



LED Manager for Intel® NUC

User Guide

Version 2.0.0

October 11, 2018



INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

UNLESS OTHERWISE AGREED IN WRITING BY INTEL, THE INTEL PRODUCTS ARE NOT DESIGNED NOR INTENDED FOR ANY APPLICATION IN WHICH THE FAILURE OF THE INTEL PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.

The products described in this document may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order.

This document contains information on products in the design phase of development.

All products, platforms, dates, and figures specified are preliminary based on current expectations, and are subject to change without notice. All dates specified are target dates, are provided for planning purposes only and are subject to change.

This document contains information on products in the design phase of development. Do not finalize a design with this information. Revised information will be published when the product is available. Verify with your local sales office that you have the latest datasheet before finalizing a design.

Intel, Intel NUC, Intel Compute Stick, and the Intel logo are trademarks of Intel Corporation in the U.S. and other countries.

*Other names and brands may be claimed as the property of others.

Copyright © 2017, Intel Corporation. All rights reserved.



Contents

1	INTRODUCTION	1
1.1	Getting Started	1
1.1.1	Supported NUCs	1
1.1.2	BIOS Settings	1
1.1.2.1	Disable LED Zones	2
2	TRAY MENU	3
2.1	Disable All	3
2.2	Profiles	3
2.3	Open and Exit	3
3	USER INTERFACE	4
3.1	Selecting an LED Zone	5
3.2	LED Zone Indicators	5
3.2.1	Power State	6
3.2.2	Disk Drive Activity	7
3.2.3	CPU Usage	8
3.2.4	Wireless Enabled	9
3.2.5	Ethernet Activity	10
3.2.6	Power Limit	11
3.2.7	Disable	12
3.2.7.1	Disable All	12
3.3	Profiles	13
3.3.1	Create a New Profile	13
3.3.2	Apply a Saved Profile	14
3.3.3	Update a Saved Profile	14
3.3.4	Change a Profile Name	14
3.3.5	Delete a Saved Profile	14
3.3.6	Export or Import Saved Profile	14
4	COMMAND LINE INTERFACE	15
4.1.1	How to access the command line options	15



4.1.2	How to utilize the command line options	15
4.1.3	List of commands available	15
5	TROUBLESHOOTING	16



Revision History

Revision Number	Description	Revision Date
2.0.0	Added CLI and new profiles options	October 11, 2018
1.0.0	Initial release.	April 5, 2018



1 Introduction

The LED Manager for Intel® NUC provides the ability to set the color and behavior of the LEDs on supported NUC products.

1.1 Getting Started

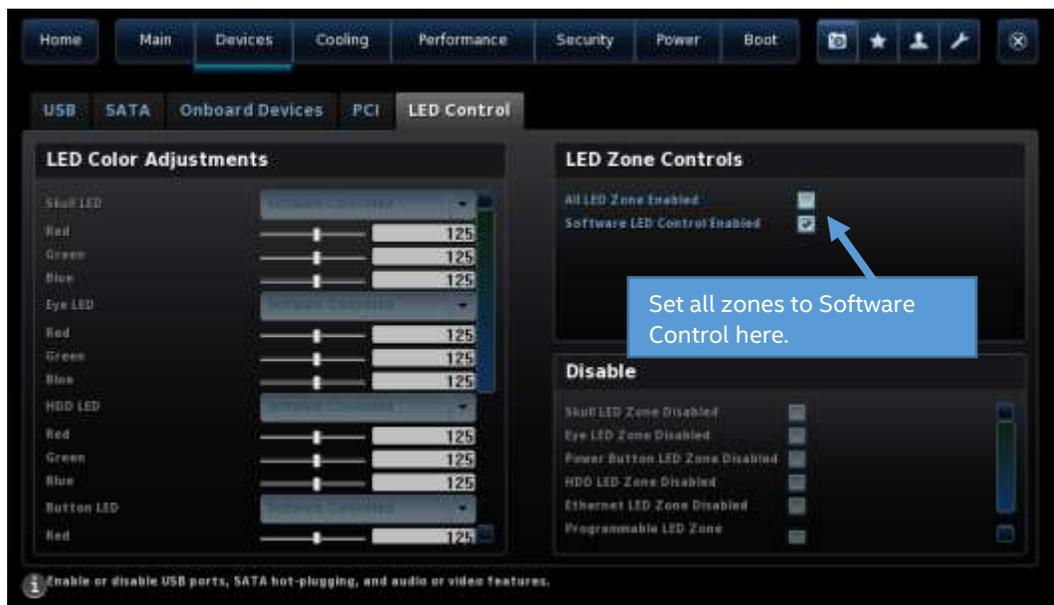
This document provides a high-level description of how to use the LED Manager for Intel® NUC. Before using this tool, Intel recommends updating to the latest BIOS. Before using this tool, Intel recommends updating the BIOS of the Intel® NUC to the latest version (<http://downloadcenter.intel.com>) and loading the default settings (F9).

1.1.1 Supported NUCs

- Intel® NUC Kit NUC8i7HNK
- Intel® NUC Kit NUC8i7HVK

1.1.2 BIOS Settings

In order to control the LEDs, all the LED Zones should be enabled and all of the *LED Color Adjustments* should be set to *Software Controlled*. Both are the default settings for the BIOS, so no changes should be needed.





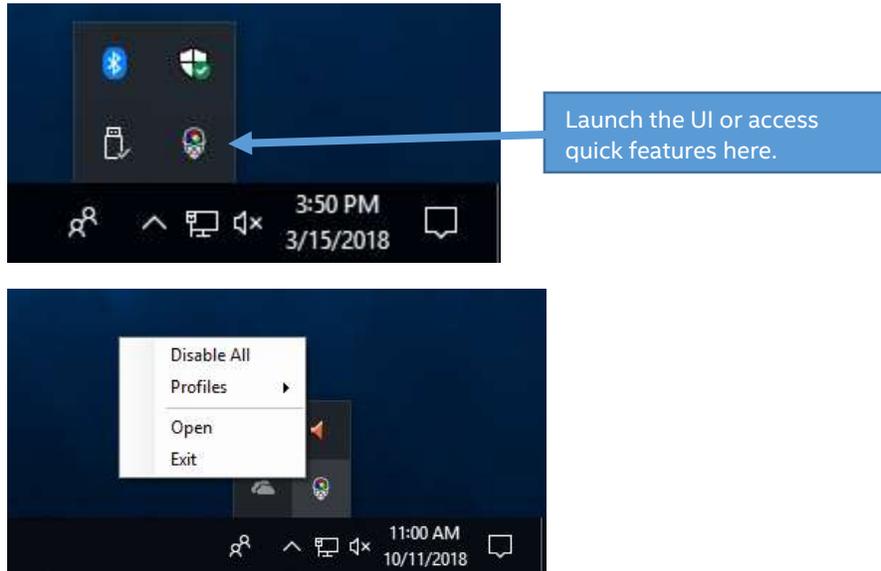
1.1.2.1 Disable LED Zones

All of the LED zones can be individually disabled in the BIOS setup menu. To do this, uncheck the *Software LED Control Enabled* checkbox and set the *LED Color Adjustments* individually to *Disable*. If a zone is disabled using this method, it will still appear in the UI but the application will not be able to change the settings of the LEDs.



2 Tray Menu

When the LED Manager for Intel® NUC is installed, it also installs a shortcut on the taskbar. This allows a single click to open the application, exit the application or disable all of the LEDs.



2.1 Disable All

Disable All turns off all the LEDs on the NUC.

2.2 Profiles

Profiles displays a drop down menu listing all of the profiles you have created. Clicking a profile will change your settings to the selected profile.

2.3 Open and Exit

Open launches the main User Interface (UI). *Exit* closes both the tray application and the main UI (if it is open).

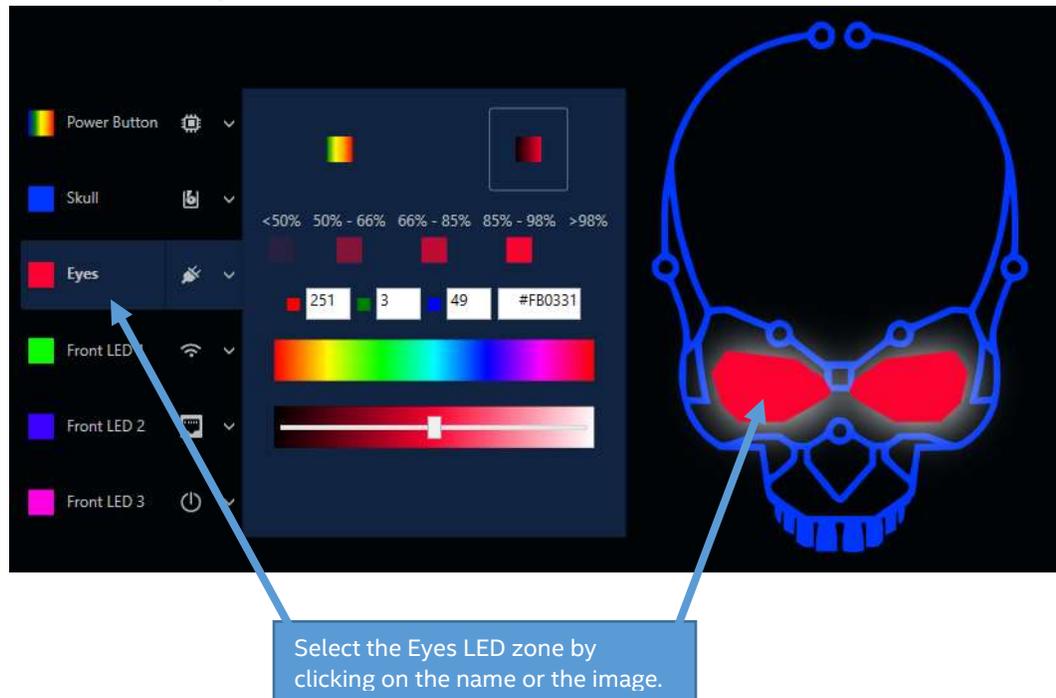
3 *User Interface*

The application provides an interface for the user to control the LED settings and save profiles for future use.



3.1 Selecting an LED Zone

Each LED zone can be controlled independently from the others. To select an LED zone, click on the zone in the image or the name of the zone.



3.2 LED Zone Indicators

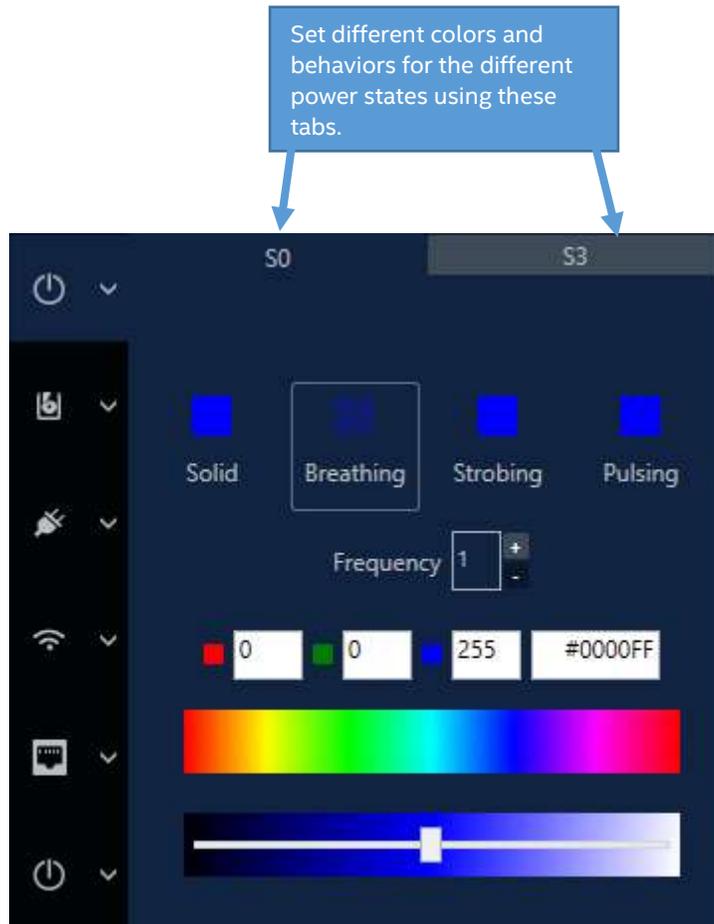
When an LED zone is selected, the following options are available:

- Power State
- Disc Drive Activity
- CPU Usage
- Ethernet Activity
- Power Limit
- Wireless Enabled

Note: The LED colors will be updated in real-time as the changes are made in the application.

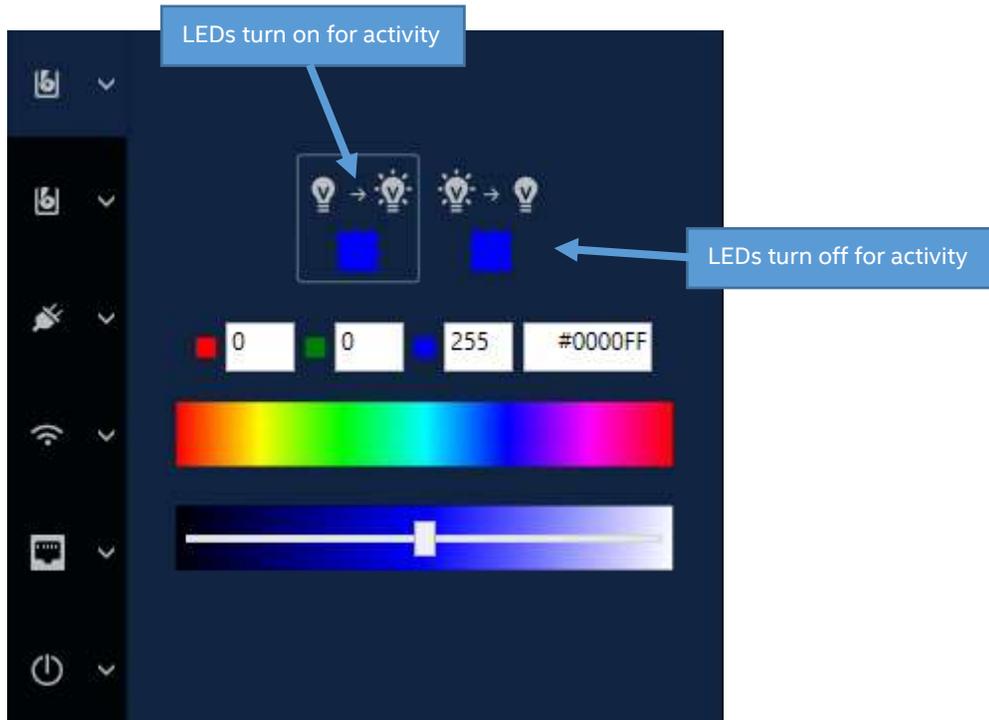
3.2.1 Power State

When power state is selected, the LEDs will display the chosen color and behavior for the power state selected (S0 or S3). The frequency option is only available if *Breathing*, *Strobing* or *Pulsing* are selected.



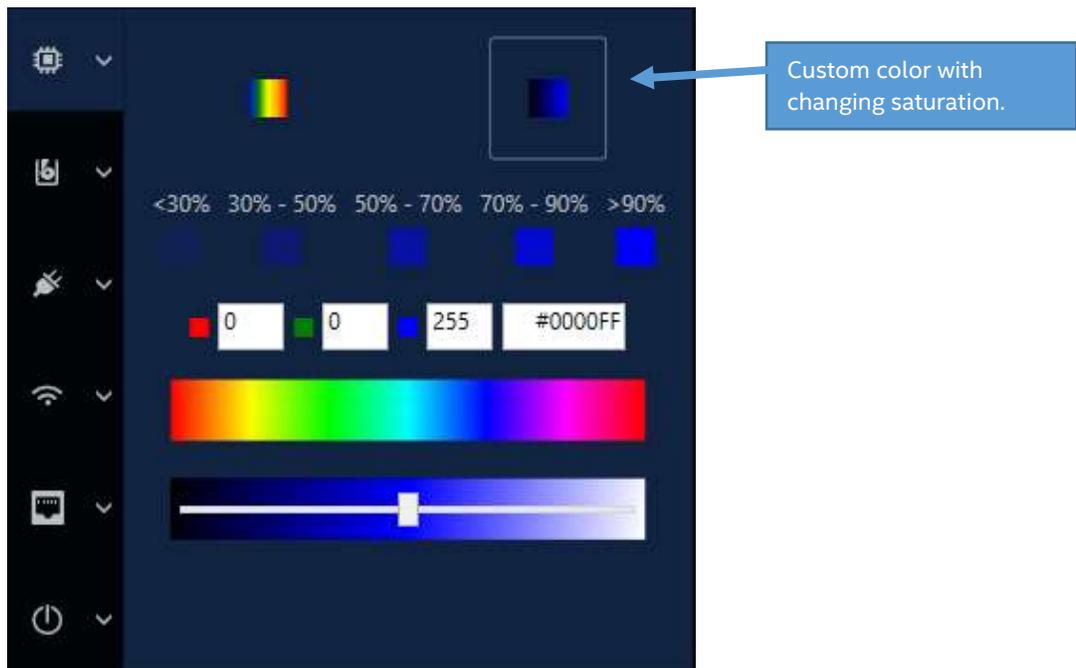
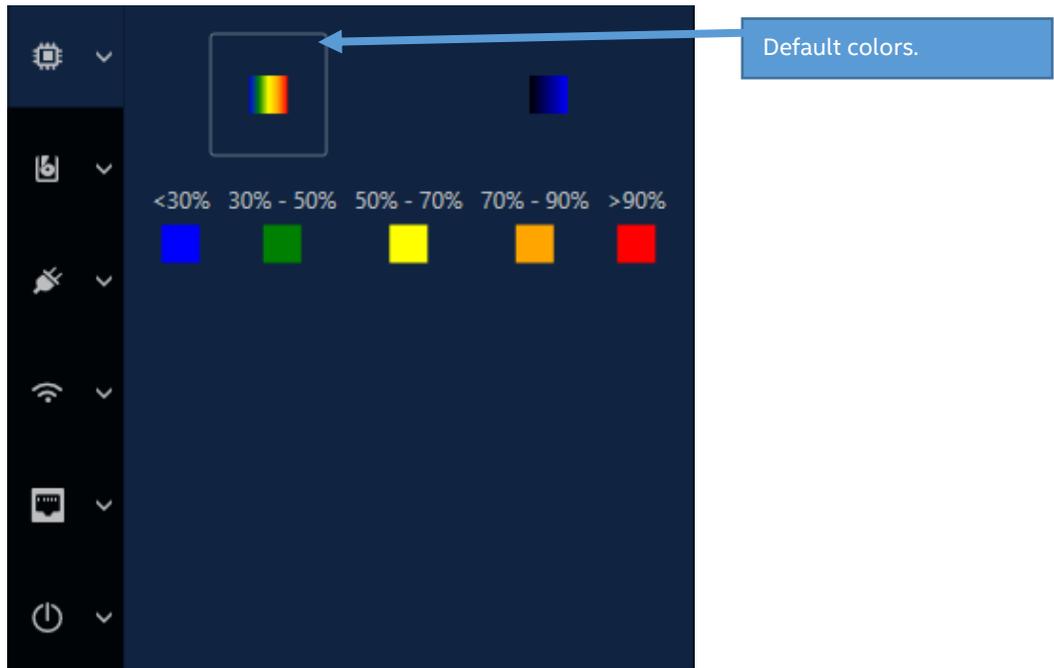
3.2.2 Disk Drive Activity

When disk drive activity is selected, it allows control of both the color and whether the LEDs turn on or off for disk activity.



3.2.3 CPU Usage

CPU utilization monitors CPU use and updates the color of the LEDs accordingly. When *default colors* is selected, the LEDs change from blue, when less than 30% of the CPU is being used, to red, when more than 90% is being used. A custom color can also be selected that changes in saturation based on CPU utilization.

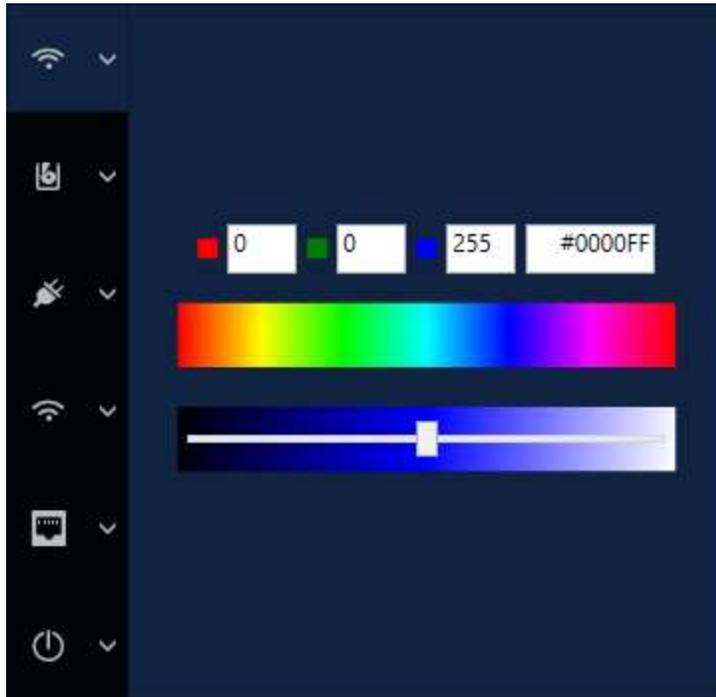




3.2.4 Wireless Enabled

Front LED 1 defaults to showing the activity from Wireless.

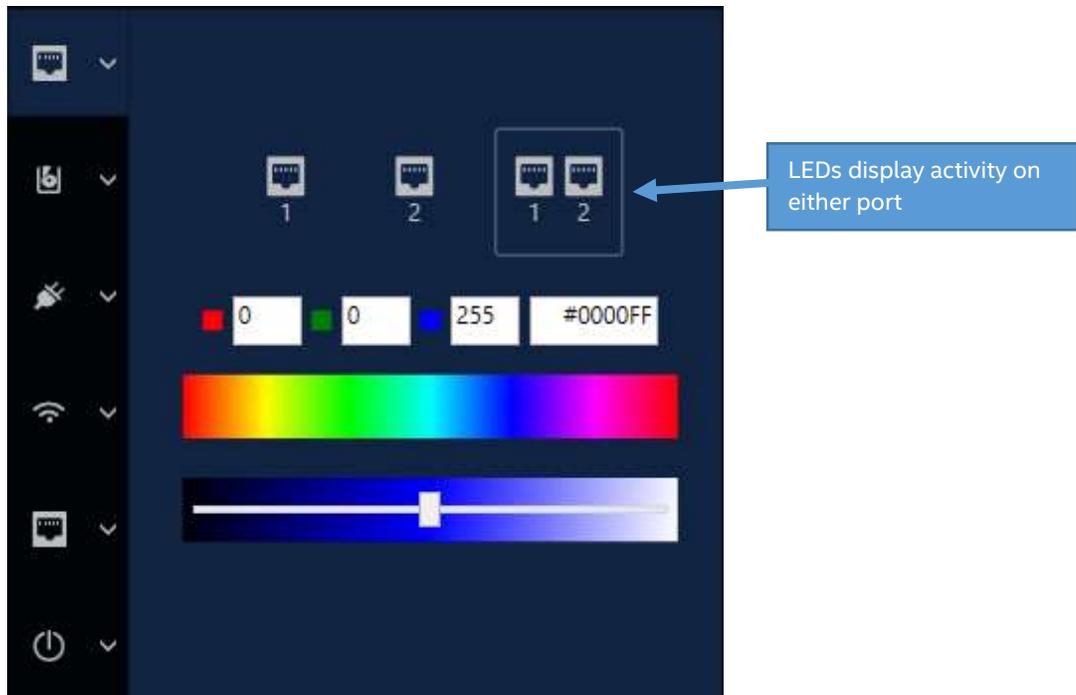
The LEDs turn on to the specified color when wireless is enabled. When wireless is disabled, the LEDs are off.



3.2.5 Ethernet Activity

Front LED 2 defaults to showing the activity from the LAN port(s).

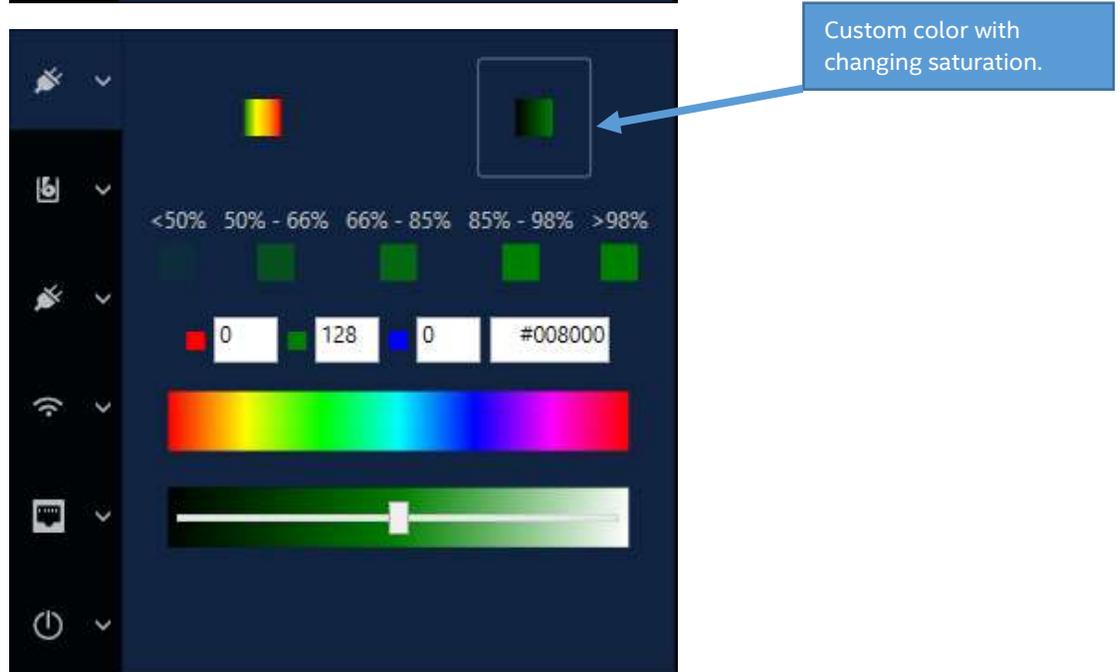
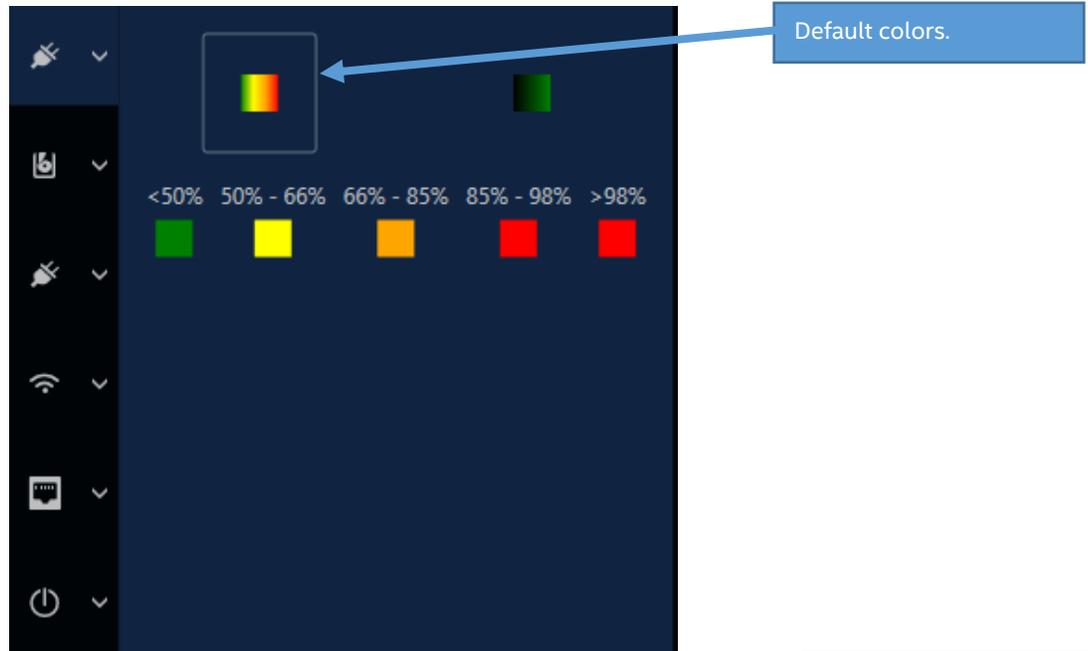
The default state of Ethernet activity is for the LED to be off and to blink the selected color when activity is detected. The user can also choose which of the two Ethernet ports is monitored for activity or choose to monitor both ports. If both ports are monitored the LED shows when activity occurs on either of them.



3.2.6 Power Limit

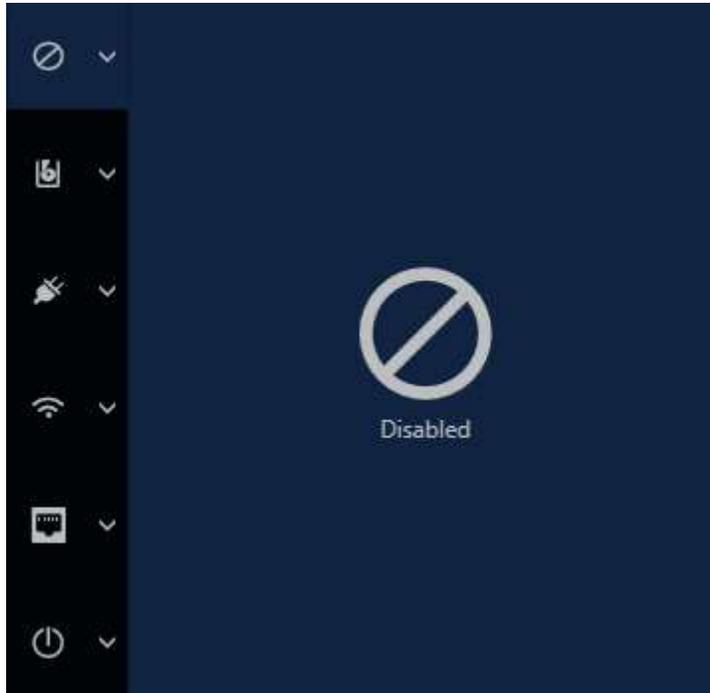
Front LED 3 defaults to showing the power limit activity.

When *default colors* is selected, the LEDs change from green, when less than 50% of power is being used, to red, when greater than 85% is being used. A custom color can also be selected that changes in saturation based on power usage. When greater than 98% of power is used the LEDs also start flashing.



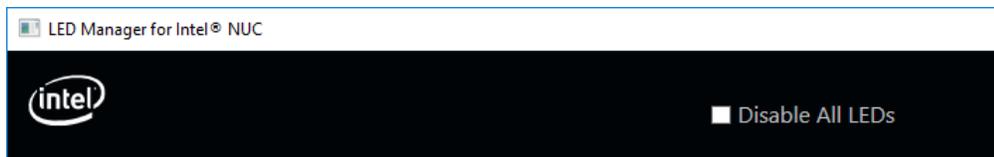
3.2.7 Disable

The user can disable any of the LED zones individually or disable all of the LED zones.



3.2.7.1 Disable All

The user can quickly disable all of the LED zones, by selecting the *Disable All LEDs* checkbox.

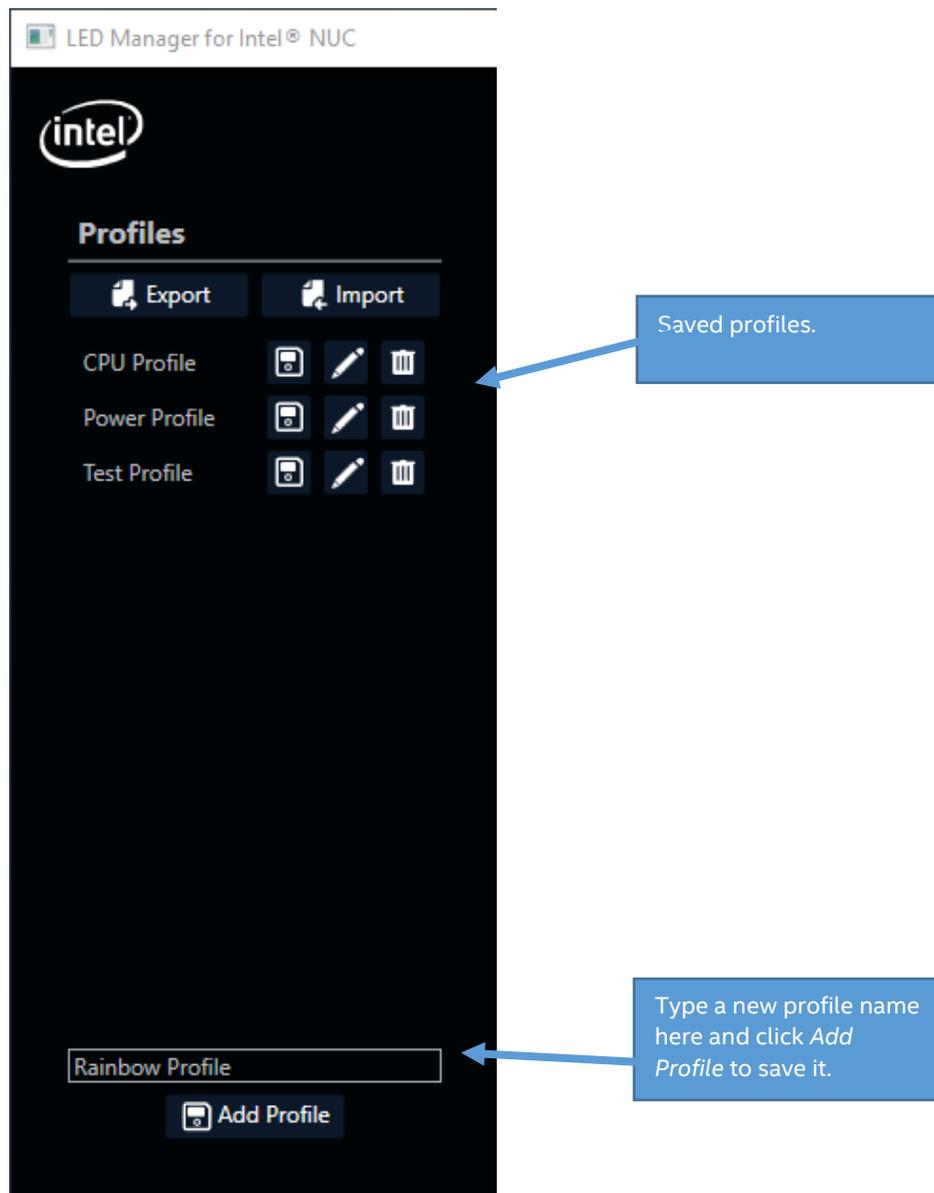


3.3 Profiles

Settings can be saved as profiles, which gives the user the ability to quickly switch LED combinations and to export those combinations to other NUCs.

3.3.1 Create a New Profile

Once the desired LED settings have been applied, type a name in the box at the bottom of the profiles section and click Add Profile. When the profile has been saved, it appears in the list of saved profiles. Profile names are limited to 20 characters and cannot include any special characters.



3.3.2 Apply a Saved Profile

Click on the name of a saved profile to apply the settings.

3.3.3 Update a Saved Profile

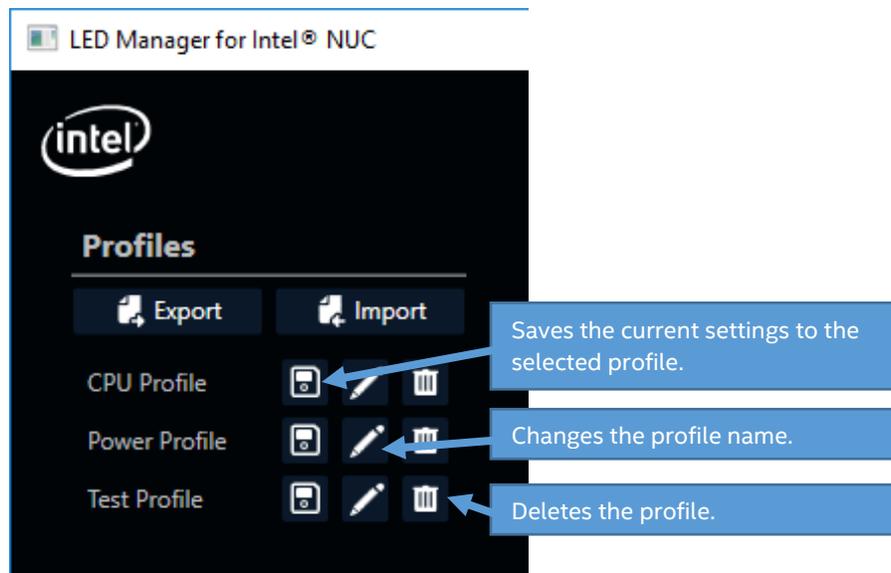
To update a saved profile, first, make the desired changes. Then, select the profile to update and click the *save* button. This prompts the user to replace the old profile.

3.3.4 Change a Profile Name

The *edit* button allows the user to change the profile name.

3.3.5 Delete a Saved Profile

The *delete* button eliminates the saved profile.



3.3.6 Export or Import Saved Profile

Saved profiles can be imported from or exported to use on other NUCs with the *Export* and *Import* buttons.

Note: It is only possible to share profiles between devices with the same LED zones and capabilities.

4 Command Line Interface

4.1.1 How to access the command line options

This application allows users to utilize through the command line to perform some of the LED Manager abilities.

To access these commands, you must first navigate to the folder that contains the LEDManagerCLI.exe.

Its default location is:

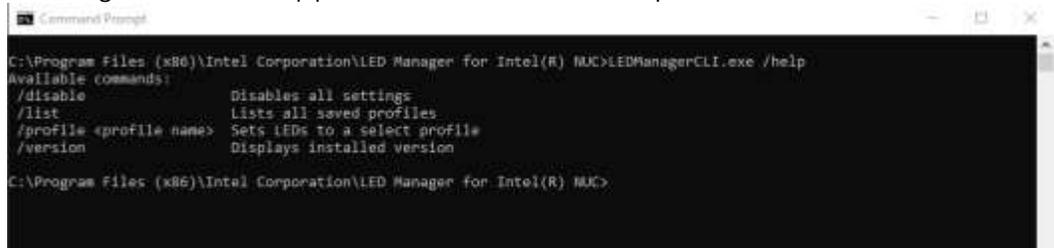
C:\Program Files (x86)\Intel Corporation\LED Manager for Intel® NUC



4.1.2 How to utilize the command line options

The command line options can be accessed by typing "LEDManagerCLI.exe", followed by any of the options listed below.

LEDManagerCLI.exe /help provides a list of the available options.



4.1.3 List of commands available

The following commands are available:

- | | |
|--|--|
| • /disable | - Disables all settings. |
| • /list | - Lists all saved profiles. |
| • /profile <profile name> | - Sets LEDs to a selected profile. |
| • /version | - Displays installed version. |
| • /help | - Lists all available commands line options. |

5 Troubleshooting

If the LED Manager for Intel® NUC is unable to update the LEDs, verify the following:

1. The hardware is on the supported devices list.
See *Section 1.1.1*.
2. The LED zones are set to Software Controlled in BIOS.
See *Section 1.1.2*.
3. Make sure the *LED Manager for Intel® NUC Service* is installed and running.
To do that, open the *Services* application and make sure the *LED Manager for Intel® NUC Service* is running. If the service status is *Stopped*, attempt to *Start* the service.

