intel.

INTEL® NUC SOFTWARE STUDIO FOR LAPTOPS

Intel® NUC M15 Laptop Kit – LAPRC710 & LAPRC510 – User Guide

V1.2   15 January 2023

Systems Product Group
Client Computing Group, Intel® Corporation

Legal Disclaimer

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.

A "Mission Critical Application" is any application in which failure of the Intel Product could result, directly or indirectly, in personal injury or death. SHOULD YOU PURCHASE OR USE INTEL'S PRODUCTS FOR ANY SUCH MISSION CRITICAL APPLICATION, YOU SHALL INDEMNIFY AND HOLD INTEL AND ITS SUBSIDIARIES, SUBCONTRACTORS AND AFFILIATES, AND THE DIRECTORS, OFFICERS, AND EMPLOYEES OF EACH, HARMLESS AGAINST ALL CLAIMS COSTS, DAMAGES, AND EXPENSES AND REASONABLE ATTORNEYS' FEES ARISING OUT OF, DIRECTLY OR INDIRECTLY, ANY CLAIM OF PRODUCT LIABILITY, PERSONAL INJURY, OR DEATH ARISING IN ANY WAY OUT OF SUCH MISSION CRITICAL APPLICATION, WHETHER OR NOT INTEL OR ITS SUBCONTRACTOR WAS NEGLIGENT IN THE DESIGN, MANUFACTURE, OR WARNING OF THE INTEL PRODUCT OR ANY OF ITS PARTS.

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.

Copies of documents which have an order number and are referenced in this document, or other Intel literature, may be obtained by calling 1-800-548-4725, or go to: http://www.intel.com/design/literature.htm%20 Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, visit Intel Performance Benchmark Limitations

All products, computer systems, dates and figures specified are preliminary based on current expectations, and are subject to change without notice.

Celeron, Intel, Intel logo, Intel Core, Intel Inside, Intel Inside logo, Intel. Leap ahead., Intel. Leap ahead. logo, Intel NetBurst, Intel SpeedStep, Intel XScale, Itanium, Pentium, Pentium Inside, VTune, Xeon, and Xeon Inside are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Intel® Active Management Technology requires the platform to have an Intel® AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating or powered off. For more information, see http://www.intel.com/technology/iamt.

64-bit computing on Intel architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers and applications enabled for Intel® 64 architecture. Performance will vary depending on your hardware and software configurations. Consult with your system vendor for more information.

No computer system can provide absolute security under all conditions. Intel® Trusted Execution Technology is a security technology under development by Intel and requires for operation a computer system with Intel® Virtualization Technology, an Intel Trusted Execution Technology-enabled processor, chipset, BIOS, Authenticated Code Modules, and an Intel or other compatible measured virtual machine monitor. In addition, Intel Trusted Execution Technology requires the system to contain a TPMv1.2 as defined by the Trusted Computing Group and specific software for some uses. See http://www.intel.com/technology/security/ for more information.

†Hyper-Threading Technology (HT Technology) requires a computer system with an Intel® Pentium® 4 Processor supporting HT Technology and an HT Technology-enabled chipset, BIOS, and operating system. Performance will vary depending on the specific hardware and software you use. See www.intel.com/products/ht/hyperthreading_more.htm for more information including details on which processors support HT Technology.

Intel® Virtualization Technology requires a computer system with an enabled Intel® processor, BIOS, virtual machine monitor (VMM) and, for some uses, certain platform software enabled for it. Functionality, performance or other benefits will vary depending on hardware and software configurations and may require a BIOS update. Software applications may not be compatible with all operating systems. Please check with your application vendor.

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

Other vendors are listed by Intel as a convenience to Intel's general customer base, but Intel does not make any representations or warranties whatsoever regarding quality, reliability, functionality, or compatibility of these devices. This list and/or these devices may be subject to change without notice.

Revision History

Version	Date	Description of Changes
1.0	August 2022	Initial Release
1.1	December 2022	Update uninstallation and Audio Tuning
1.2	January 2023	Add the behavior toe save button in Light Bar

Table of Contents

Intel® NUC Software Studio - Intel® NUC M15 Laptop Kit / User Guide

1   Introduction

Overview

The Intel® NUC Software Studio for Laptops allows an end user with Intel® NUC M15 Laptop Kit - LAPRC710 & LAPRC510 to monitor and tune various system, LED, display, and battery settings.

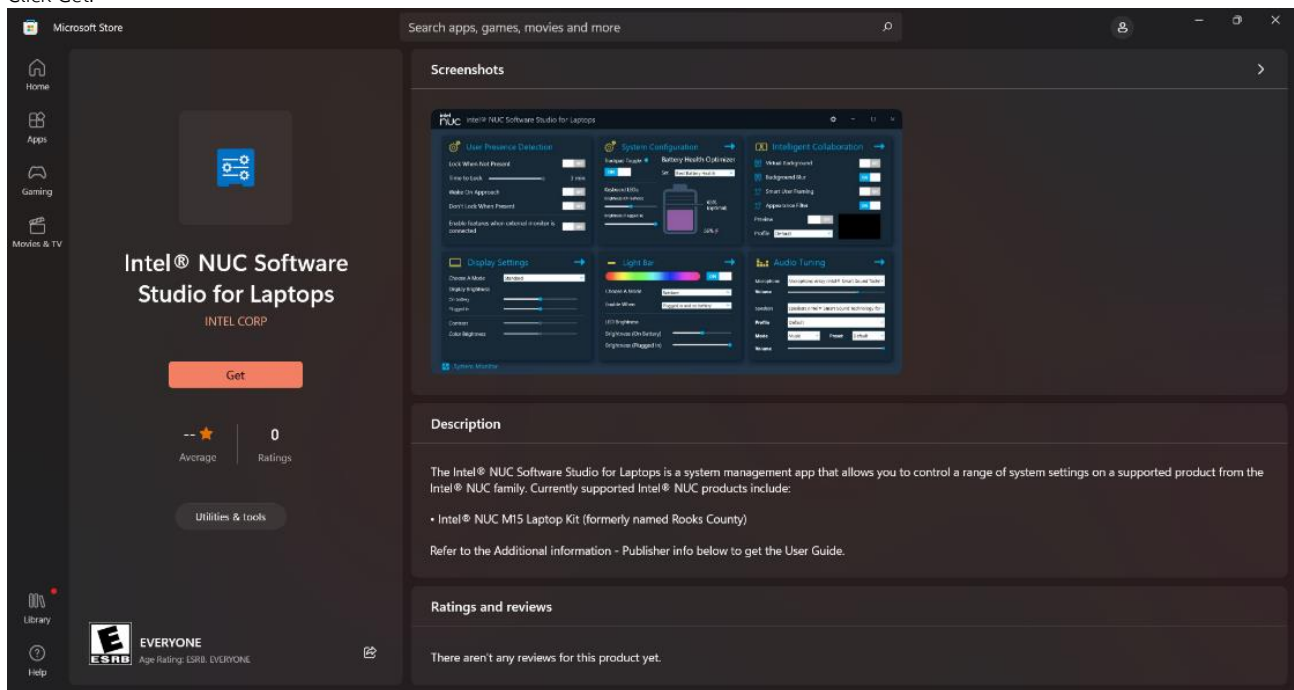**Supported Product**

Intel® NUC M15 Laptop Kit – LAPRC710 & LAPRC510

Supported Operating Systems

- Windows 11 version 21H2 and 22H2

2   Installation

Application Installation

1. Search for **Intel® NUC Software Studio for Laptops** application in the Microsoft Store.
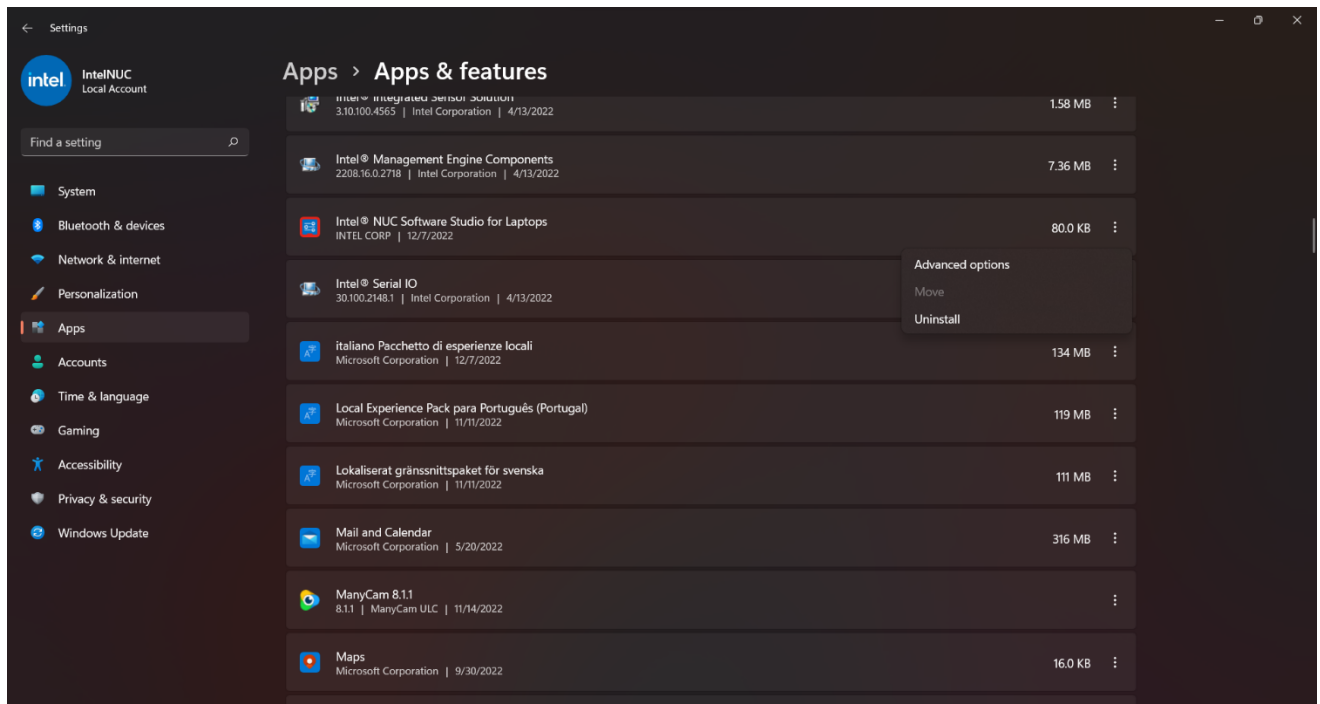
2. Click Get.

Note: Make sure that the system OS is in the whitelist as mentioned in Supported OS.

3. Once the application has been installed, click Open

Application Uninstallation

Open the Windows Start Menu

Click ⋮ on Intel® NUC Software Studio for Laptops and click Uninstall to continue following process..

3 Intel® NUC Software Studio for Laptops

Intel® NUC Software Studio for Laptops – Home Screen

The Intel® NUC Software Studio for Laptops home screen is displayed as shown below.

**Intel® NUC Software Studio for Laptops – Features**

Intel® NUC Software Studio for Laptops supports the below features on the Intel® NUC M15 Laptop Kit – LAPRC710 & LAPRC510:
1.   User Presence Detection

2.	System Configuration
3.	Intelligent Collaboration
4.	Display Settings
5.	Light Bar
6.	Audio Tuning

# 4	User Presence Detection

The User Presence Detection tile on the Home page allows the user access to toggles related to Lock and Wake settings based on detected user presence.
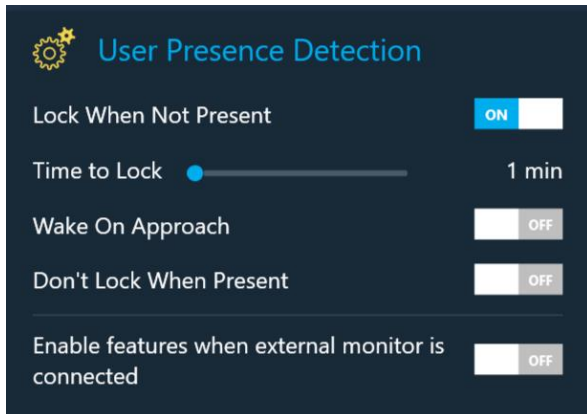
User Presence Detection – Available Toggles and Default Settings

Toggle	Default Setting
Lock When Not Present	OFF
Time to Lock	60 sec
Wake On Approach	OFF
Don't Lock When Present	OFF
External Monitor	OFF

User Presence Detection – Lock When Not Present

Using the Lock When Not Present toggle, the user can control User Presence Detection as follows

Lock When Not Present	Time to Lock Slider
On	Enabled
Off	Disabled

User Presence Detection – Time To Lock

 The following Time to Lock values can be set by the user:
- 1 min
- 1 min 30 sec
- 2 min
- 2 min 30 sec
- 3 min

# 5	System Configuration

System Configuration – Toggles and Controls

In addition to the Trackpad Toggle allowing the user to switch the Trackpad Off and On, the System Configuration screen also includes toggles and controls for the following:
Keyboard LEDs
Battery Health Optimizer

System Configuration - Keyboard LEDs

The following sliders can be used to adjust Keyboard LED brightness:
- Brightness (Plugged In)
- Brightness (On Battery)

System Configuration – Battery Health Optimizer

Mode	Default Charge Limit	Available Limit Range
Charge to 100%	100% (Fixed)	N/A
Customize	100%	50-100%
Best Battery Health	65% (Fixed)	N/A
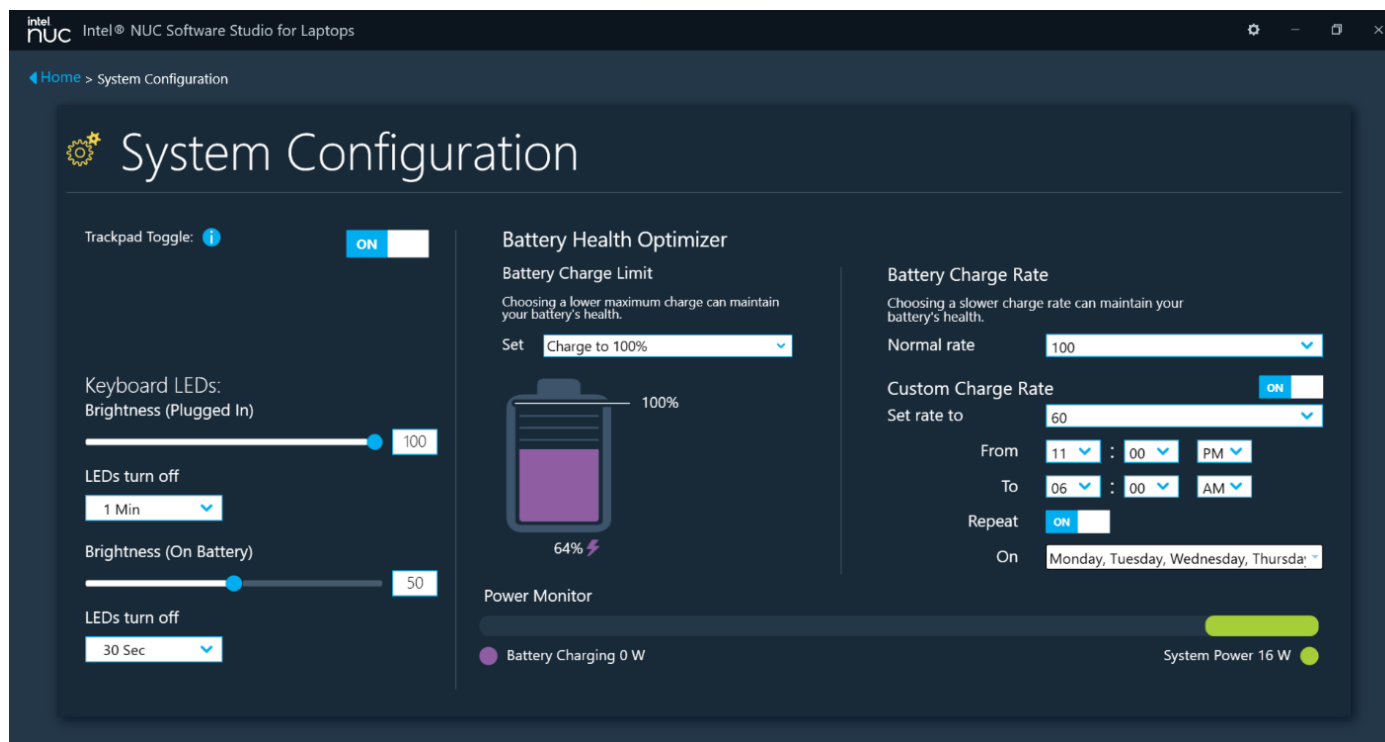
System Monitor

6   Intelligent Collaboration

Intelligent Collaboration – Backgrounds

Intelligent Collaboration supports the following user-accessible Background toggles:

Toggle	Default Value
Background Blur	Off
Virtual Background	Disabled

Intelligent Collaboration – Appearance

Toggle	Default Value
Lighting Correction	Off
Smart User Framing	Off
Eye Contact Correction	Off
Appearance Filter	Off

When enabled, the Appearance Filter slider is also enabled and offers the following settings:
- Low
- Medium
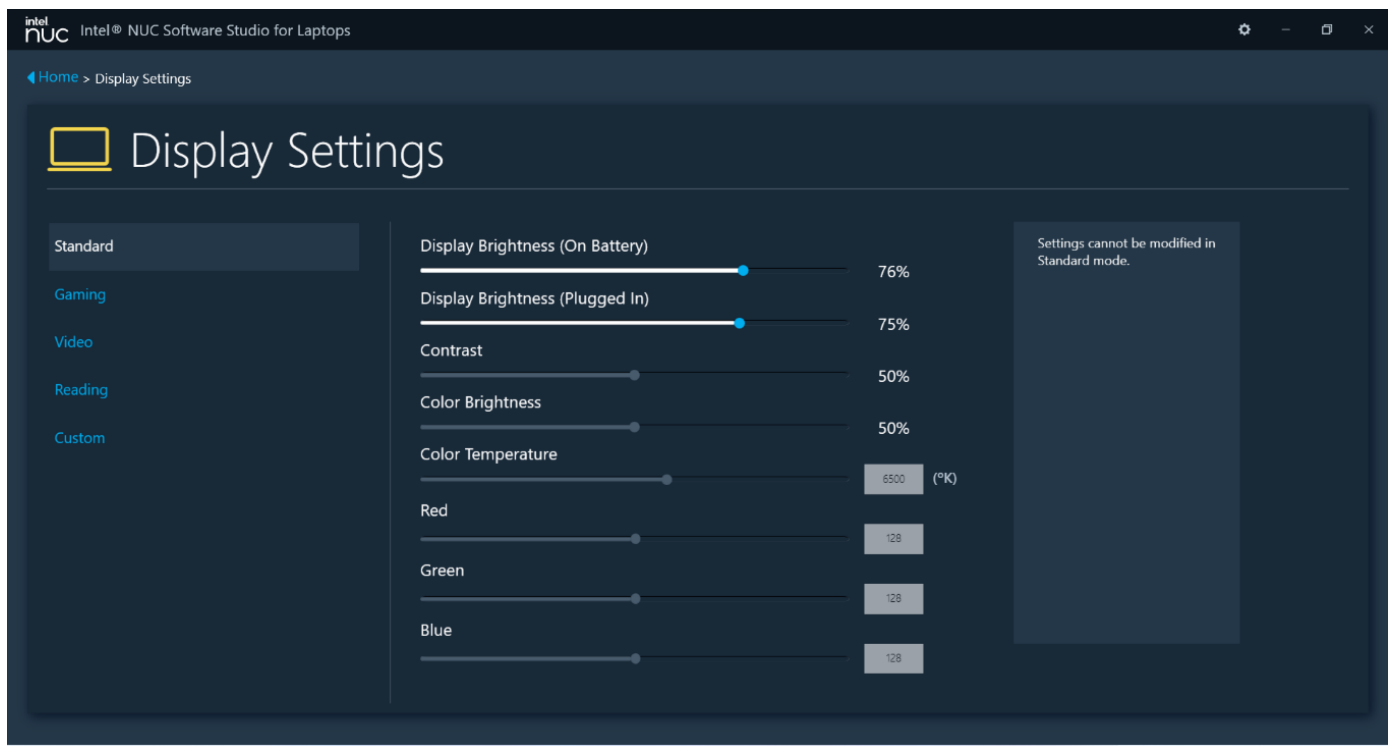- High
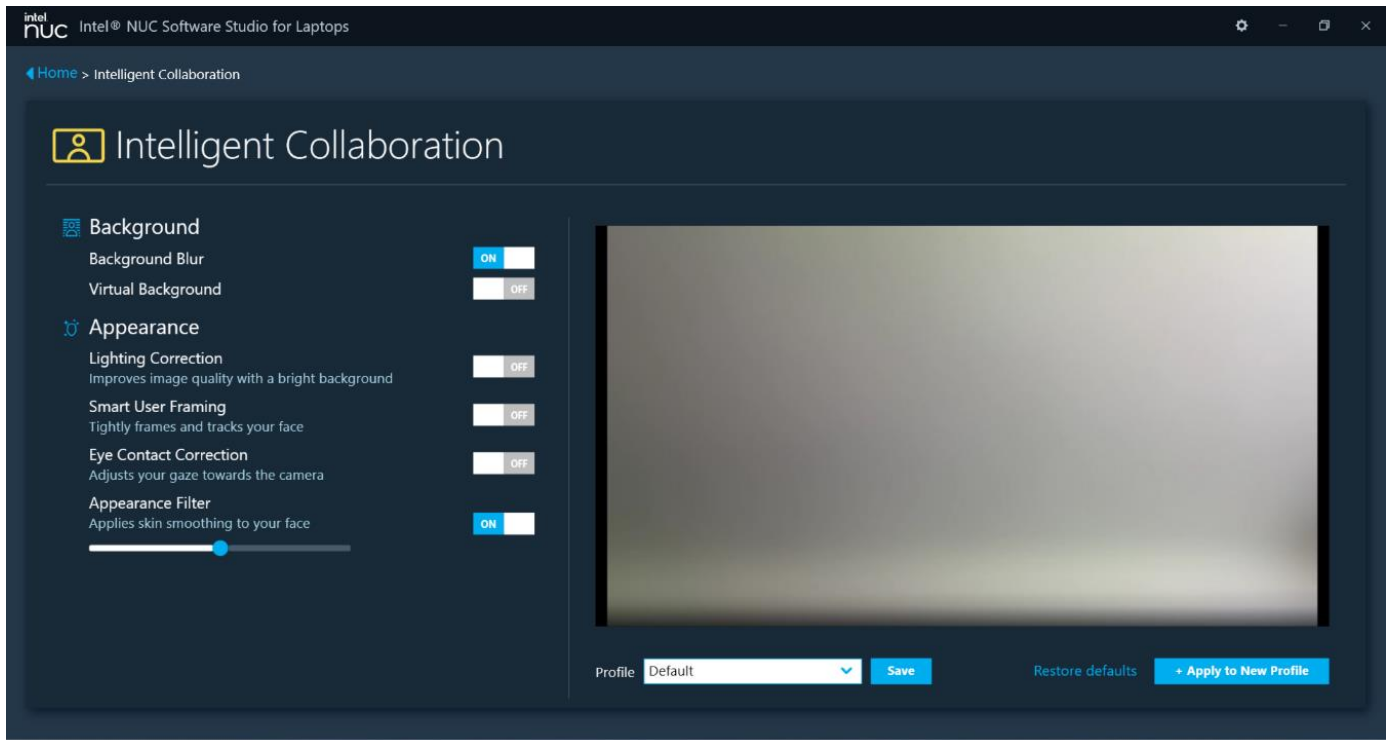
7   Display Settings

Display Modes

The following display modes are supported in **Intel® NUC Software Studio for Laptops**:

- Standard
- Gaming
- Video
- Reading
- Custom

Standard Mode (Default on first launch of Intel® NUC Software Studio for Laptops)

The following sliders are available when Standard mode is selected:
- Display Brightness (Plugged In)
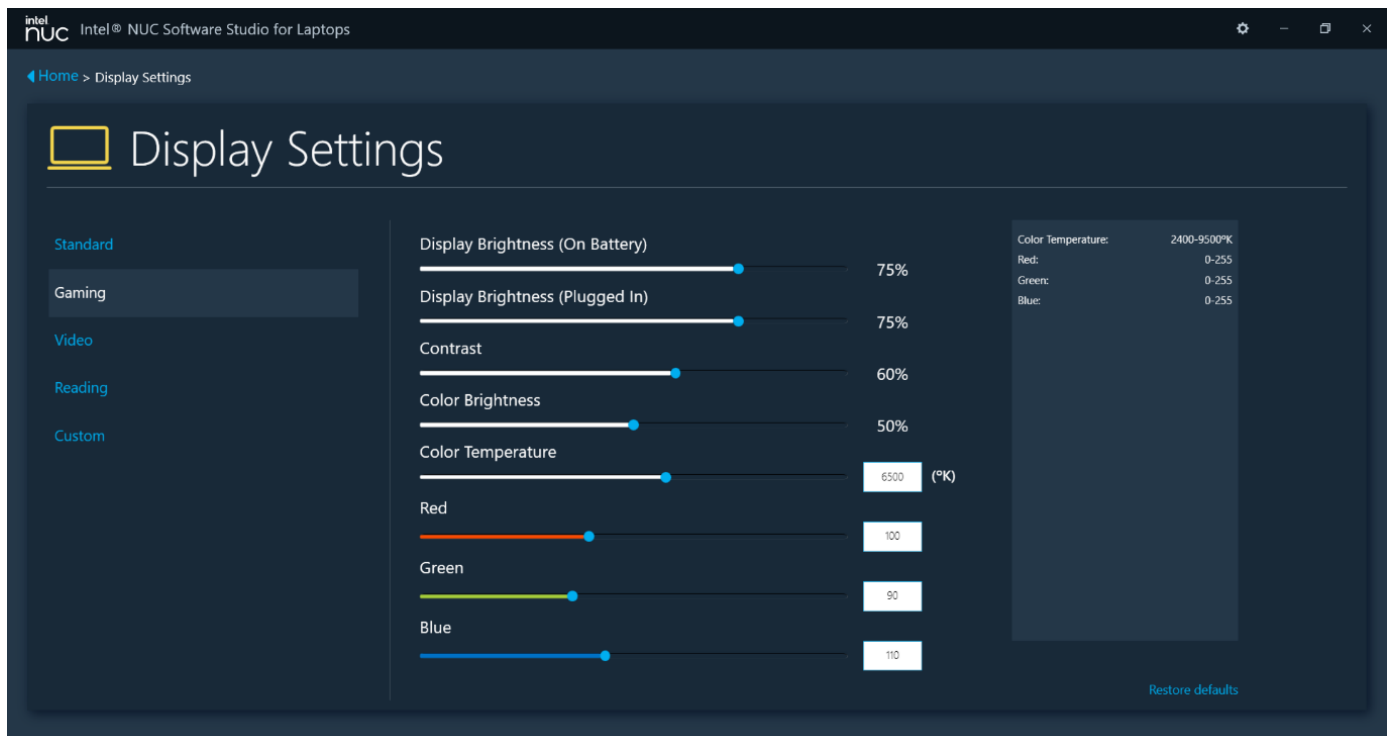- Display Brightness

Gaming Mode

In Gaming mode, the following sliders are available and the physical display will be updated based on these slider adjustments:
> Display Brightness (Plugged In)
> Display Brightness (On Battery)
> Color Brightness
> Contrast
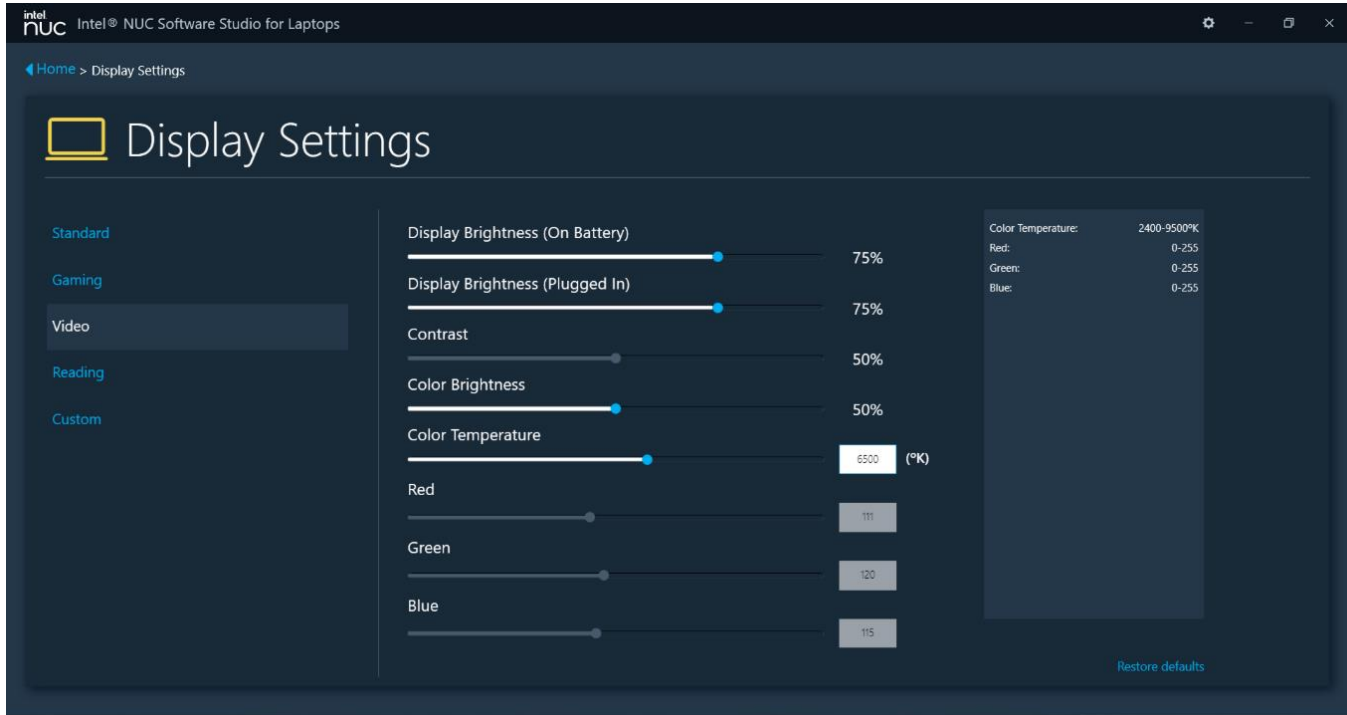> Color Temp
> Red
> Green
> Blue

In this mode, the Restore defaults button is also available and will allow the user to reset the display to the default values

Video Mode

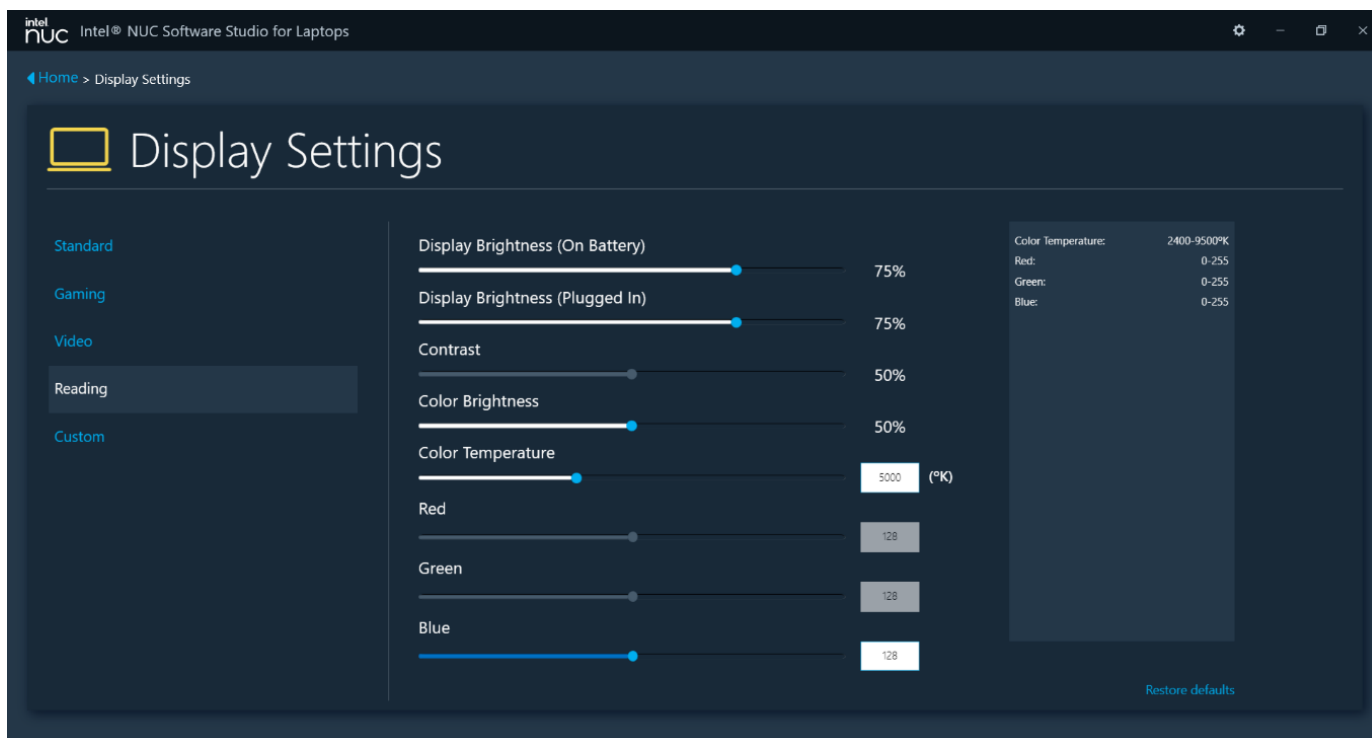In *Video* mode, the following sliders and the *Restore defaults* button are available:
        Display Brightness (Plugged In)
        Display Brightness (On Battery)
        Color Brightness
        Contrast
        Color Temp

Reading Mode

In *Reading* mode, the following sliders and *Restore defaults* button are available:
        Display Brightness (Plugged In)
        Display Brightness (On Battery)
        Color Brightness
        Contrast
        Color Temp
        Blue

Custom Mode

In *Custom* mode, the following sliders and *Restore defaults* are available:
   Display Brightness (Plugged In)
   Display Brightness (On Battery)
   Color Brightness
   Contrast
   Color Temp
   Red
   Green
   Blue
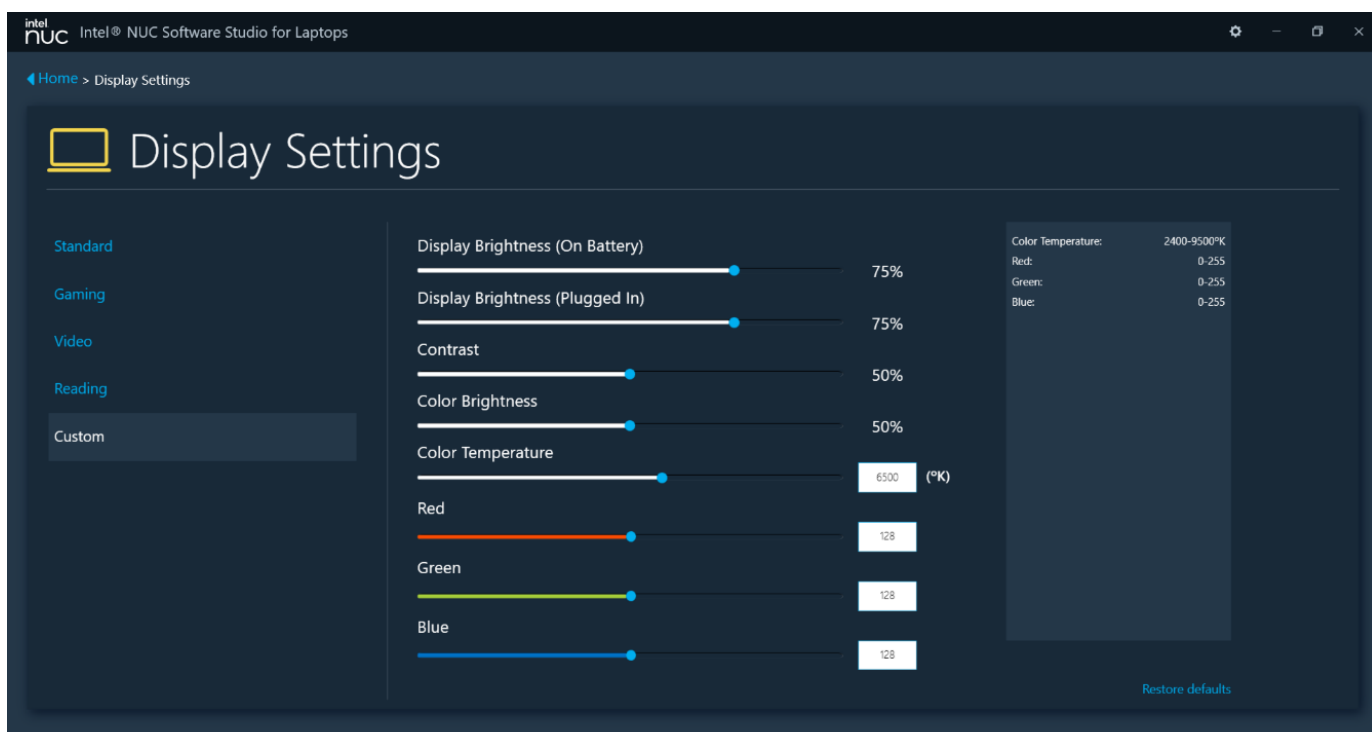
8 LED Light Bar

The LED Light Bar feature supports the following Modes

- Solid Color
- Rainbow
- Voice Assistant
- CPU Frequency
- Battery Charge
- Audio

All Changes to "Enable When", "Brightness" and "Color" for each power state will be applied only when user click the Save button.

LED Light Bar - Solid Color Mode

Mode	Description	Color Selection	Enable/Disable	Custom Brightness/Defaults
Solid	The user can choose colors to display when the system is on AC or DC power.	Supported: Dual AC Default: Blue DC Default: Blue	AC only, DC only, Both Default = AC only	Supported AC Default: 100 DC Default: 50
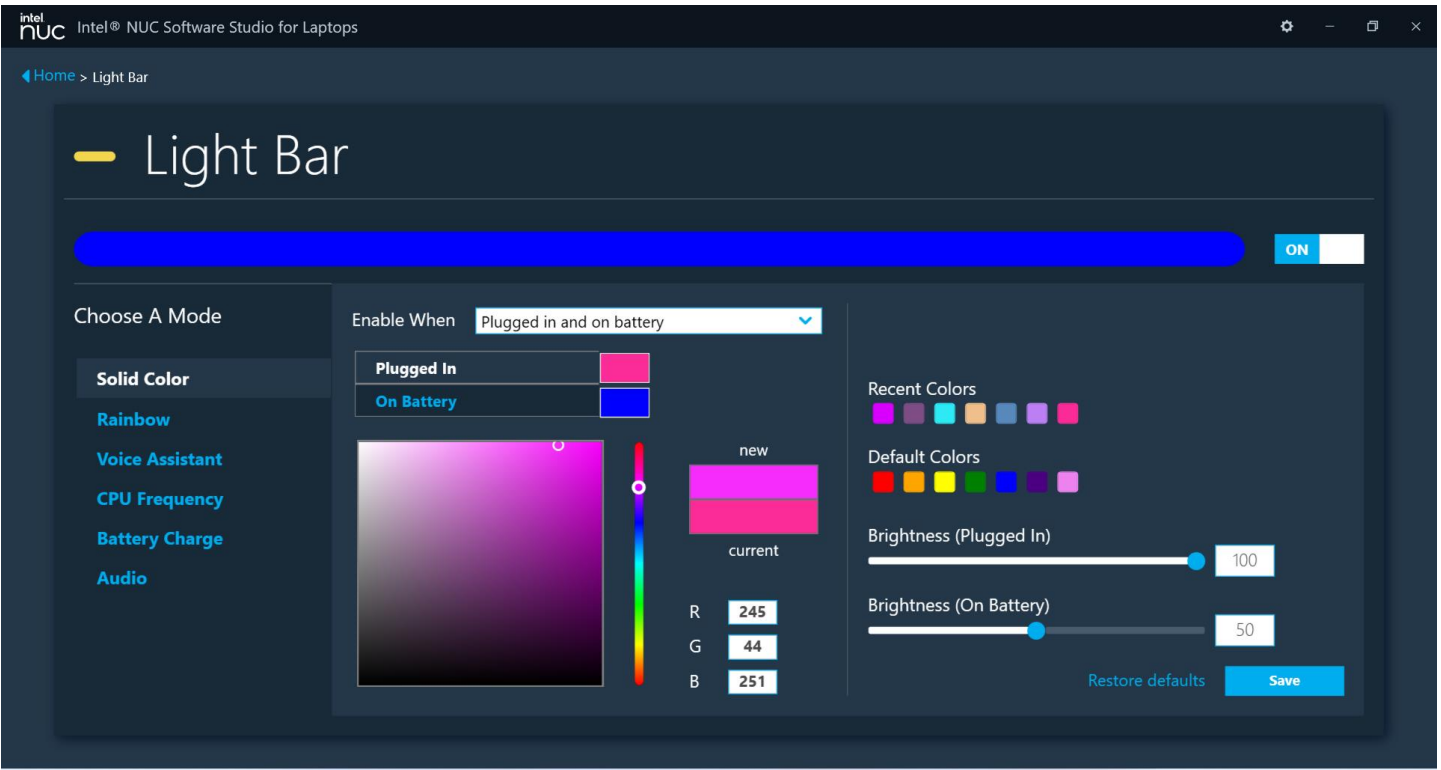
LED Light Bar - Rainbow Mode

Mode	Description	Color Selection	Enable/Disable	Custom Brightness/Defaults
Rainbow	Light bar rotates through the rainbow colors.	Unsupported	AC only, DC only, Both Default = AC only	Supported AC Default: 100 DC Default: 50
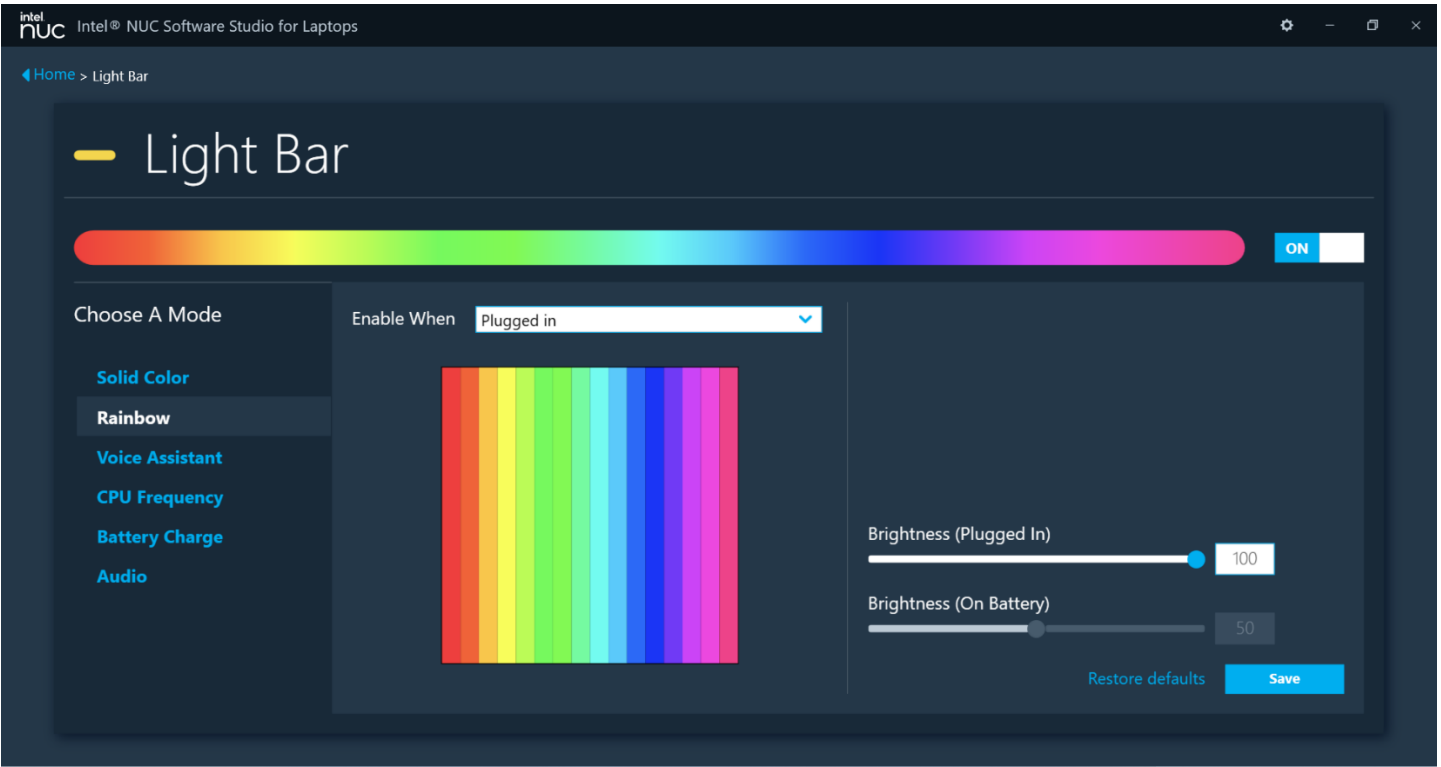
LED Light Bar - Voice Assistant Mode

Mode	Description	Color Selection	Enable/Disable	Custom Brightness/Defaults
Voice Assistant	The light bar will display the current state of the voice assistant in use on the system. The Multiple Voice Assistant platform provided by MSFT will be used to detect and display the appropriate animation.	Supported AC Default: 100 DC Default: 50	N/A	N/A
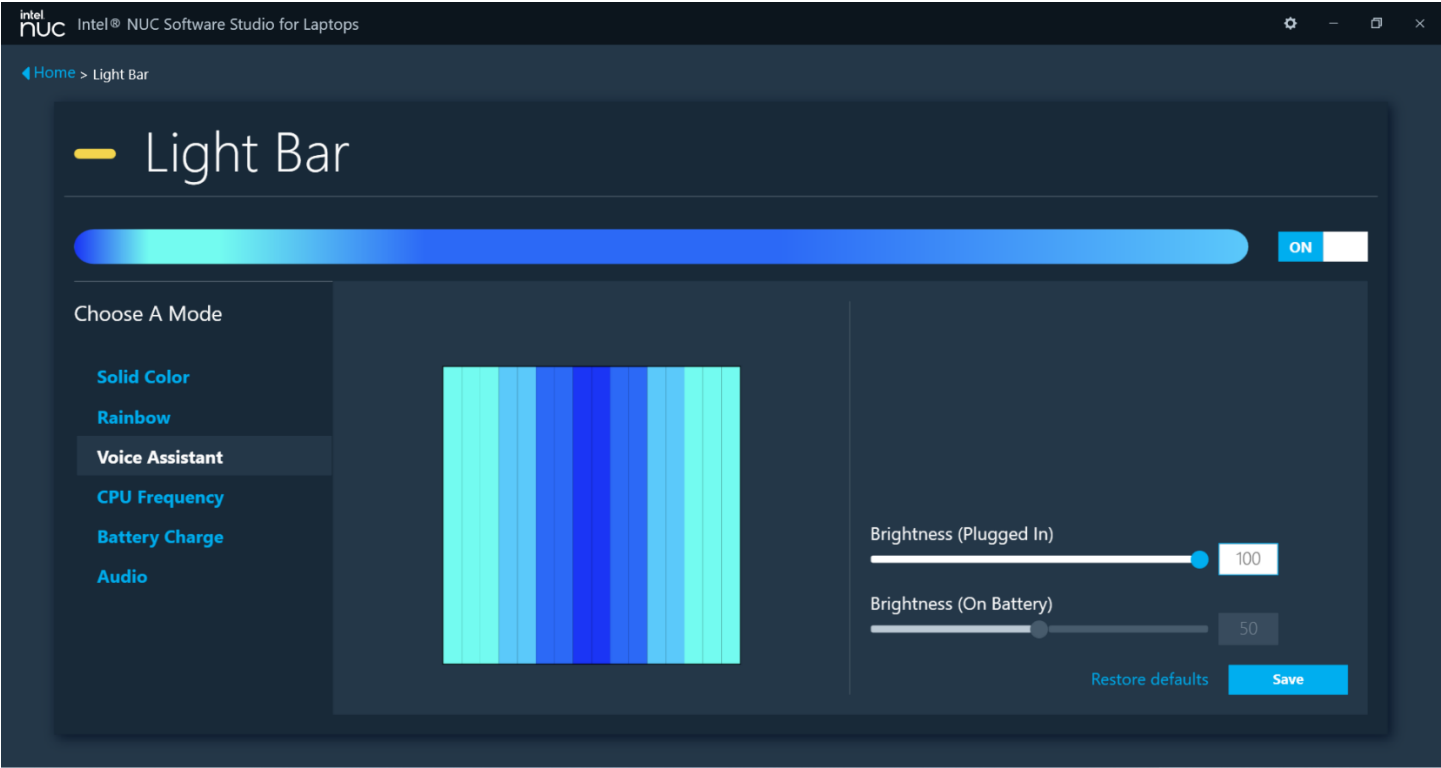
LED Light Bar – CPU Frequency Mode

Mode	Description	Color Selection	Enable/Disable	Custom Brightness/Defaults
CPU Frequency	When the system is at base CPU frequency, the middle of the lightbar will be on. As the CPU frequency increases, more LEDs are lit up (moving from the center out)	Supported: Single Default: Blue	AC only, DC only, Both Default = AC only	Supported AC Default: 100 DC Default: 50
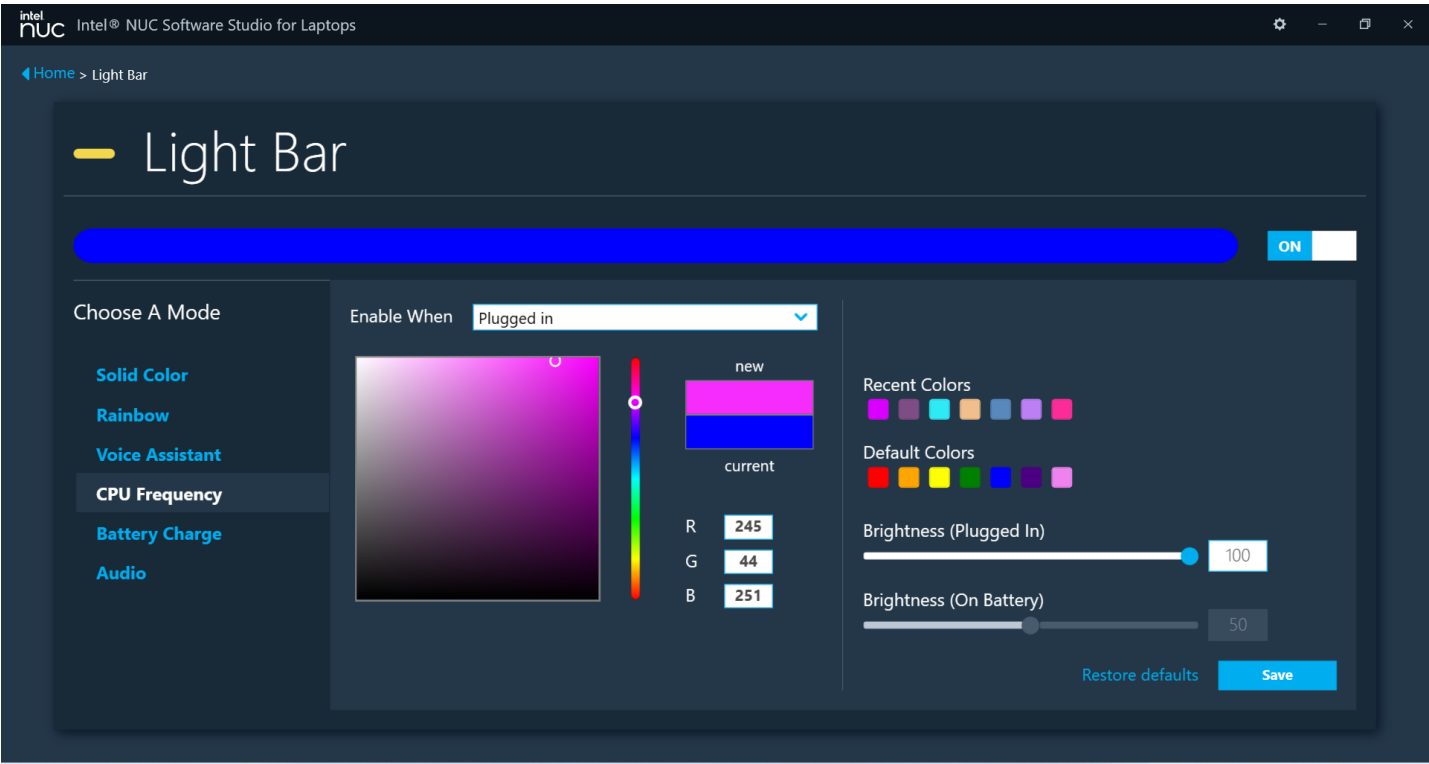
LED Light Bar – Battery Charge Mode

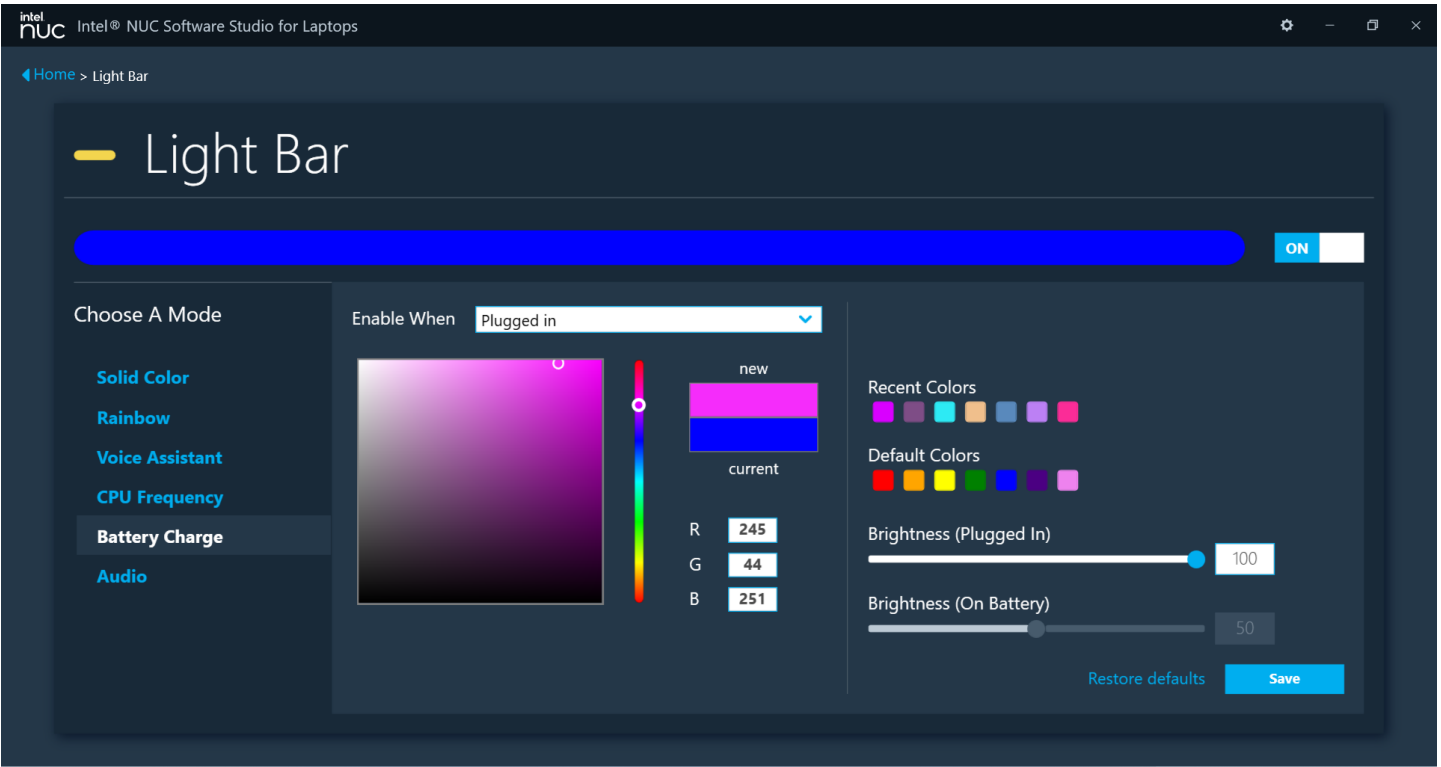| Mode	Description	Color Selection	Enable/Disable	Custom Brightness/Defaults
Battery Charge	When the user connects a power adapter, the light bar displays the charging state (from left to right). When the battery is fully charged, all LEDs will be on.	Supported: Single Default: Blue	AC only, DC only, Both Default = AC only	Supported AC Default: 100 DC Default: 50

Light Bar

ON

Choose A Mode

- **Solid Color**
- **Rainbow**
- **Voice Assistant**
- **CPU Frequency**
- **Battery Charge**
- **Audio**

Enable When Plugged in ▾

new

current

R 245
G 44
B 251

Recent Colors

Default Colors

Brightness (Plugged In) 100

Brightness (On Battery) 50

Restore defaults   **Save**

LED Light Bar – Audio Mode

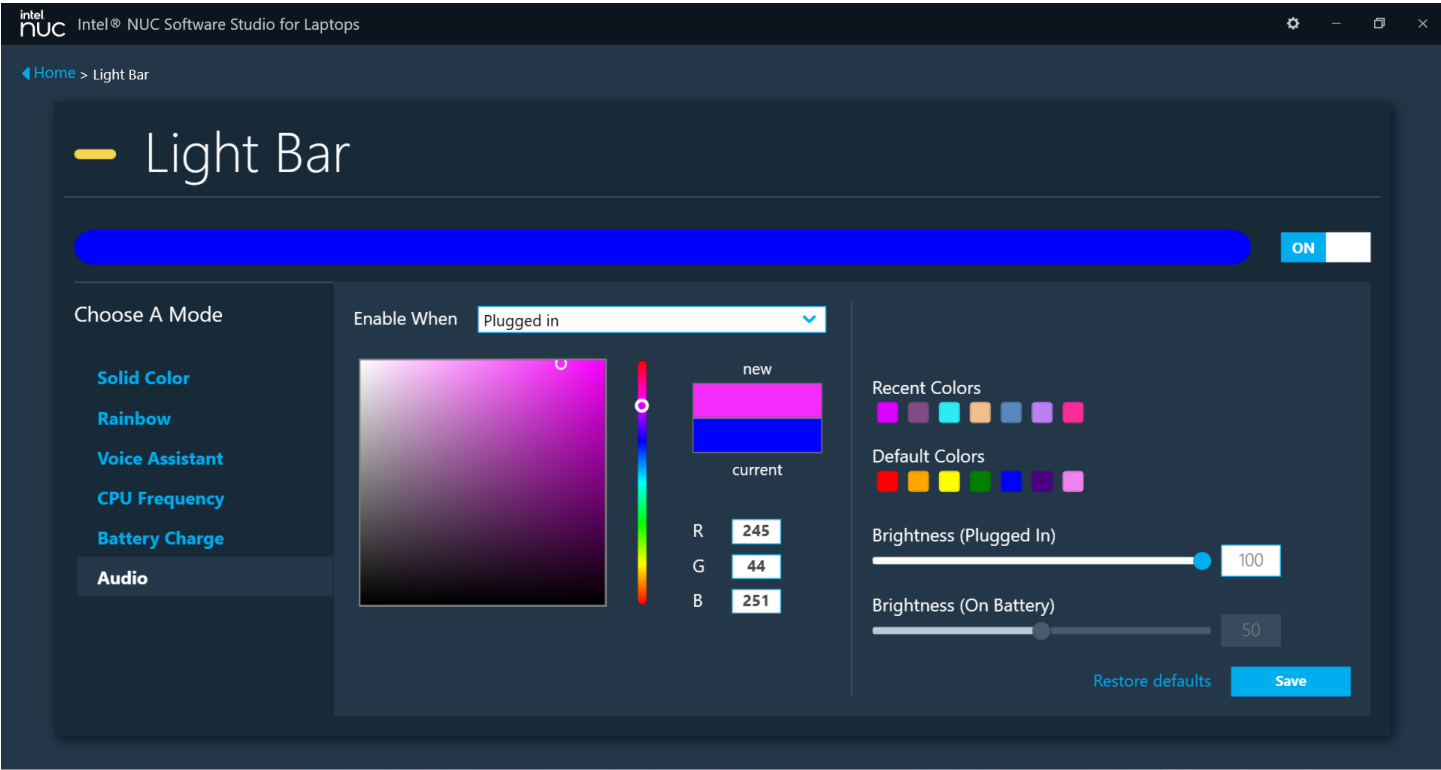| Mode	Description	Color Selection	Enable/Disable	Custom Brightness/Defaults
Audio	Light bar displays sound output meter (from center out)	Supported: Single Default: Blue	AC only, DC only, Both Default = AC only	Supported AC Default: 100 DC Default: 50

9   Audio Tuning

Audio Input

Using the Audio Enhancement toggle, the following Intel Noise Cancellation settings are supported

Audio Enhancement	Intelligent Noise Cancellation
On	Enabled
Off	Disabled

With Intelligent Noise Cancellation enabled, the following input process modes are available:
- Individual (default)
- Group
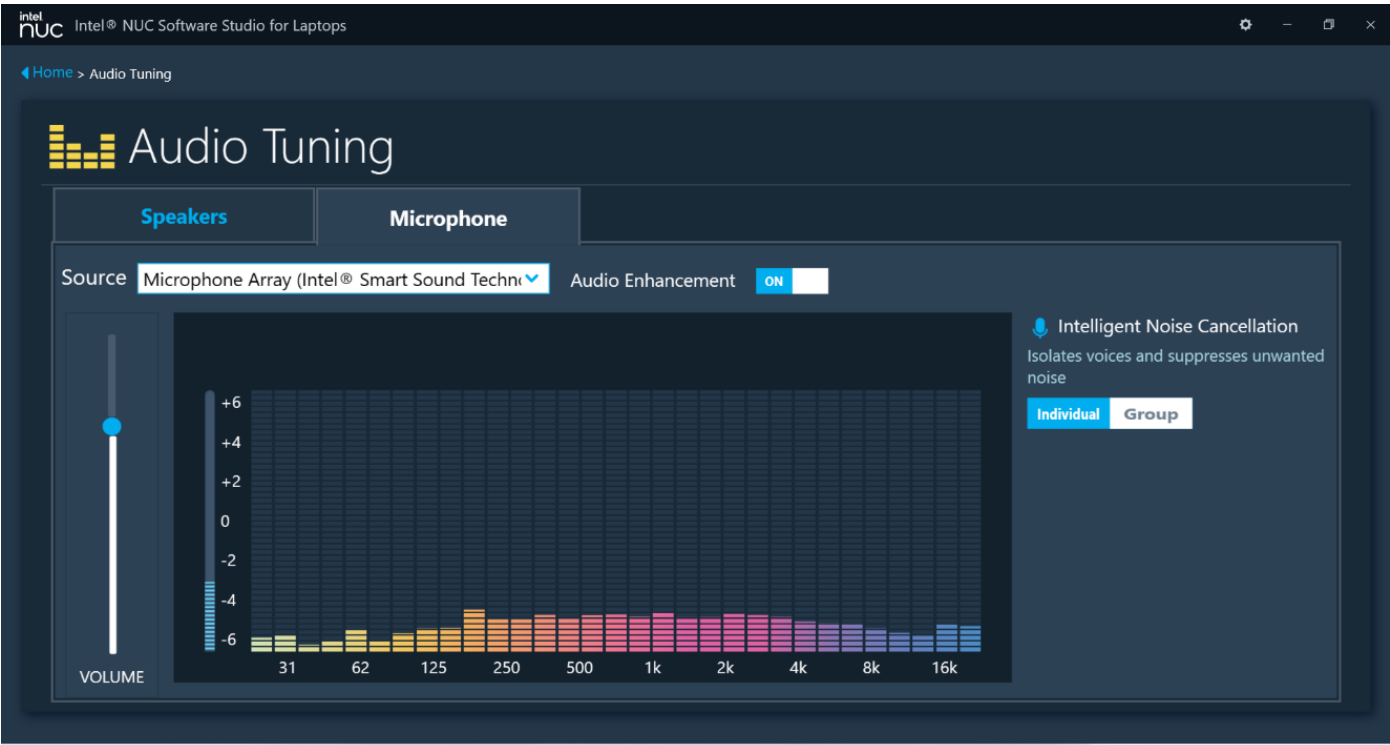
Audio Output

Using the Audio Tuning toggle, the user can turn output processing on or off (including modes and equalizer) as follows:

Audio Tuning	Output Controls	Output Volume Slider
On	Enabled	Enabled
Off	Disabled	Enabled

Audio Output – Processing Modes

The following Modes are available when Audio Processing is enabled:
- Music
- Voice
- Movie
- Gaming

Audio Output – Processing Presets

The following Presets are also available for each Mode when Audio Processing is enabled:
- Bass
- Detail
- Voice
- Surround

Intel® NUC Software Studio - Intel® NUC M15 Laptop Kit / User Guide

Audio Output – Equalizer Frequency Amplification Level Sliders

When the Equalizer toggle is On, individual sliders are available for each of the following frequencies:
- 31Hz
- 62Hz
- 125Hz
- 250Hz
- 500Hz
- 1k Hz
- 2k Hz
- 4k Hz
- 8k Hz
- 16k Hz

Audio Output – Equalizer Presets

The following Presets are available when Equalizer toggle is On:
- Default
- Acoustic
- Blues
- Classical
- Country
- Dance
- Electronic
- Hip Hop
- Jazz
- Metal
- Pop
- Rock