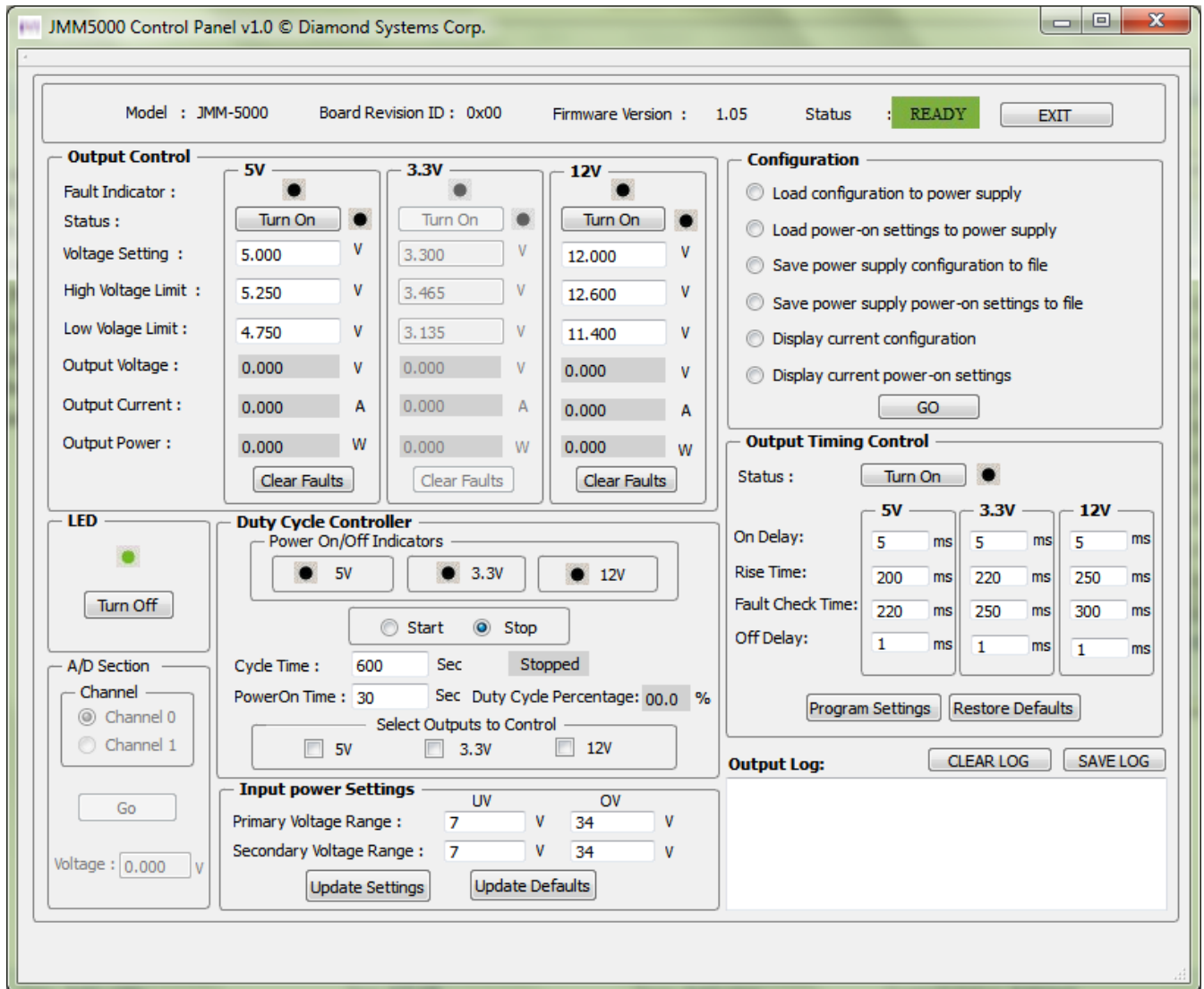


Figure 1: JMM-5000 Control Panel

2. OUTPUT CONTROL

- Press on the “Turn On” button to enable the voltages, press on the “Turn Off” button to disable the voltages.
- Provide the Voltage Setting, High Voltage Limit, Low Voltage Limit values.
- Output Voltage, Output Current, and Output Power values are read from Control and updated if the output is enabled.
- Fault Indicator LED turns red when over voltage, under voltage, or over current. Under Current fault occurs when the voltage is enabled. The fault indicator LED remains black if the fault doesn’t occur when the voltage is enabled. The output log displays the fault which has occurred when the voltage is enabled.

Example: Enabling 12V output

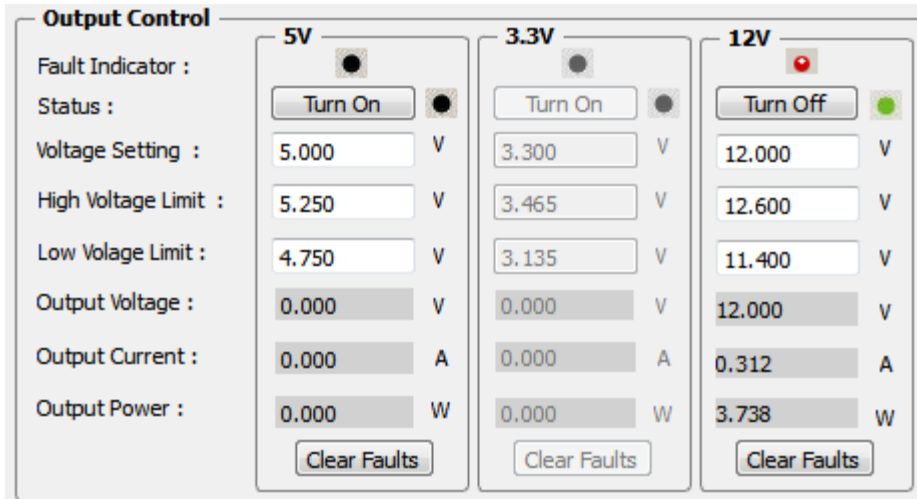
- Press on the “Turn On” button to enable the voltage.
- Enter the Voltage Setting, High Voltage Limit, Low Voltage Limit values.
- Output Voltage, Output Current, Output Power values of 12V are read and updated.

Output Control			
	5V	3.3V	12V
Fault Indicator :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Status :	Turn On <input checked="" type="checkbox"/>	Turn On <input type="checkbox"/>	Turn Off <input checked="" type="checkbox"/>
Voltage Setting :	5.000 V	3.300 V	12.000 V
High Voltage Limit :	5.250 V	3.465 V	12.600 V
Low Voltage Limit :	4.750 V	3.135 V	11.400 V
Output Voltage :	0.000 V	0.000 V	12.000 V
Output Current :	0.000 A	0.000 A	0.312 A
Output Power :	0.000 W	0.000 W	3.738 W
	Clear Faults	Clear Faults	Clear Faults

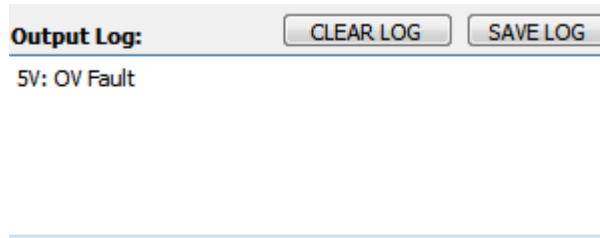
Figure 2: Output Control

Example: Over fault occurrence when 12V output is enabled.

- When the 12V is enabled and over voltage fault occurs, the LED indicator of 12V LED is red in color.





- The fault that occurred is displayed in the output log.





3. DUTY CYCLE CONTROLLER

- Select the power supply outputs which are controlled by the duty cycle controller in the “Select Outputs to Control” group box.
- Provide Cycle time and Power On Time.
- Press the “Start” button to start the duty cycle and press “Stop” button to stop the duty cycle.
- Duty Cycle percentage is displayed based on the power on and cycle time.
- The “Power On/Off Indicators” displays the enabled and disabled status of the output controls.

-  Output is disabled
-  Output is enabled

- By selecting the outputs to be controlled by the duty cycle controller, the corresponding outputs are disabled in output control section.

Example: Controlling 3.3V, 5V, 12V outputs

- Select the 3.3V, 5V, 12V outputs in the “Select Outputs to Control” group box.
- Cycle time and Power On Time are provided as 600 seconds and 30 seconds respectively.
- Press the “Start” button.
- Duty Cycle percentage is displayed based on the power on and cycle time.
- The “Power On/Off Indicators” displays  when the outputs are enabled and  when outputs are disabled.
- 12V, 3.3V, 5V outputs are disabled in output control section.

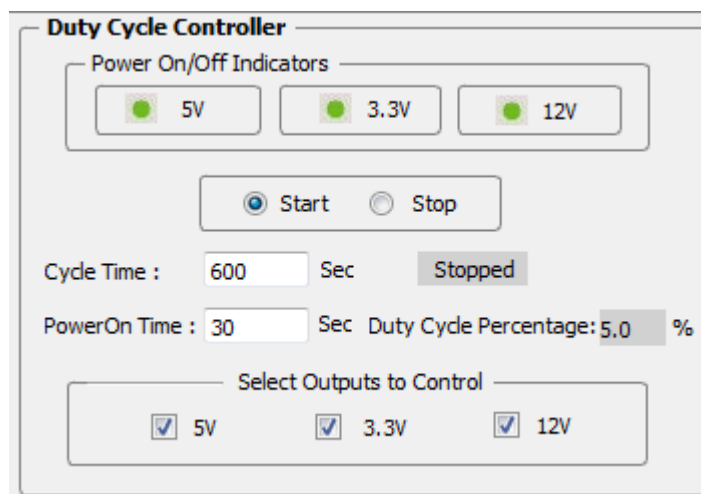


Figure 3: Duty Cycle Controller

4. CONFIGURATION

4.1. Load Configuration to Power Supply

- Press on the “Load Configuration to Power Supply” button.
- It loads the configuration from the file chosen by the user to the power supply.

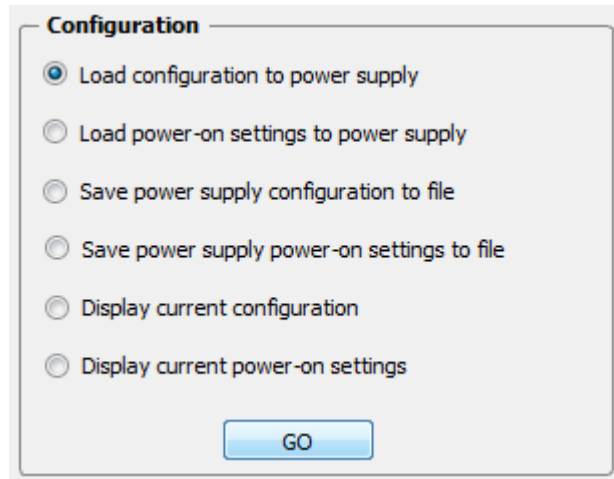
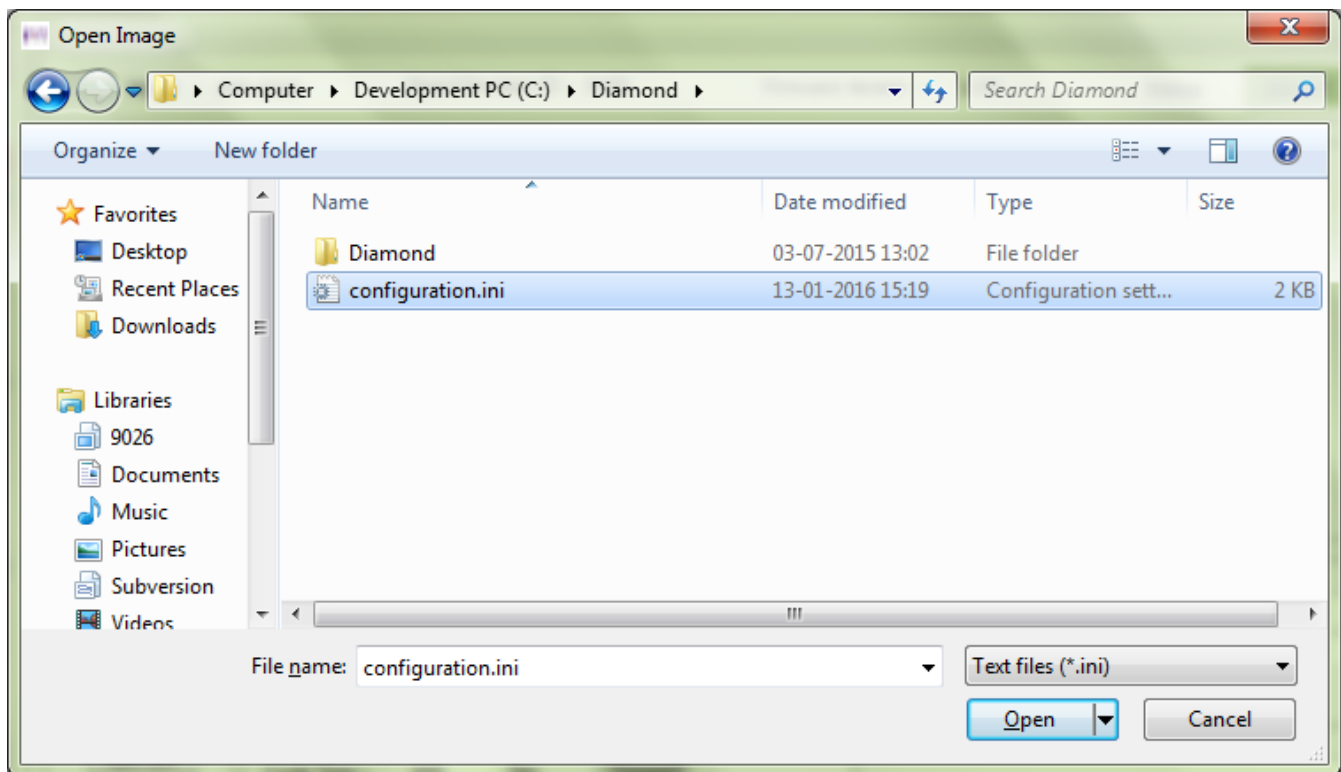


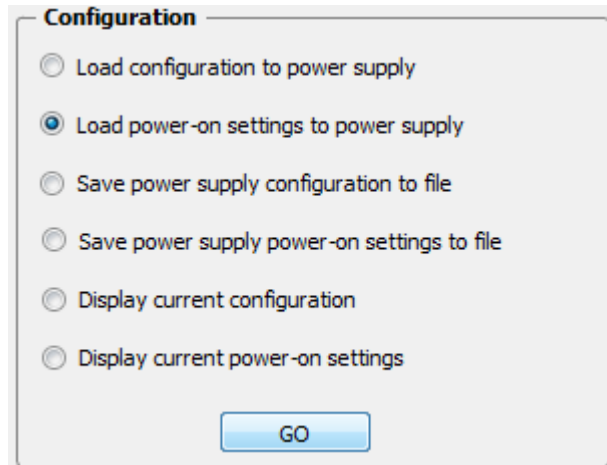
Figure 4: Configuration

- Browse to the destination folder containing the configuration file and press “Open” button.

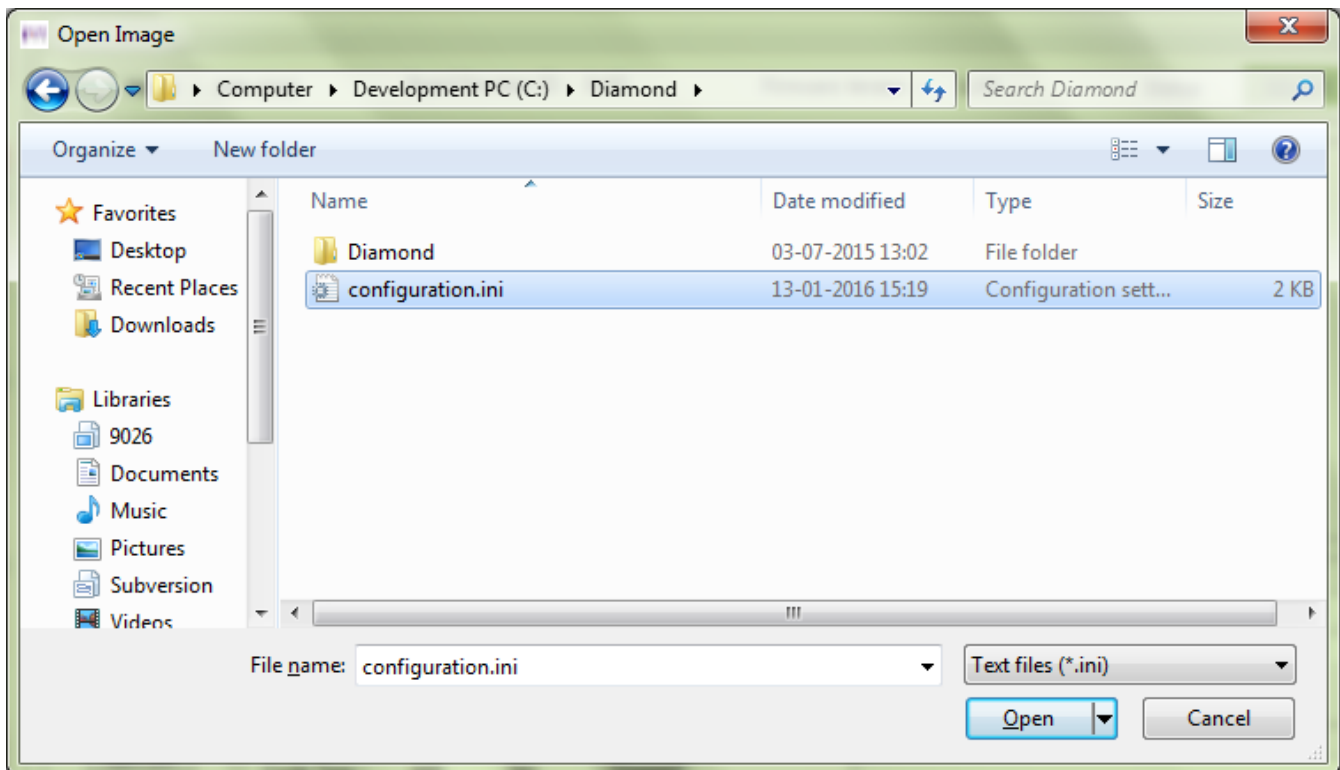


4.2. Load Power-On Settings to Power Supply

- Press on the “Load Power-On Settings to Power Supply” button.
- It loads the configuration from the file chosen by the user to the power-on settings.

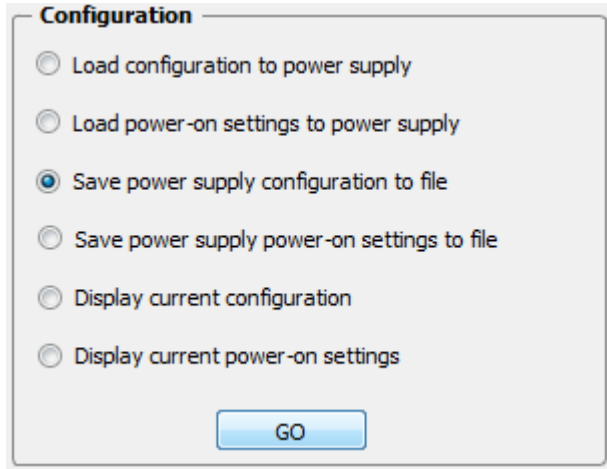


- Browse to the destination folder containing the configuration file and press “Open” button.

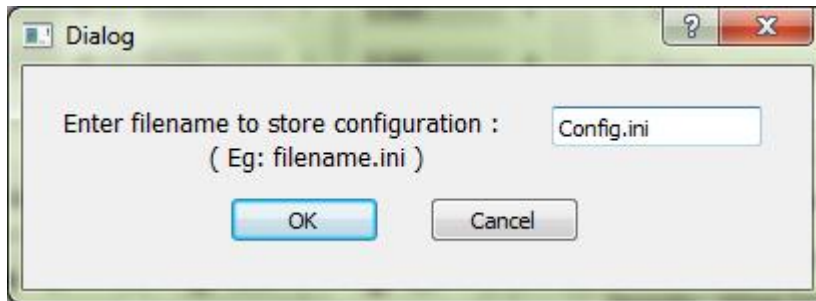


4.3. Save Power Supply Configuration to file

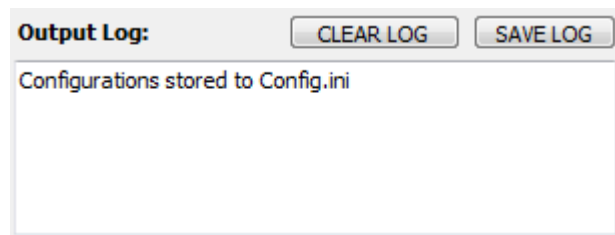
- Press on the “Save power supply configuration to file” button.
- It saves the power supply configuration to the file.



- Enter the name for file with .int extension.

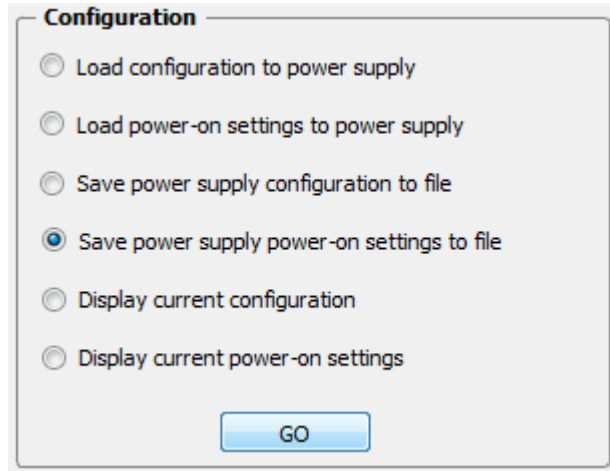


- The output Log shows the status.

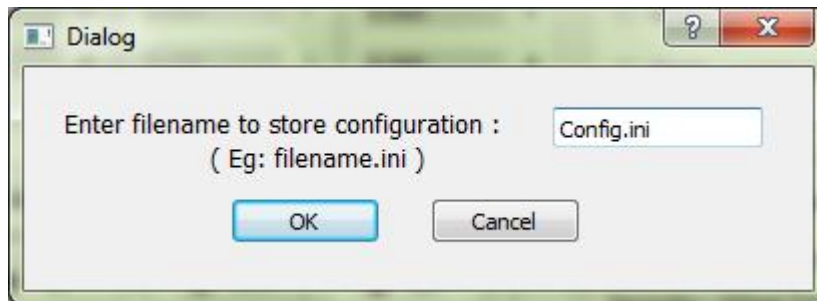


4.4. Save Power Supply Power-on Settings to file

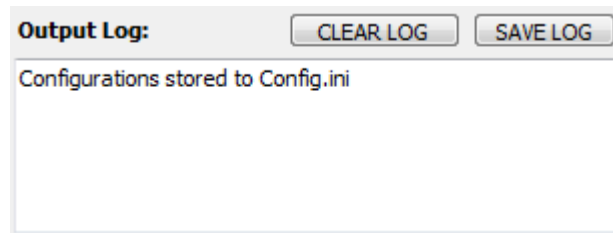
- Press on the “Save power supply power-on settings to file” button.
- It saves the power supply power-on settings configuration to the file.



- Enter the name for file with .in extension.

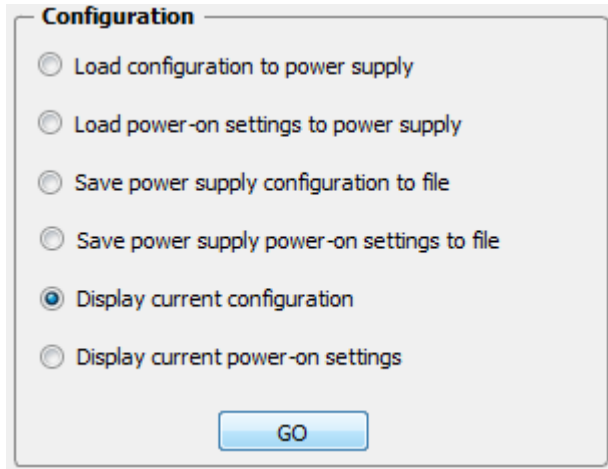


- The output Log shows the status.

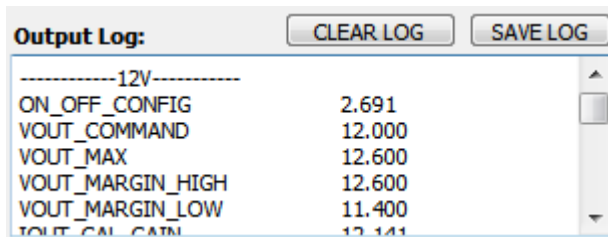


4.5. Display Current Configuration

- Press on the “Display Current Configuration” button.
- It displays the current configuration of the power supply.

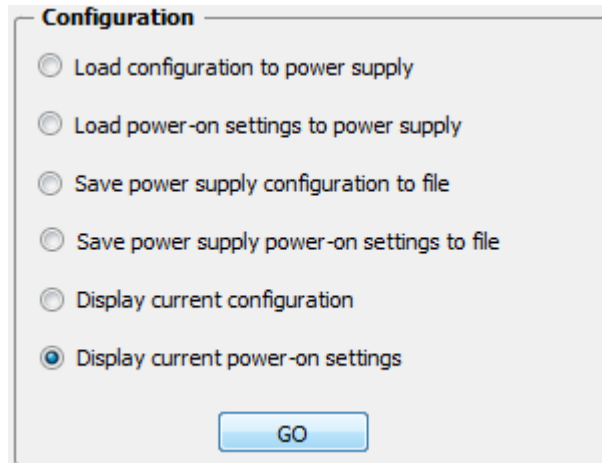


- Configuration of the power supply is displayed in the “Output Log”.
- The configuration can be stored in a file by clicking on the “SAVE LOG” button.
- “Output Log” can be cleared by clicking on the “CLEAR LOG” button.

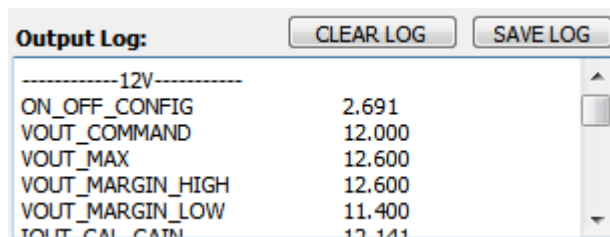


4.6. Display Current Configuration

- Press on the “Display Current Power On Settings” button.
- It displays the current configuration of the power-on settings.



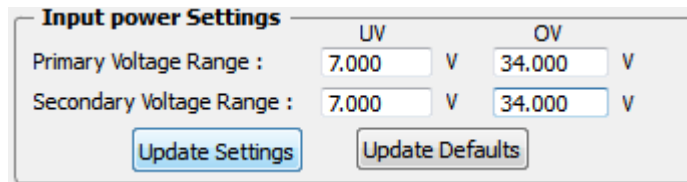
- Configuration of the power-on settings is displayed in the “Output Log”.
- The configuration can be stored in a file by clicking on the “SAVE LOG” button.
- “Output Log” can be cleared by clicking on the “CLEAR LOG” button.



5. INPUT POWER SETTINGS

5.1. Update Settings

- Press on the “Update Settings” button.
- Enter the voltages in the “UV” and “OV” section of Primary and Secondary Voltage Range.
- The voltages in the “UV” and “OV” section of Primary voltage range updates the RDACs and EEPROMs of the POT1 and POT2.
- The voltages in the “UV” and “OV” section of Secondary voltage range updates the RDACs and EEPROMs of the POT3 and POT4.



Input power Settings

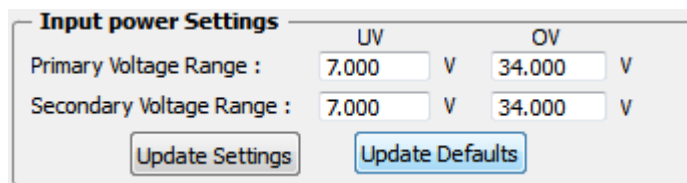
	UV		OV	
Primary Voltage Range :	7.000	V	34.000	V
Secondary Voltage Range :	7.000	V	34.000	V

Update Settings Update Defaults

Figure 5: Update Settings

5.2. Update Defaults

- Press on the “Update Defaults” button.
- Enter the voltages in the “UV” and “OV” section of Primary and Secondary Voltage Range.
- It updates the default values of the four POTs in the PIC flash based on the user input.



Input power Settings

	UV		OV	
Primary Voltage Range :	7.000	V	34.000	V
Secondary Voltage Range :	7.000	V	34.000	V

Update Settings Update Defaults

Figure 6: Update Defaults

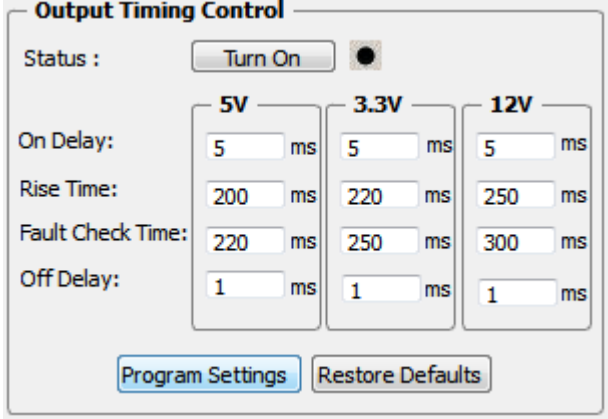
6. OUTPUT TIMING CONTROL

6.1. Program Settings

- Enter On Delay time, Rise Time, Fault Check Time, Off Delay time in milliseconds.
- Press “Program Settings” button.
- It loads the On Delay time, Rise Time, Fault Check Time, Off Delay time of 12V, 5V, and 3.3V into the LTC2974 RAM.

6.2. Restore Defaults

- Press “Restore Defaults” button.
- It loads the On Delay time, Rise Time, Fault Check Time, Off Delay time of 12V, 5V, 3.3V into the LTC2974 RAM.
- It loads default the On Delay time, Rise Time, Fault Check Time, Off Delay time value of 12V, 5V, 3.3V from the PIC’s flash storage to the GUI.



	5V	3.3V	12V
On Delay:	5 ms	5 ms	5 ms
Rise Time:	200 ms	220 ms	250 ms
Fault Check Time:	220 ms	250 ms	300 ms
Off Delay:	1 ms	1 ms	1 ms

Figure 8: Output Timing Control

7. A/D SECTION

- Select the channel number.
- Press Go.
- The voltage of the selected channel pin is displayed in the “Voltage” box.

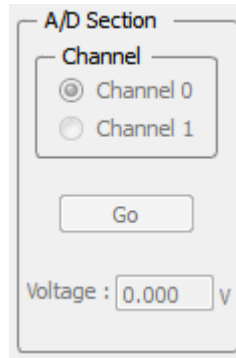


Figure 7: A/D Section

8. EXIT

- Press on the “EXIT” button.
- It closes the graphical control panel application.

